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THE
JOURNAL OF HORTICULTURE,
COTTAGE GARDENER,
AND
HOME FARMER.

A CHRONICLE OF COUNTRY PURSUITS AND COUNTRY LIFE, INCLUDING BEE-KEEPING.

CONDUCTED BY
ROBERT HOGG, LL.D., F.L.S.

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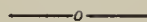
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TO OUR READERS.



ON the completion of the half-yearly volume of the JOURNAL OF HORTICULTURE, to which the annexed index refers, we venture to express a hope that it will not be unworthy of a place with the seventy-five that have preceded it, and we cordially express our obligations to all who have aided in its production.

Among the events recorded in its pages, one that cannot be passed unnoticed here is the death of its founder, Mr. G. W. Johnson, who penned no less than sixty-one prefaces to as many consecutive volumes, and all of them as fresh as from the fountain of youth. From the first and the last of those we cite in commemoration of their author; and his words are as apposite now as they were at the time of their first publication.

In 1848 he wrote:—"Heartily, though briefly, do we thank you for the support you, our readers, have bestowed upon us, and for thus enabling us to complete our first volume so prosperously as to leave us without any anxiety but how to render its pages still more useful."

In 1879 appeared his last address to "Our Readers:"—"We should not feel satisfied with ourselves, and we hope that you would not, if we sent this volume among the 'homes of Great Britain,' or, to speak more justly of ourselves, among the homes of the world, without an expression of our thanks—thanks to you, thanks to our contributors, and thanks to our critics. We are very grateful to those who castigate us as well as to those who praise us, for we assent fully to the axiom 'Blame is bestowed by those who wish you prosperous and those who fear that you will be.' A correspondent writes—'Your pages are like the widow's barrel of meal;' and we say to him and to you all, Your pens and your pence supply the meal we place before you, and we have no fear that either will fail us."

Nor have we any fear, because we coincide fully with our departed friend in the following extract from a letter written in 1865 to Mr. Robert Fenn, who is happily yet with us. In that letter Mr. Johnson remarks—"I will not admit that events occurring and friends existing are not as good, and true, and effective as those which can be no more. I often compare volumes of a year or six months ago with those of earlier date, and I never have yet felt that the younger were inferior to the elders."

We rejoice in having testimony in abundance that the later issues of the Journal are not regarded as "inferior to their elders." As representative examples we take a few lines from an amateur's letter, a merchant, who in writing for information refers to his Vines thus: "The leaves are large, thick, and strong, and the Grapes are very fine this year, and I have you to thank for it, as it is by following your advice for three or four years back that I am satisfied with my Grapes."

A head gardener in one of the best gardens in the kingdom expresses his approval of our work in a very practical manner by sending what he calls a "few remarks for publication in case they may give a little help to any readers of the Journal, and as a slight return for the many valuable 'tips' derived from its pages."

From the letters of two other gardeners at present in less prominent positions we cite. One of them observes—"Your paper is a great boon to me. I eagerly look for it every week, always expecting and always receiving some benefit from its perusal." The other, who has the perusal of a gardening paper, says, "As I neither smoke, nor drink, nor snuff, I think I can afford one of my own, and choose as the most useful for my purpose—the Journal."

If gardeners generally were to follow our friend's advice in having a paper of their "own," preserving and binding the numbers, they would be forming a library that would be of great service to them, and which would increase in value with increasing years.

For ourselves we have no change to record, but shall follow the old path of steady progressive improvement, cheered by the association of a host of strong adherents and skilled coadjutors, to all of whom our best wishes are accorded.

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1	TH	Reigate (Roses).
2	F	Tunbridge Wells.
3	S	Brockham, Eltham, and Crystal Palace (Roses).
4	SUN	2ND SUNDAY AFTER TRINITY.
5	M	
6	TU	National Rose Society's Show, South Kensington.
7	W	Cardiff, Sutton, Oxford (Roses), Ealing.

THE ROYAL HORTICULTURAL SOCIETY'S PROVINCIAL SHOW.

AS this is undoubtedly the most prominent horticultural event of the year, it on that account claims prominence in this Journal. The present is the ninth great Exhibition that the Society has held in provincial cities and towns—Bury St. Edmunds, Leicester, Oxford, Manchester, Nottingham, Birmingham, Bath, Preston, Liverpool—and it is both gratifying and encouraging to record that seven out of the eight preceding shows were financially successful, one only (that held at Preston) was a failure. This misfortune was the result of a combination of circumstances—bad weather, imperfect management and extravagant outlay on the part of the local directorate beyond the Society's control, and a great counter-attraction in the opening of the Blackpool Winter Gardens by the Lord Mayor of London. The loss sustained at Preston appears to have induced the Council of the Royal Horticultural Society to pause before entering on another provincial undertaking; but the strong invitation received from Liverpool, and the prompt and substantial support accorded to the project, warranted a departure from the stay-at-home policy of the past few years. It is in our opinion quite time the Society extended its field of operations. Its influence is cramped by confining its work to the Metropolis. The head-quarters and periodical meetings must of necessity be in London; but the annual exhibitions should be moveable. As a rule the great London horticultural shows are only great in one respect—great mistakes, because financial failures. London is so vast, and its attractions so multifarious, that even a "great" show becomes a mere speck in its midst, and its existence only just becomes known about the day of its close. In the great centres of population in the provinces the case is different—anything of an unusual character there cannot remain in obscurity. Everybody knows about it, and all who are interested support it by their presence if in no other way.

Provincial horticultural exhibitions also afford an opportunity to cultivators in widely separated districts to place evidences of their skill before the public in the best company. They thus stimulate to greater attainments, and a wholesome spirit of emulation is summoned into action, not only between man and man, but district and district, to the general good. A great impetus would be given to the important and enjoyable pursuit of gardening in its widest and highest aspects if the Council of the Royal Horticultural Society could see their way to having great district shows annually, and make the necessary arrangements at least a year in advance, and preferably two years. That is to say, the Exhibition of 1887 should be announced now, an intimation being given at the same time of the invitations that have been received from districts desirous of making provision for the Show of 1888. If the Royal Agricultural Society and similar organisa-

tions did not find it advantageous to act on this principle it would not be adopted. Giving long and definite notice is a chief element of success. The best period, from a district point of view, for holding the show ought also to be well considered. Cultivators in the neighbourhood of Liverpool are, broadly speaking, at a double disadvantage—firstly, the show being almost sprung upon them by surprise, which is nobody's fault, and secondly, in having it a month too soon, through the Liverpool Horticultural Association deciding to have their show at the end of July. In consequence of that decision the Council of the Royal Horticultural Society fixed the date of the present Exhibition so as not to interfere with the local show; then, but too late to alter the arrangement, the members of the Association determined to abandon their show and co-operate with the Royal. Now, if under those circumstances the suddenness of the announcement, the earliness of the date, and the hurried manner in which the preparations were made, an exhibition such as the present one (which all interested in horticulture ought to see) can be produced, what might we not expect under more advantageous circumstances of the nature above indicated?

The Show, both as regards magnitude and the quality of the produce, is worthy of the efforts that were made to achieve a success. The influx of produce on Monday night was very great, but the exertions of the officials surmounted all difficulties, and order prevailed at the appointed time. A very accurate ground plan of the Show appears in another page. The plan of the large marquee will also afford an idea of the disposition of the plants. This covered space is 260 by 130 feet. The three beds at the end are occupied with nurserymen's miscellaneous collections, the larger one next them by Crotons and "effect" groups. The centre of the arrangement is a mass of rockwork, the four surrounding beds containing new and rare plants. Orchids, Nepenthes, Caladiums, &c., enrich the large bed at the opposite end. The narrow side beds are rendered gay with Pelargoniums, the narrow bed across the ends containing Palms and Ferns. The side border all round is quite filled with specimen plants of various kinds. The beds are raised a foot high at the margin and turfed and further elevated towards the centre. Unfortunately the roof is too low, and the splendour of this fine exhibition of plants is on that account diminished. The canvas is also too dark, but if the brilliant weather of the opening day continues there will be sufficient light and more than enough heat to be agreeable. There are various other marquees, and all are filled, not to say crowded. Structures, appliances, &c., occupy several acres of ground, the boiler trials are in progress, and undoubtedly a source of great interest to visitors who are crowding the grounds.

Before describing the classes it will not be inappropriate to give a resumé of the schedule, and to refer briefly to the excellent official who has had such a large share in its arrangement, and who is responsible for the varied details in connection with the management of the Show—Mr. A. F. Barron. We place him, as represented by an excellent portrait, where we think he ought to be placed—in the centre of the Journal that contains a record of his work. He is an adept in the management of exhibitions, and it is necessary that he should be, for he had a great show to provide for in London last week, and on the day after the present Exhibition closes the National Rose Society's Show must be arranged at South Kensington. But all the work will be done in the quiet manner of a man who sees his way, and proceeds step by step in carrying out his plans to completion. The time has not arrived for writing Mr. Barron's history, and we trust it is far distant, and we only say now that he is much more than a show manager—he is an accomplished gardener, an excellent organiser, a fair and careful experimenter, able, just, and deservedly esteemed as the right man in the right place as Superintendent of the Royal Horticultural Society's Gardens, a position he has filled with credit to himself and satisfaction to the Society for twenty years.

THE EXHIBITION.

The Schedule was carefully considered and deserves a few remarks, as the classes have been framed to render it as representative as possible, and the prizes throughout are of liberal amounts, the total being £1200. Taking them in the order of arrangement, the first sixty are devoted to plants, the premier class being that for twelve stove and greenhouse plants, six in flower and six foliage, for which £20, £15, and £10 constitute the first, second, and third prizes. That is open to all exhibitors, but the next for nine specimens is confined to nurserymen, and the third for six to amateurs, the prizes in both being of the same amounts—namely £10, £7, and £5. Hardwooded New Holland plants in flower do not often have a class set apart for them, but this is done at Liverpool, and if other Societies provided some encouragement for these beautiful greenhouse plants it would serve to re-awaken an interest in their culture. Fine-foliage plants invariably form an important portion of large exhibitions, and including Ferns, Crotons, Palms, Dracenas, Caladiums, and Coleuses, fifteen classes are appropriated to them the prizes ranging from £10 to £1. Orchids constitute another important feature, liberal provision having been made for these plants for a group of twenty-five arranged with Palms and Ferns, the prizes are £20, £15, and £10. Two classes are also provided for twelve exotic Orchids from amateurs and nurserymen respectively, the prizes being £15, £10, and £7. There is an amateurs' class for six Orchids, with £8, £6, and £4 as prizes; while the Liverpool Horticultural Company offered a cup value twenty-five guineas and ten guineas in cash for the best twelve Orchids in flower. Then still following the order of the schedule are two classes for new and rare plants not in commerce (nurserymen), or sent out during 1884, '85 and '86 (open). Bromeliads, Nepenthes, Ericas, Azaleas, Roses, Clematises, Rbododendrons, Pelargoniums, Fuchsias, Tuberous Begonias, Gloxinias, Liliums, hardy plants, ornamental trees and shrubs, and groups of plants are all specially provided for, the prizes ranging from £12 to £1.

Cut flowers have twenty classes devoted to them, seven of which are for Roses, the great class being that for seventy-two blooms, the first prize £8, the second £6, and the third £4. Three are for Pelargoniums, and the others comprise Orchids, stove and greenhouse flowers, hardy flowers, Gloxinias, &c. The table decorations and bouquets constitute an interesting section of twelve classes, the first for a dinner-table 10 feet by 5 feet laid for eight persons, the prizes £8, £5, and £3. Table plants, vases, bouquets, and flower sprays are also well provided for.

To fruit twenty-two classes are appropriated, two being devoted to collections, one for eight kinds, including black and white Grapes, and the other for six kinds excluding Grapes and Pine Apples. Seven classes are enumerated for Grapes, Black Hamburgh, Madresfield Court, Muscat of Alexandria, Foster's Seedling, and Buckland Sweetwater having a class each, three bunches being required of the varieties, and the prizes are the same—namely £3, £2, and £1. Pine Apples, Peaches, Nectarines, Strawberries, Cherries, Figs, and Melons constitute other features in the same section. For vegetables there are twelve classes, the leading one for a collection of eight distinct kinds (£6, £4, and £3) attracting the most attention, together with that for the best collection of garden produce to include plants, flowers, fruit, and vegetables, arranged in a space of 100 square feet (prizes £5, £3, and £2). The latter is an innovation intended to give gardeners an opportunity of exhibiting who could not enter the large special classes. Several prizes are contributed by Messrs. James Carter & Co., High Holborn, for Melons and Peas; Messrs. Sutton and Son, Reading, for vegetables and Melons; and Messrs. Webb & Son, Stourbridge, for Peas and Melons, which induced many competitors to enter. A novel class is provided for illustrations of horticulture on board ship, with examples of plants, vegetables, &c., grown on ships and the appliances used, for which medals were offered according to the merit of the exhibits.

Another large section is that for horticultural and botanical literature, science, and art, the exhibits in which are classed in four divisions, but no prizes were offered. The first division is for the literature of gardening, including British and Colonial periodical works, educational books for young gardeners, standard reference works, books illustrative of the history of gardening and botany, foreign garden literature, models, diagrams, and apparatus suitable for the instruction of gardeners in chemistry, physics, or vegetable physiology, and specimens illustrating the methods of grafting and budding. The second division is devoted to technical art, including plans of gardens and parks, garden structures, &c.; and the third division is for botanical and decorative art, comprising drawings of flowers and fruits, photographs, chromo-lithographs, drawings in water or oil, and flower painting on terra-cotta vases, tiles, plates, &c., for which silver-gilt, silver and bronze Banksian medals were offered.

A very important portion of the schedule is that for implements, garden structures, tools, and appliances, and considerable space is devoted to the exhibits in the twenty-one classes, which comprise a great variety of subjects, the awards consisting of certificates and medals. The boiler trial, of which the results will be described, was also a very interesting feature in this section.

THE LARGE PLANT MARQUEE.

One of the great features of the Exhibition is the marquee described on page 1 and represented on page 5. A most diversified and beautiful appearance is presented by the groups and collections in this marquee, which are displayed to the best advantage, the only drawback being that the canvas is somewhat dark, but in bright weather this was not so noticeable. The general effect would have been much improved if the eaves of the spans had been higher, and if less timber had been employed, or it had been of a lighter character.

The entrance to the marquee is at the southern end, and passing in that way the first group which attracts prominent attention is that from Messrs. R. P. Ker & Sons, Liverpool, of which the principal features are the magnificent Crotons, which in colouring could not be surpassed, and many are also of considerable size, all very healthy and handsome, 5 to 6 feet high, and as much in diameter. Facing the entrance is a group of miscellaneous flowering plants; at the left-hand side are groups of hardy flowers and dwarf Roses in pots from Mr. C. Turner, Slough; while on the right are several collections of Tuberous Begonias and a circular group of Palms, Crotons, and miscellaneous foliage plants from Messrs. F. and A. Dickson and Sons. Following the path to the right the visitor passes the exhibits in the classes for stove and greenhouse plants, including beautiful examples of Dipladenias, Ixoras, Ericas, Anthurium Schertzerianum, Clerodendrons, and Allamandas, which furnish a variety of rich colours. Then come groups of stately Palms, well-coloured Crotons, large vigorous Gleichenias, and Coleuses. A fine collection of Palms forms the end group, and from these towards the entrance (still round the side) are Pelargoniums, both show and zonal varieties, hardwooded plants; and Messrs. Laing & Co.'s brilliant Tuberous Begonias from Forest Hill. Turning to the centre of the marquee it will be noticed that there are four crescent-shaped beds, two of these on the right hand side being devoted to groups from Messrs. J. Veitch & Sons, Chelsea, and Mr. B. S. Williams, Upper Eboroway; and the other two are occupied with the Orchids in competition, which make a charming display. Messrs. Veitch & Sons' group contains a choice assortment of new and rare plants, some large specimens of the lovely *Hydrangea paniculata grandiflora* being very noticeable, bearing numerous large trusses of white flowers.

In the foreground are some beautiful Gloxinias, arranged with Adiantums most tastefully, and graceful plants of *Asparagus plumosus*, with a background of grand specimens of *Anthurium Veitchii* and others. Mr. B. S. Williams's group contains an excellent selection of Orchids, about 100 being included, and there are also some of the best new stove and greenhouse plants, together with well-grown representatives of older and better-known useful plants. The Orchids in the competing collections are very handsome, and form a charming feature in the centre of the marquee, a most tasteful system of arrangement being adopted with the majority. Ferns are freely employed, especially Adiantums, with excellent effect, their light green graceful fronds contrasting admirably with the bright or soft tints of the Orchids. Occupying the centre of the tent is a pool of water and rockery constructed by Mr. Clapham of Stockport, which, though very unpretentious, is most artistic and natural in appearance. Huge slabs of imitation red sandstone are irregularly disposed, jutting out into the water and upon these are planted Ferns, Aspidistras, Cotoneasters, and other suitable plants.

The large terminal space shown near the end of the plan is occupied with Orchids at the front at the lowest part of the slope, with small Palms in the centre with tall Fuchsias and Messrs. Laing & Co.'s splendid specimen Caladiums, some of the best grown plants that are seen at exhibitions now. Near the entrance on the right hand side of the tent Messrs. W. & J. Birkenhead, Sale, Manchester, have one of their charmingly fresh groups of Ferns, which comprise a great number of species of Adiantums, Pterises, Selaginellas, Gleichenias, Osmundas, and others. A pan of the violet-scented *Nephrodium fragrans* was noticeable, the plant being very healthy.

Having given a brief outline of the appearance of the exhibits in the large tent we may refer to the classes in detail.

STOVE AND GREENHOUSE PLANTS.

The principal class was that for twelve specimens, six in flower and six foliage, and the entries in this formed a grand bank at the side of the marquee. The premier honours are accorded to Mr. James Cypher, Cheltenham, for his customary grand specimens in magnificent health and of great size. The flowering plants are *Erica Cavendishiana*, 5 feet high and as much in diameter; *Allamanda Hendersoni*, over 5 feet in diameter and well flowered; *Erica tricolor Wilsoni*, 4 feet in diameter, very even and admirably trained; *Anthurium Schertzerianum*, extremely vigorous, with forty-four bright spathes; *Dipladenia amabilis*, globular in form and bearing some charmingly coloured flowers; *Ixora regina*, 4 feet across, with fine trusses of flowers. The foliage plants comprise *Cycas revoluta*, *Kentia Canterburyana*, and *Latania horbonica* very large, and *Kentia australis* graceful. The second place is taken by Mr. J. Mould, Pewsey, Wilts, with smaller but very fresh and beautiful plants. *Dipladenia amabilis*, *Ixora coccinea*, *Erica Fairricana*, *Stephanotis floribunda*, and *Bougainvillea glabra* are the most remarkable for their right healthy condition. Mr. Henry James, Castle Nursery, Lower Norwood, is third with good specimens, but not so fresh as the others; *Pimelea mirabilis*, 4 feet in diameter, being the best plant in his dozen.

In class 2, for nine specimens in flower, Mr. Cypher is again victorious with most beautiful brightly coloured examples of *Ixora Pilgrimi* and Williams, *Allamanda Hendersoni*, *Pimelea decussata*, *Anthurium Schertzerianum*, and Cypher's *Allamanda nobilis*, *Erica Cavendishiana*, and *Azalea Brilliant*. These plants, which are slightly smaller than those in the preceding class, are some of the brightest and best in the Show, and as they occupy a prominent position on a mound they are very effective. Mr. H. James is second, *Rondeletia speciosa major* and *Dracophyllum gracile* being the most praiseworthy plants.

In the amateurs' class for six specimens Mr. A. R. Cox, gardener to W. H. Watts, Esq., Elm Hall, Liverpool, is deservedly awarded the first prize for well-grown plants, including three *Ixora regina*, *Dixiana*, and *coccinea*, the last named a fine mass of flowers and foliage nearly 6 feet in diameter and as healthy as could be desired; *Statice Holfordi*, most vigorous; *Allamanda Hendersoni*, *Ixora Dixiana*, and *Clerodendron Bal-fourianum* being the other plants. Mr. Charles Paul, gardener to S. Schloss, Esq., Osborn Villa, Bowden, takes the second prize with healthy plants, a *Stephanotis* 5 feet high and conical in form and *Boronia elat* or being the two finest plants.

HEATHS.—Six neat specimen *Ericas* are shown by Mr. J. Cypher, who secures the first prize with them; *E. Parmentieriana*, *E. tricolor Wilsoni*, *E. ventricosa grandiflora*, *E. depressa*, *E. ampullacea obtata*, and *E. ferruginea*, all capably flowered, being the varieties represented.

FERNS.—An amateurs' class for six exotic Ferns is provided, in which

Mr. C. Paul has gained the chief position for specimens which have frequently taken honours at previous exhibitions. The three *Gleichenias* Mendeli, rupestris, and glauca, are of great size and in a condition that is seldom equalled. *Dicksonia antarctica*, *Cibotium regale*, and *Brainia insignis* are the others shown, the last-named a beautiful specimen of this very distinct Fern. The best nine exotic Ferns are contributed by Mr. G. Rhodes, gardener to Mrs. Horsfall, Grassendale Priory, Aigburth, Liverpool; capital specimens of *Gleichenia dichotoma*, *Microlepia hirta-cristata*, the distinct *Dicksonia squarrosa*, *Dictyogramma variegata*, a magnificent *Alsophila Moorei* with enormous fronds, *Davallia bullata*, *Adiantum formosum*, *Davallia Mooreana*, and *Gymnogramma chrysophylla*. Mr. A. R. Cox follows with plants equally as meritorious in health and freshness, but smaller. *Goniophlebium subauriculatum* is very effective, elevated on a stand 6 feet high and the fronds drooping nearly to the ground; *Microlepia hirta cristata*, wonderfully strong; *Davallia Mooreana*, *Dicksonia antarctica*, *Gleichenia dichotoma*, very light green, contrasting markedly with an exceptionally dark green *Adiantum cuneatum*.

Mr. G. Williams, gardener to S. Boerlem, Esq., Oak Dene, Didsbury, Manchester, is a good second with six Ferns, showing handsome specimens, *Gleichenia flabellata* and the dark green *Davallia divaricata* being most praiseworthy. Mr. Thomas Gowen, gardener to J. Cunningham, Esq., Lenton Lodge, Mossley Hill, near Liverpool, is a very close third, his plants of *Gymnogramma argyrophylla*, *Adiantum farleyense*, *Goniophlebium subauriculatum*, and *Davallia Mooreana* being superbly grown.

FINE-FOLIAGE PLANTS.—A corner of the large marquee is assigned to Mr. Cypher's nine fine-foliage plants, for which he has obtained the premier award in the class, the huge plants that we have often had occasion to commend; the Palms, *Latania borbonica*, *Areca Baueri*, and *Kentia Fosteriana*, are especially handsome. *Croton Johannis* is well coloured at the upper part, but green below; *Cycas revoluta*, *Gleichenia Mendeli*, *Dasyllirion acotrichum*, *Cordyline indivisa*, and *Croton Sunset* being the other plants, all equally healthy.

ORCHIDS.—These are beautifully represented both by large specimens and choice varieties, and considerable taste has also been exercised in their arrangement. They form some lovely groups on the banks and mounds in the centre of the marquee, and contribute one of the most admired portions of the Exhibition. The leading class is for a group of twenty-five, in which G. Hardy, Esq., Pickering Lodge, Timperley, Cheshire, is placed first with a delightfully tasteful arrangement of Orchids and Ferns, *Aralias*, and Palms. Charming specimens of *Odontoglossum vexillarium* varieties, loaded with flowers, and surrounded by *Adiantum cuneatum*, *Cattleyas Mossiae* gigas and *Sanderiani*, C. Mendeli, and *Lælia purpurata* furnish a richness of colouring that is most pleasing. *Masdevallia Harryana* is pretty; *Odontoglossums*, *Saccolabiums*, the white *Vanda Dennisoniana*, the freely flowering *Aerides Veitchi*, *Odontoglossum cordatum*, and the white floriferous *Dendrobium Dearei* are all notable for their beauty. Very seldom do we see Orchids so effectively displayed, and many exhibitions would be improved by groups of this character. Mr. J. Cypher is second in this class also with a tastefully arranged group, but more Palms are employed and a few *Crotons*, which do not harmonise with the Orchids so well as Ferns. *Odontoglossum vexillarium* O. citrosum, *Dendrobium infundibulum*, and *Epidendrum vitellinum*, with *Cattleyas* and *Lælias* are well shown, but they were spoiled in a great measure by the *Crotons*. Mr. James is third with smaller plants and rather crowded.

For twelve Orchids, distinct, Mr. G. Hardy is again the premier exhibitor with grand specimens of the following:—*Odontoglossum vexillarium*, a pretty variety, with rosy sepals and petals, and a white lip, with scores of flowers; *Aerides odoratum majus*, well flowered; *Cattleya Mendeli*, *Cattleya Mossiae aurea*, very fine; *Cypripedium Stonei*, C. Lawrenciana, with forty flowers; *Dendrobium Wardianum*, with pseudo-bulbs 4 feet high, and clothed with large flowers over the greater part of their length; *Dendrobium suavisimum*, with ten racemes; *Odontoglossum vexillarium roseum*, a mass of flowers; *Cattleya gigas Sanderiana*, a magnificent variety, with a richly coloured lip; *Cattleya Mossiae*, superbly flowered; and *Cypripedium Parishii*, with twelve racemes of its curious brown and greenish flowers. Mr. T. Worth, Orchid grower to Enoch Harvey, Esq., 12, Riversdale Road, Aigburth, takes the second prize for well-flowered plants of *Cattleya guttata Leopoldi*, with three huge racemes; *Phalenopsis speciosa* has six spikes, with four to six flowers each; *Lælia purpurata*, of good colour; *Masdevallia Harryana*, bright; *Cattleya Mendeli*, C. *Sanderiana*, *Odontoglossum citrosum*, O. *vexillarium*, *Aerides crispum*, O. *Alexandrae*, *Cattleya Warneri*, *Odontoglossum vexillarium*, and *Epidendrum vitellinum majus*. The third prize is secured by Mr. W. J. Thomson, Ghyllbark, St. Helens, with a pretty collection in which is a *Schomburgkia* unnamed, but which resembles *undulata*, the greenish white sepals and petals narrow, and wavy at the margin, the lip tipped with dark crimson; *Cattleya lobata*, with twenty flowers; *Aerides Lobbi*, with two panicles; *Cattleya gigas Sanderiana*, *Anguloa Ruckeri sanguinea*, *Dendrobium Bensoniae*, D. *Dalhousianum*, and *Anguloa Clowesi* are all capital specimens. An extra prize is awarded to Mr. John Alexander, gardener to Holbrook Gaskell, Esq., Woolton Wood, for charming specimens of *Masdevallia Veitchiana grandiflora*, very large flowers, and highly coloured; *Dendrochilum filiforme*, a graceful plant, with thirty drooping spikes; a fine plant of *Dendrobium tortile rosenm*, capitally flowered; and *Anguloa Clowesi*, with six flowers.

A nurserymen's class for twelve Orchids brought several competitors, Mr. J. Cypher leading with handsome specimens of *Dendrobium suavisimum*, bearing ten racemes, *Dendrobium Dearei*, a "made up" specimen loaded with pure white flowers, *Saccolabium guttatum*, *Epidendrum vitellinum*, O. *vexillarium* and *Cattleyas*. Mr. H. James follows, showing *Dendrochilum filiforme*, *Aerides Fieldingi*, with a spike over 2½ feet long, *Brassia verrucosa* and *Cattleya Mendeli*, both freely flowered. The best six amateurs' Orchids are from Mr. G. Hardy, comprising three fine *Cattleyas*, C. *Mossiae*, C. *Mendeli*, and C. *gigas Sanderiana*, in excellent condition, the last named having two dozen flowers, and *Dendrobium cras-inode Barberianum*, very late. Mr. Harvey is second for smaller plants, C. *Mendeli* being the best, and *Epidendrum Wallisi* is notable as a curiosity.

The Liverpool Horticultural Company, Garston (Mr. John Cowan) offered a cup value 25 guineas and 10 guineas in cash for the best group of

twelve Orchids in flower, and this was awarded to Mr. G. Hardy for very handsome specimens of *Cattleya Mossiae* var. *aurea* on a raft and crowded with flowers; *Dendrobium Jamesianum*, very healthy, well flowered, and of a fine variety; *Cattleya gigas Sanderiana* with fourteen flowers; *Odontoglossum vexillarium*, *Cattleya Mendeli*, *Brassia Lawrenciana*, *Cypripedium superbiens* with eighteen flowers, *Cattleya Warneri* with fourteen fine flowers, C. *Mendeli* variety handsome, *Odontoglossum vexillarium*, and a marvellously fine plant of *Dendrobium Devonianum* in a large pot and elevated above the other plants with drooping growths 3 to 4 feet long and densely clothed with brightly coloured flowers.

Messrs. Sander & Co., St. Albans, have a compact group of *Odontoglossums* in many beautiful varieties, crispum, vexillarium, citrosum, and other species being represented. Some good *Cattleyas* and a few *Epidendrum* are included, and serve to brighten the group. The Liverpool Horticultural Company, Garston, have a collection of small Orchids tastefully arranged with Ferns, the former being chiefly *Odontoglossums*, *Cattleyas*, *Masdevallias*, and *Dendrobiums*. The Hon. and Rev. J. T. Boscawen has a wonderfully strong plant of *Lælia purpurata* with eight enormous flowers and fine leaves.

CALADIUMS.—Messrs. J. Laing & Co., Forest Hill, are the only exhibitors of *Caladiums*, and secure the first prize for well-grown specimens of *Leopold Robert*, red veins on a white ground and with green edge; *Candidum* white with green veins; *Ludemannii*, red veins and white spots on a green ground; *Ornatum*, red veins and bright metallic green; *Fritz Kachlin*, red and green veins on a white ground; and *Ferdinand de Lesseps*, bright red, with greenish veins on margin.

PALMS.—The Palms form a group at the end of the marquee, Mr. G. Williams being first with healthy specimens of medium size mostly, a few tall ones at the back. *Pritchardia pacifica* is very fine, *Geonoma Schottiana*, *Kentia australis*, *Phoenix rupicola*, *Thrinax elegantissima*, *Cocos Weddelliana*, *Kentia Belmoreana*, *Phœnicophorum seychellarum* and *Kentia Canterburyana*. Messrs. C. P. Ker, Aigburth, Liverpool, are second with very neat specimens, *Licuala grandis*, *Thrinax elegans* and *Latania borbonica* being the most notable.

NEPENTHES AND SARRACENIAS.—For nine *Nepenthes* or *Sarracenias* Mr. H. James is the leading exhibitor, showing all *Nepenthes Dominiana*, robusta, *Rafflesiana*, *Mastersiana*, *nigrum*, *Courti*, *intermedia*, *Hookeri*, *hybrida*, and *Mastersiana*, with numerous pitchers of good colour. Mr. C. Paul is second with seven vigorous examples of *Sarracenia purpurea* capitally grown, and S. *Fieldisi* and *Drummondii* with numerous pitchers.

BROMELIADS.—The only collection of these is from Messrs. R. P. Ker and Sons, who take the first prize for twelve admirably grown specimens of *Tillandsia tessellata*, *Karatas Legrelli*, *Masangeana musaica*, *Nidularium fulgens*, N. *pictum*, *Pourretia mexicana*, *Æchmea spectabilis rubra*, *Bromelia sphacelata*, *Nidularium Meyendorffii*, *Vresia hieroglyphica*, *Eucholirion Saundersi*, and *Æchmea spectabilis*.

PELARGONIUMS.—Two brilliant banks of *Pelargoniums* are formed, Mr. C. Turner, Slough, taking the first prize in the class for a group, followed by Messrs. C. Ryland & Co., Ormskirk, both having profusely flowered specimens of show and decorative varieties. Mr. A. Bridge, The Gardens, Greenhill, Hutton; Mr. W. Bustard, gardener to J. Lewis, Esq., St. Anne's Road, Aigburth; and Mr. T. Gowen, are the prizetakers with Zonal *Pelargoniums*, having plants 4 feet across and flowering most abundantly. Mr. C. Turner is also first with nine Show and Fancy *Pelargoniums*, exceedingly handsome plants loaded with flowers, some like Gold Mine, *Ritualist*, and *Invincible* having a splendid effect. Messrs. C. Ryland & Co., and Mr. Bridge are other competitors in this class, taking the second and third prizes. Mr. G. Rhodes; Messrs. Fleming & Sons, Maghull; Mr. J. Dixon, Ashton near Preston; and Mr. Gowen, secure prizes in other classes with good plants. Messrs. R. Fleming & Sons, Maghull; Mr. Ashcroft, West Derby; and Mr. H. James winning the prizes for Ivy-leaf *Pelargoniums* in the order named, the first having tall conical plants profusely flowered; *Emilie Lemoine* with large double scarlet flowers attracting much notice. Mr. W. Bowring, Aigburth, has been awarded the first prize for six *Achimenes*, large specimens; and Mr. Gowen is second with smaller specimens. Mr. A. R. Cox has the best six amateurs' fine-foliage plants, excellent examples of *Latania borbonica*, *Seaforthia elegans*, *Calamus ciliaris*, very large; *Croton Disraeli*, well coloured; *Alocasia macrorrhiza variegata*, and *Croton Queen Victoria*.

A class is devoted to twelve hardwood New Holland plants, and the first prize is won by the only exhibitor, Mr. J. Cypher, who has splendidly grown plants of *Aphelexis macrantha grandiflora*, *Dracophyllum gracile*, *Genetyllis tulipifera*, *Aphelexis macrantha rosea*, *Phœnocomma prolifera* Barnesi, *Pimelea acutissima*, *Hedera tulipifera*, and others.

TUBEROUS BEGONIAS.—Messrs. J. Laing & Co. are the premier exhibitors of *Tuberous Begonias*, securing first prizes both for twenty-five and nine varieties. Both groups are extremely fine, the varieties of the admirable character for which this firm is distinguished. Many of these have been certificated at previous shows. They are almost as greatly admired as the Orchids, and the collections are neatly margined with *Asparagus plumosus nanus* and *Ophiopogon javanicus variegatus*. W. Bowring, Esq., and Mr. J. Forbes, Hawick, are second and third with smaller plants. Mr. Bowring, Mr. Jellicoe, and Mr. A. R. Cox are the prizewinners in the amateurs' class.

ROSES IN POTS.—In the class for twenty Roses in 8-inch pots Mr. C. Turner is first with the beautiful little plants already noted; some of them have fourteen to twenty flowers each, and all are good. La France, Madame G. Luizet, Miss Hassard, Madame Lacharme, Edward Morren, and Boule de Neige are excellent. Messrs. Paul & Son, Cheshunt, are second with very similar plants of good varieties.

HARDY PLANTS.—For the lovely varied group of hardy plants on the left hand side of the entrance to the large marquee Messrs. James Dickson and Sons, Chester, are awarded first honours. It comprises tall plants of *Lilium speciosum album* and *rubrum*, L. *candidum*, and *Galtonia candidum* at the back, with large bushes of *Mimulus cardinalis* varieties, *Campanula macrantha*, *Lilium chalcidonicum*, *Phloxes*, and *Spiræa palmata*, with *Irises*, *Oenothera fruticosa*, the scarlet *Delphinium nudicaule*, and *Aster alpinus* in front. Enoch Harvey, Esq., is a good second, showing massive *Pæonies*, *Pyrethrums*, *Campanulas*, *Armerias*, and other plants. Messrs. Paul and Son, Cheshunt, are first with fifty alpine plants, staging choice species and

varieties of some of the best alpine in cultivation. Mr. John Forbes, Hawick, has secured the first prize for a collection of Pansies in pots, all good varieties and admirably grown, Mr. Bustard being third.

CROTONS.—We have already referred to Messrs. Ker & Sons' superb Crotons, and it is only necessary to add that they were awarded the first prize in the class for twelve distinct varieties, those included being Newmanni, Aigburthensis, Countess, Bergmanni, Mortefontanensis, Hawkeri, Evansianus, interruptus aureus, Wiesmanni, musaicus, interruptus elegans, and Sinitzinianus. Mr. J. Cypher is second with good plants, but not so bright as the others. Mr. C. Finnigan, Winter Gardens, New Brighton, is first in the amateurs' class for six with well-grown specimens, but like the preceding looking dull in comparison with the Aigburth Crotons.

The Gloxinias from Mr. Agnew, gardener to Mrs. Watts, Gravelandale Park, Aigburth, won him the first prize, an honour they well deserved for their vigour and floriferousness.

NEW AND RARE PLANTS.—Messrs. R. & P. Ker & Sons have the first prize in this class for *Adiantum cuneatum deflexum*, *Ficus elasticus albavariata*, *Davallia feniculacea*, *Anthurium Veitchii flore-rubro*, *Adiantum rhodophyllum*, *Croton Aigburthensis*, *Glymnogramma gloriosa*, *Anthurium carneum*, *Mediulla Curtisi*, *Croton ruberrimus*, *Selaginella viridangula*, and *Vriesia hieroglyphica*. Messrs. W. & J. Birkenhead, Sale, are second, showing Ferns, *Adiantum Mariesi*, *Davallia tenuifolia Veitchii*, *Nothochlæna Aschenborniana*, *Pellaea pulchella*, *Anemia Dregeana*, *Nephrodium Sangwelli*, *Nephrolepis Bausei*, *Cheilanthes leucopoda*, *Adiantum Neo-Caledoniæ*, *Pellaea species Adiantum Collisi*, and *A. digitatum*.

GROUPS.—A most effective and handsome group secured the first prize for Messrs. R. P. Ker & Sons (in class 51), Crotons being freely employed with Bermuda Lilies, *Dacænas*, *Anthurium Andreanum*, *Adiantums*, and an edging of Ferns and Ivy-leaf Pelargoniums. In class 53 (for nurserymen) the same firm is first for a very extensive group of small Crotons, *Dracænas*, Pelargoniums, and miscellaneous plants tastefully arranged. Messrs. W. J. Birkenhead, Sale, follow in class 51 with their choice group of Ferns, which has been already noted. In class 53 Mr. S. Johnson, Birkenhead, Cheshire, has the second prize for a collection of miscellaneous flowering and foliage plants.

For the best group of Miscellaneous plants arranged for effect J. Barlein, Esq., takes first prize with an effective arrangement; W. H. Watts, Esq., second, and F. H. Gosage, Esq., Camp Hill, Woolton, third.

For fifteen British Ferns, distinct, open, Mr. Thomas Bolton, Fern Cottage, Warton, Carnforth, secures the first prize with grand plants of *Athyrium F.-f. plumosum* var. *Stansfieldi*, *Lastrea Filix-mas* var. *grandiceps*, *Athyrium F.-f. plumosum* var. *Axminster*, *Trichomanes radicans*, a pretty piece of *Lastrea Filix-mas angustata*, &c. Messrs. Rylance & Co., Ormskirk, are second, and Messrs. W. & J. Birkenhead, Sale, Manchester, third. Messrs. Backhouse & Son exhibit a beautiful group of Alpines, and a group that will keep up the reputation of this celebrated firm; amongst which was a very pretty pan of *Athyrium Filix-foemina Edwardsi*, *Ornithogalum lacteum*, *Linum provinciale*, *Ourisia coccinea*, *Veronica rupestris*, *Dianthus alpinus*, *Hieracium valdeflosum*, *Campanula speciosa pulla*, fine large mass. *Lithospermum graminifolium*, *Campanula turbinata*, *Darlingtonia californica*, &c.

For six British Ferns (amateurs), Mr. T. Foster (gardener to John Brancher, Esq., Green Bank, Liverpool) comes first, a specimen of *Athyrium F.-f. plumosum* is very notable. Mr. Peter Barber second, and E. Bowring, Esq., third.

HARDY SHRUBS AND TREES.—Messrs. James Dickson & Sons, Chester, are first with a group of hardy ornamental shrubs and trees, mostly small specimens, but representing all the most distinct varieties with cut or coloured leaves. Messrs. W. Burron & Son, Elvaston, Borrowash, are second with a number of Japanese Maples and other pretty varieties of shrubs.

MISCELLANEOUS.—A group of sixty plants of *Souvenir de la Malmaison* Carnation, shown by Mr. Jennings, gardener to Leopold Rothschild, Esq., Ascott, Leighton Buzzard, attracted much admiration, the growth being exceedingly strong and the flowers of great size. Similar grand specimens were shown by the same exhibitor some time ago at South Kensington, and were then as great an attraction as on this occasion. Mr. C. Turner also had a group of Carnations, the white and pink varieties of *Carnation Souvenir de la Malmaison* and others being admirably represented. Messrs. R. Smith & Co. supply a choice group of *Clematis* in pots, globular plants, beautifully flowered. Dwarf Roses in pots are excellently represented, Japanese Maples and collections of Rose blooms, Pæonies, Pyrethrums, Irises, and hardy flowers from their extensive collections in the St. John's Nursery. Messrs. Kelway & Son, Langport, contribute an enormous number of Pæonies, Pyrethrums, and Gaillardias, including many superb varieties, rich in colour and distinct.

Messrs. James Dickson & Sons exhibit an interesting group of succulents. In the class for Lycopods Mr. Thomas Foster (gardener to John Brancher, Esq., Green Bank, Liverpool), takes first prize. *Dracænas* are well shown. For six, distinct, Mr. John Lambert (gardener to Col. Wingfield, Onslow Hall, Shrewsbury), comes in first with *Anerleyensis*, *Baptistic*, *Gladstoni*, and *amabilis*, the others not being named. Mr. Geo. Williams takes the second, and Mr. A. R. Cox (gardener to W. H. Watts, Esq., Elm Hall, Wavertree), third.

The famous York firm has also a grand exhibit of Filmy Ferns, *Trichomanes nerifolium*, a very rare species; *T. trichoidenm*, &c. They have also a very nice group, amongst which are some fine varieties of *Cattleya gigas*, *Gleichenias* in variety, and a very pretty specimen of *Adiantums*, *Agaves*, &c.

Messrs. James Carter, High Holborn, exhibit some charming annuals in pots, a speciality of that renowned firm. *Nasturtium Lady Bird* was very effective, also some masses of *Kaulfussias*, *Phlox Drummondii grandiflora* compacta, and *Chrysanthemums Tricolor Lord Beaconsfield*, *The Sultan*, and *Sulphur Yellow*.

The Liverpool Horticultural Company exhibit a magnificent group of double Petunias, a very effective group of Palms, Crotons, &c., and a charming group of Tea and Miniature Roses.

The following medals have been awarded—Gold Medals to Messrs. James Veitch & Sons, B. S. Williams, Backhouse & Sons, T. Rivers & Son, and Mr. Clapham. Silver-gilt Flora medals to Messrs. W. Cutbush and Son, F. & A. Dickson, F. Sander & Co., R. Smith and Co., Liverpool Horticultural Company, and Mr. Jennings.

Silver-gilt Banksian medals to Messrs. J. Backhouse & Son and Mr. B. S. Williams.

Silver Banksian medals to Mr. J. Alexander, Mr. C. Turner, and J. Carter & Co.

Bronze medals to Mr. E. Bridge and Messrs. J. Dickson & Sons.

Silver-gilt medal is awarded to Messrs. Kelway & Son, a silver medal to J. Dickson & Sons, and a bronze to Messrs. Dobbie & Co.

CUT FLOWERS.

In the cut flower tent the Rose reigns supreme, and notwithstanding the lateness of the season the blossoms are very fine indeed. In the open class for twelve distinct varieties the Cranston Nursery and Seed Company comes in first with fresh and bright blooms, the following being among the best—Constantin Tretiakoff, Mons. Noman, Countess of Oxford, Pride of Waltham, Ulrich Brunner filis, Princess Mary of Cambridge, Magna Obarta, A. K. Williams, Marie Baumann, Peach Blossom, Madame Victor Verdi r, Etoile de Lyon, Marquis de Castellane, Lady Mary Fitzwilliam, La France, Merveille de Lyon, and Camille Bernardin, &c. G. P. Budd, Esq., 8, Gay Street, Bath, comes in second with neat blooms, and Messrs. Paul and Son, Old Nurseries, Cheshunt, third. For forty-eight distinct blooms the Cranston Nursery and Seed Company is again first with good blooms of A. K. Williams, Alba Rosea, Dupuy Jamin, Anna Olivier, Henrich Schultheis, Julia Touvais, Maréchal Neil, Docteur Andry, &c. Messrs. Paul and Son are second with, amongst others, good blooms of Madame Victor Verdier, Comte Rainaud, Beauty of Waltham, and Captain Christy, Mr. J. House, Peterborough, third. In the class for twenty-four Roses, distinct (nurserymen), Mr. Geo. Prince takes the premier position with a grand lot of Teas, amongst others were splendid blooms of Maréchal Neil, Souvenir d'un Ami, Amazone, Francisca Kruger, Catherine Mermet, Mons. Furtado, Niphetos, &c. The Cranston Company is second, and Messrs. Geo. Cooling & Sons, Bath, third. We scarcely expect to see finer stands than these during the season. Mr. Geo. Prince is again to the fore in the class for twenty-four Teas—Etoile de Lyon, Hon. Edith Gifford, and Catherine Mermet being very good. Messrs. Cooling are second with a nice stand. In the amateurs' class for twenty-four Roses, distinct, Mr. Budd is first with a good stand, and R. E. West, Esq., Reigate, receives third prize. Twelve Roses (distinct), Mr. E. Claxton, The Rosery, Allerton, is first with a good box of Teas; S. P. Budd, Esq., and R. E. West, Esq., third. Twelve Tea Roses (amateurs), Mr. Claxton is first, Mr. Budd second, and Mr. M. Bulley third. Mr. Claxton exhibits, not for competition, eighteen good blooms of Madame Cusin.

Orchids, cut flowers, twelve varieties, distinct. Mr. James Cypher comes in first with a really pretty lot, comprising amongst others good blooms of *Cattleya Gaskelliana*, *Epidendrum vitellinum*, and *Lælia purpurata Brysiana*. A. Heine, Esq., Birchfield, Fallowfield, second, and H. Gaskell, Esq., third.

Twelve bunches Pelargoniums.—Mr. C. Turner, Slough, is first and Messrs. C. Rylance & Co., Ormskirk, second. Twelve bunches of Zonals.—Messrs. Rylance, Mr. W. Weir, and Messrs. Fleming & Sons follow in the order named. For twelve bunches of stove and greenhouse plants Mr. George Williams, gardener to S. Baerlein, Esq., Oak Dere, Didsbury, is a good first, *Sobralia macrantha* being very good.

Hardy herbaceous flowers.—For twelve bunches Mr. G. Eaton, gardener to W. Shirley, Esq., Allerton, and Mr. W. Bustard, gardener to J. Lewis, Esq., take the first and second prizes. For a group of hardy herbaceous flowers Messrs. James Dickson & Sons, Newton Nurseries, Chester, come in first; and Messrs. George Paul & Son, Old Nurseries, Cheshunt, take the second prize. In the Chester group are good bunches of *Campanula glomerata*, *Veronica amethystina*, *Geum coccineum flore-pleno*, *Centranthus albus*, *Phlox Mrs. Stewart*, and *Gladiolus Colvilli*. In Messrs. Paul's group *Orchis foliosa* and *Morinia longifolia* are very noticeable; there are also good Pæonies and Delphiniums.

For twenty-four varieties Pyrethrum Messrs. J. Cocker & Sons, Sunny Park Nursery, Aberdeen, and Messrs. P. B. Laird & Sons, take the first and second prizes with really good exhibits. In the first prize lot Captain Nares, Progress, Gloire d'Italia, Mdle. Patti, Monte Blanc, are very attractive. Messrs. Laird's blooms are smaller but very neat. Gloxinias are poorly shown, there being only one stand exhibited, and that receives a third prize. Pansies are exhibited largely. In the open classes for sixty blooms, not more than two of a sort, Messrs. J. Cocker & Sons, Aberdeen, are first; Mr. J. Sutherland, Victoria Nursery, Lenzie, near Glasgow, second; and Mr. W. Storr, Lenzie, third. Mr. J. Sutherland also exhibits several stands not for competition. Messrs. Laird receive a prize for Violas. For twelve plants suitable for the dinner table Mr. James Agnew, gardener to Mrs. Watts, Gravelandale Park, Aigburth, comes in first with graceful plants of *Croton interruptus aureus*, *Dracæna gracilis*, *Pandanus Veitchii*, *Geonoma gracilis*, *Croton Mosaica*, *Grevillea robusta*, *Dracæna Sydneyi*, *Cocos Weddelliana*, *Dracæna Guilloylei*—the above are the best. Mr. James Hill, Spruce House, Rochdale, second, and Mr. E. Fleetwood, gardener to E. F. Harrison, Esq., Aigburth, third.

Visitors on entering another tent devoted principally to the display of hand bouquets are naturally attracted to the bank of pyramidal pot plant's of Apples, Pears, Cherries, Plums, Peaches, and Nectarines exhibited by Messrs. T. Rivers & Son, Sawbridgeworth. All are in a very healthy fruitful state, the fruit in most instances being quite ripe. Particularly noticeable are the handsomely fruited trees of Cherries *Semis de Burr Bigarreau de Schreken*, *May Duke*, *Bigarreau Gros Cœur*; Peaches *Dr. Hogg*, *Rivers' Dagmar* and *Conkling*, and Nectarines *Rivers' Golden* and *Stanwick Elruge*.

The competition with three bouquets—one bridal and two bridesmaid's—was very close and good, a magnificent lot being staged. Mr. J. Cypher was eventually awarded first honours; Messrs. Fishlock Brothers, St. John's Market, Liverpool, second; Mr. Edward Carr, Southport, third; and extra prizes to A. Heine, Esq., and Messrs. Perkins & Sons, Coventry, all having large and handsome bouquets. For two bouquets Mr. E. Carr was a good first, Mr. Cypher second, and Messrs. Perkins third, the exhibits in each instance being most praiseworthy. The best two bouquets of Roses were staged by Messrs. Perkins & Sons, who had rather large, lightly formed examples, in which Moss Rose buds played a very important part. Second, Mr. E. Carr; third, Messrs. Fishlock Brothers, the two large latter being

much too heavy. The best single bouquet was also staged by the Messrs. Perkins, Mr. E. Carr being a good second, and C. W. Neumann, Esq., Wyncote, Liverpool (gardener, Mr. W. J. Mease) third, several others having handsome bouquets. Messrs. Perkins were first for single buttonhole bouquets, Mr. T. Prevett second, and Mr. J. Webber, Tunbridge, third, a great variety of choice flowers being tastefully arranged. Sprays of flowers for ladies' hair were shown in good style; Messrs. Perkins was first, Mr. E. Carr second, and Mr. W. Brown third.

Very lovely and life-like are the paintings of Orchids, Roses, Clematises, Pansies, Irises, Amaryllis, and other popular flowers. Miss Mitchell has a series of paintings of Dendrobes, Phalanopsis, and Vandas; and Mr. A. Foord Hughes, Wallington, Surrey, was highly commended for ten paintings of flowering Orchids, life-size, and very realistic; while Miss Annie G. Buchanan, Edge Lane, Liverpool, had paintings of Pansies and Tacsonias. Particularly good are the paintings on china by Miss Lillie Jackson, Forest Road, Birkenhead; and Mrs. Elizabeth E. Roberts, St. Helens, also exhibited several good examples of paintings on china. Mrs. K. D. Cussons fully deserves the commendation awarded her for several beautiful oil paintings, in which Tea Roses figured most prominently. Mrs. S. Ainslie, Langport, Somerset, had two oil paintings of blue-and-white Irises which were very pretty and life-like. This lady's pictures of Amaryllises on china are decidedly well done, as were also the paintings of Clematises, Passion Flowers, and Narcissi on mirrors. Miss Margaret Hodgkins, Manchester, has an extensive exhibit of various skeletonised leaves and flowers, and for room decoration these should find much favour. Mr. R. Frisby, The Gardens, Worden Hall, Preston, also had a lovely group under a glass shade of skeletonised leaves. At the end of the tent Messrs. James Dickson and Sons have a grand display of cut blooms of Pæonies which very probably will astonish many who see them, few being aware there are so many lovely and fine varieties of this class of flowers. Some of the best are Humea, Carnea, Mons. Malet, L'illustration, Augustin d'Hour, Grandiflora nivea, Charles Van Geert, Festina, Souvenir de Gaspard Calot, Jeanne d'Arc, Charles Gosselin, and Edulis superba. Messrs. Paul & Son have a charming group of cut hardy herbaceous plants, comprising all the best kinds in variety in commerce. Opposite these is a charming exhibit awarded the first prize by Messrs. F. & A. Dickson, Chester, conspicuous in which are a great variety of Irises, Delphiniums, Pæonies, and Pyrethrums, both double and single. Vases of cut flowers, with one exception, were not particularly good. Mr. Cypher was easily first for three arranged in their usual light style. Mr. T. Prevett, Swiss Nursery, Hammersmith, was second, and Mr. W. Brown was third. A. Heine, Esq., Fallowfield, Manchester (gardener, Mr. J. Cragg) was first for a single vase: Mr. R. Barber, Hamlet, second; and J. Lewis, Esq., Aigburth, third.

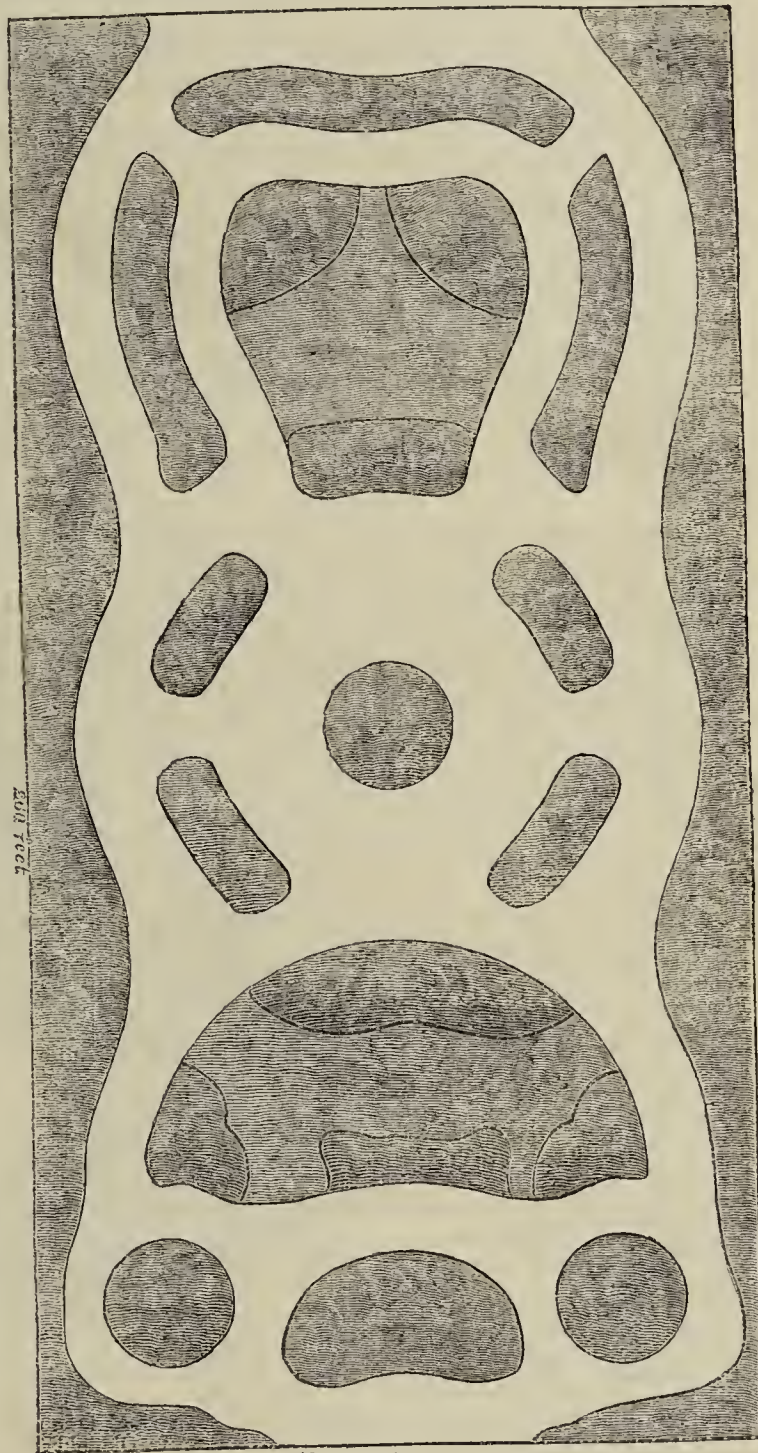
Messrs. James Carter & Co., London, have a display of various annuals in pots in this tent, Chrysanthemums, Clarkias, Nasturtiums, Cornflowers, Rodanthes, Godetias, Kauffussia being in the ascendant. Messrs. Carter's also had an extensive exhibit of natural specimens of various kinds of vegetables preserved by Carter's patent process, these including Tomatoes, Carrots, Beans, Peas, Radishes, Potatoes, Capsicums, and Marrows.

FRUIT.

The exhibits, although very numerous in most of the classes, are not, as a rule, of extraordinary merit, but some excellent table fruit is shown. The whole is arranged along the middle of a large tent, and occupies a double table in a very conspicuous position. Pines, Grapes, Peaches, Melons, and Strawberries predominate, and are very varied in size but nicely ripened. The section opens with collections of eight kinds, and three lots are staged, the first prize going to Mr. R. Parker, gardener to John Corbett, Esq., M.P., Impney Hall, Droitwich, the specimens being clean and finely matured, and consist of Black Hamburgh Grapes, jet, fine; Foster's Seedling Grape, small in bunch, but quite ripe; a fine Queen Pine Apple, excellent; British Queen Strawberries, highly coloured; Pitmaston Nectarines, small; Nohlesse Peaches, good Brown Turkey Figs, an excellent Blenheim Orange Melon. A beautiful although not massive collection. Mr. G. Richards, gardener to the Earl of Normanton, Somerley, Hants, is second with Black Hamburghs, loose in bunch; Trebbiano (?) well ripened; a fine Queen Pine with a poor crown, small; Hero of Lockinge Melon, excellent; Sir Joseph Paxton Strawberry, good; Brown Turkey Figs: Lord Napier Nectarine and Alexander Peach. Mr. Bannerman, Blithfield, Rugeley, is third with Golden Champion Grapes, excellent in berry, but not quite ripe, fine Royal George Peach, but very poor Strawberries. The next class is for six kinds of fruit, Grapes and Pines excluded, and here Mr. W. Iggolden, gardener to the Earl of Cork, Marston, Somerset, is a clear first with superb samples of Violet Hative Nectarine, Hales' Early Peach, Longleaf Perfection Melon, Brown Turkey Figs, Elton Cherry, and The President Strawberry. Mr. Miller, gardener to W. H. Long, Esq., Rood Ashton Park, Wilts, comes second with Rood Ashton Hybrid Melon, very showy; Pine Apple Nectarine, Hales' Peach, President Strawberry, Brown Turkey Fig, and Elton Cherry. Mr. Goodacre, gardener to the Earl of Harrington, Elvaston Castle, Derby, is a very close third; and Mr. Divers, gardener to J. T. Hopwood, Esq., Ketton Hall, Stamford, is awarded an extra prize, the Sea Eagle Peach here being very remarkable in size but not quite in condition. Some of the fruits weigh upwards of 13 ozs. each, and are the finest in the Show.

GRAPES begin with three bunches of Black Hamburghs, eight lots are shown. The largest of the bunches will not exceed 3 lbs., but the quality is good, and the first prize goes to Mr. Thomas Lambert, gardener to Lord Harlech, Oswestry, berries very fine. Second, Mr. I'Anson, gardener to W. Bretherton, Esq., Runshan Hall, Chorley, berries smaller and rather crowded. Third, Mr. E. Gilman, Ingestre Hall, Staffs, small, but grand in colour. In our opinion the three bunches shown by Mr. Loudon, gardener to Thomas Barnes, Esq., The Quinta, Chirk, and unnoticed, are decidedly the best in the class. They are simply excellent in finish, and of good size. For three bunches of Madresfield Court there is only one exhibit from the last named gentleman, and they are very good. Muscat of Alexandria has four entries, the first going to Mr. Middleton, gardener to R. Pilkington, Esq., Rainford Hall, St. Helens, with medium-sized bunches about half ripened. Second to Mr. McKellar, gardener to J. Watts, Esq., Abney Hall, Cheshire, not ripe; and third to Mr. Loudon with well-ripened bunches. These should have reversed positions with the first-prize lot. Foster's Seedling has a class of six lots in threes, Mr. G. T. Miles,

gardener to Lord Carrington, Wycombe Abbey, Bucks, being first with small bunches beautifully ripened. Second, Mr. I'Anson, very small in berry. Third, Mr. Bannerman, very green. Three bunches of Buckland Sweetwater, no exhibit. Grapes, white, any other variety, four lots.—First, Mr. Loudon with Golden Champion, fine bunches, very large berries, rather green, and showing some signs of spot. The second goes to Mr. Chuck, gardener to Peter Thellusson, Esq., Brodsworth Hall, Doncaster, with Duke of Buccleuch, small bunches, clean berries, fine. Third, Mr. Miles, with Trebbiano, small in berry, and not quite ripe. In the basket of Grapes, Mr. I'Anson is first with fine Black Hamburghs. Mr. W. Tugwood, gardener to John Grant Morris, Esq., Allerton Priory,



130 feet.

Fig. 1.—Plan of Show Tent.

Liverpool, is second, and Mr. Elsworthy, gardener to A. R. Gladstone, Esq., Court Hey, third, both being too much rubbed.

PINE APPLES.—These were numerous, but not of special merit. For two fruits Mr. G. T. Miles is first with well-swelled Queens. Mr. Parker second with the same variety, and Mr. Morris, gardener to A. P. Vivian, Esq., Glenafon, South Wales, third with handsome fruit, very superior to the second brace; indeed, these are the two finest Pines in the whole class, and should have been first. In single Queens Mr. Miles is also first, and in the any variety only one fruit is shown—a small Black Jamaica from Mrs. Horsfall, Aigburgh.

PEACHES.—Two dishes, very distinct, six fruits. First Mr. Divers with Early Albert and Stirling Castle, large fine colour, excellent. Second Mr. Goodacre with Royal George and Grosse Mignonne, small but well ripened. Third Mr. J. Stoney (gardener to Sir Thomas Earle, Bart., Allerton Towers) with Royal George and Bellegard, very highly coloured. In the single dishes Mr. Wallis (gardener to the Rev. W. Sneyd, Keel Hall) is first with Galande of great size, excellent. Second, Mr. Gilman with Violet Hative of great merit; indeed, the best third (Mr. Storey).

NECTARINES, two dishes.—First Mr. Jamieson, gardener to the Earl of Crawford and Balcarres, Haigh Hall, Wigan, with Pine Apple and Lord Napier. Second Mr. Bannerman with Lord Napier and Downton. Third Mr. Gilman with finely ripened fruit. In the single dish Nectarine class Mr. Jamieson is a good first with Balgowan, Mr. Gilman second with Violette Hative, and Mr. J. Douglas, gardener to F. Whitbourn, Esq., Great Gearys, Essex, third with Lord Napier of fine quality.

STRAWBERRIES are very fine. For three dishes Mr. Garraway, Bath, is first with President, Marguerite, and Sir J. Paxton, second Mr. Iggulden, with smaller fruits, finely coloured. For a single dish of Strawberries Mr. Wildsmith, gardener to Viscount Eversley, Heckfield, is first with a splendid lot of President, and Mr. Garraway second with Sir J. Paxton.

CHERRIES.—These are not numerous, but good. Mr. Hare, gardener to R. H. C. Neville, Esq., Grantham, is first for two dishes with Elton and Black Circassian; Mr. Miles coming second. In the single dishes the same competitors are the winners.

FIGS.—Mr. Wallis is first with a fine dish of Brown Turkey, Mr. Jamieson second with Lee's Prolific, and Mr. Miles third with Negro Largo.

MELONS in pairs are represented by fifteen couples, the first prize going to Mr. A. Baily, Frome, Somerset, for a fine pair of Longleaf Perfection. Second, Mr. Gilman, unnamed. In flavour the Longleaf is simply perfection. Mr. Rhodes is third. Messrs. Sutton & Sons, Reading, offered handsome prizes for the best brace of their Imperial green flesh, Scarlet Invincible, or Hero of Lockinge Melons, and in a strong competition Mr. Goodacre secured the first prize with Hero of Lockinge; Mr. N. E. Owen second with the same variety, and Mr. Iggulden third with the same. Messrs. Carter's Melon prizes were also well competed for, many remarkably handsome fruits of their Blenheim Orange. Here Mr. T. Lockie, Oakley Court, Windsor, was first, Mr. Lyon second, and Mr. Gilbert Park, gardener to Colonel Parington, Wigan, third.

Messrs. J. Cheal & Sons, Crawley, Sussex, exhibited a collection of twenty kinds of Apples in excellent condition, the freshest being Alfriston, Gloria Mundi, French Crab, and Norfolk Beefing.

VEGETABLES.

These are shown in the same tent as the fruit, and are arranged chiefly along the sides. Considering the lateness of the vegetable crops, and the early date of the Show, the specimens, as a rule, are remarkably good. The collections are excellent. The first class on the list is eight distinct kinds, and here Mr. G. T. Miles, gardener to Lord Carrington, Wycombe Abbey, is first, showing a beautiful clean lot, consisting of Veitch's Extra Early Cauliflower, Asparagus, White Elephant Onions, Stamfordian Tomato, Canadian Dwarf Bean, Sutton's New Intermediate Carrot, Pride of the Market Pea, and Chancellor Potato. This collection wins well, but is rather closely followed by one from Mr. Richards, gardener to the Earl of Normanton, Somerley, Hants, with excellent Telegraph Peas, Perfection Tomato, Canadian Wonder Beans, Woodstock Kidney Potatoes, Sutton's Gem Carrot, White Elephant Onion, Green Globe Artichoke, and Early London Cauliflower, all being meritorious. There are two third prizes awarded, one to Mr. Miller, gardener to W. H. Long, Esq., M.P., Rood Ashton Park, Wilts, and the other to Mr. George Garraway, Bath, both having bulky collections of really fine vegetables. Four out of the five collections shown here receive prizes.

Potatoes are small and not numerous. For three dishes, Mr. Miller, gardener to J. Friend, Esq., Margate, Kent, is first with Waterloo Kidney, Sutton's Ringleader, and Royal Ashleaf; Mr. Miles comes second with Snowdrop, Porter's Excelsior, and Chancellor; and Mr. Richards third with First and Best, Woodstock Kidney, and Ashleaf. For a single dish of Potatoes, Mr. Goodacre is first with a clean sample of Ashleaf, Mr. Miles second with Snowdrop, and Mr. Oldfield, gardener to R. M. Biddulph, Esq., Chirk Castle, Ruabon, third with Beauty of Hebron.

Peas are very numerous, but many of the pods are not well filled. For three dishes, Mr. H. W. Ward, gardener to the Earl of Radnor, Longford Castle, Salisbury, is first with Telephone, Telegraph, and Stratagem; second, Mr. Iggulden, with Telephone, William I., and Telegraph; third, Mr. Miles. For a single dish of Peas Mr. Miles is first with Pride of the Market, Mr. Richards second with Telegraph, and Mr. Downham third with the same popular variety.

Only three dishes of Onions are shown, but these are very good, Mr. Miles being first with Daniel's White Elephant, Mr. Richards second with the same variety, and Mr. John Garland, Exeter, is third. Cabbages are scarce, but of good quality. Cauliflowers are also few in numbers, but Tomatoes make a very excellent display. Mr. Elsworthy takes first prize with Trophy, splendid fruits; Mr. E. Bridge second with the same variety; and Mr. Long, gardener to J. M. Kenion, Esq., Rock Ferry, Birkenhead, third with Dedham Favourite. This is a fine dish, and was our choice for first place. Cucumbers are of nearly all sorts and sizes; Mr. N. E. Owen takes first prize with a deep green brace of All the Year Round, Mr. Oldfield second with Telegraph, and Mr. Lee third with the same variety.

MESSRS. SUTTON & SONS' PRIZES.—Messrs. Sutton and Sons, Reading, offer very liberal prizes for the best collection of twelve kinds of vegetables, and the competition for these is both keen and creditable. Here Mr. G. T. Miles is again to the fore with a grand group, consisting of Onions, Potatoes, Broad Beans, Asparagus, Tomatoes, Cucumbers, Cauliflowers, Kidney Beans, Peas, Turnips, Vegetable Marrows, and Carrots. These are really excellent, and would win easily at any season of the year. Mr. J. Garland is second, his best dishes being Asparagus, Carrots, and Onions. Mr. Miller is third, and Mr. Iggulden fourth, with a collection which should have been higher. Mr. Lambert, gardener to Col. Wingfield, Onslow Hall, Shrewsbury was fifth, the Leeks being wonderful; and Mr. Weekins, Blandford, came sixth. Mr. Richards of Somerley made a mistake by showing two dishes of Potatoes, but although disqualified he was awarded an extra prize which his produce well merited for its undoubted excellence.

IMPLEMENTS, &c.

This section is of such a magnitude as to form an important and interesting feature of the Show, for here are gathered together implements, buildings of every description, and almost every modern appliance that science and ingenuity could devise for the improvement of horticulture. An examination of the various exhibits, especially horticultural buildings and

the various heating apparatuses, afford abundant testimony of the rapid strides that have been made in the improvement of these appliances during even the present decade. In the various classes devoted to both of the latter subjects there is a keen competition, the entries being numerous, as indeed they are in most other classes. There is an exceptionally good show of lawn mowers of various types, many of which exhibit marked improvements. In the classes devoted to wirework and kindred subjects there is a good display of very tasteful and highly ornamental work. The terra cotta and other examples of the potter's art are models of good taste, and as regards practical utility everything that could be desired.

The entries in the boiler competition are numerous, these being represented in size from the pigmy to the colossal types, all of which are no doubt adapted to their particular purpose. As these are, however, dwelt upon more fully in another place, we need not do more than give a word in passing concerning them. The same may be said, too, of horticultural buildings. Garden rollers and tools of various descriptions form a good display, most of which exhibit slight improvements on their predecessors. A new patent garden barrow and potting bench combined is particularly noteworthy of passing commendation as a useful appliance for amateurs, as also is the model of the transplanting machine. Among the miscellaneous exhibits there is a good display of useful appliances, reference to which will be found under their respective headings. Taken altogether, this department contains a great variety of interesting subjects, well worthy of the close inspection of horticulturists generally.

HEATING SMALL HOUSES.—Class 1 in the implement department was described in the schedule as "modes of heating a small conservatory from 10 to 20 feet long." In making the awards the Judges were very properly instructed to take into account the cost of the different boilers submitted for approval. Several kinds were placed in competition, and after much consideration the premier award of a silver medal was adjudged to a small unpretending modification of the Loughborough type of boiler exhibited by Messrs. Halliday & Co., Middleton Works, Manchester, for a well-made and neatly finished apparatus, which, with 18 feet of 4-inch piping attached, and an expansion-box and feed-cistern was priced at £4 10s. This is known as the "Derbyshire" boiler, and is constructed to burn cinders or small coke for ten to twelve hours without attention.

Messrs. Messenger & Co., Loughborough, were awarded the bronze medal, not because their boiler was inferior to the other, but because it was much larger, and consequently more costly than was needed for structures of the stipulated dimensions, and had a smaller size been attached to the piping it is not improbable the awards would have been at least equal, as both boilers would no doubt act equally well, and there would have been no appreciable difference in cost.

The Society's certificate was granted to Mr. Watson, St. Alban's, for his "Defiance" combination stove, heated by gas, a very small apparatus heating sufficient piping for the specified structures, deleterious fumes being conducted directly to the open air. Also to Mr. Deards, Harlow, for his Princess Louise fire-place apparatus, which is in the form of an ordinary fire grate, the bars being formed of metal tubes, through which the water circulates, and which may be conducted through an adjoining structure. An important addition has been made to shut off the heat when not wanted in the room at night, by which slow combustion is maintained for several hours after the fire is made up at night. Messrs. David Lowe & Sons, Chester Road, Manchester, and B. Harlow, Macclesfield, also show methods of heating worthy of examination by persons who are contemplating keeping frost out of their greenhouses, for there is no one kind that can be regarded as the best for every structure regardless of its size, form, and position. Mr. Mee's gas or oil heated arrangement of pipes, designed for warming halls or miniature greenhouses, is also on view.

GLASS STRUCTURES.—The display in the classes devoted to horticultural structures is very extensive, and the competition for the various awards was keen. Seldom, indeed, has a finer display of houses and frames been brought together at any exhibition held in this or any other country. In the class for "a plant house, vinery, orchard house, or section thereof," there are some eight or nine exhibitors, and Messrs. Foster & Pearson, Beeston, Notts, secured the premier award for a light handsome structure that was well ventilated on the most modern and improved systems, one of the features of this structure being small squares of glass at the base near the eave of the house of rough glass much stronger than that with which the house is glazed, and which would reduce to a minimum the breakage during severe frost. This house well deserved the Society's silver medal which was awarded it. Messrs. Messenger & Co., Loughborough, secured a bronze medal, the remaining award for a vinery and plant house combined. These are well and easily ventilated, light, and possess that finish desirable in such structures. Mr. Webster, builder, Wavertree, was awarded the Society's certificate for a particularly light useful plant or forcing house. The chief feature of this structure was the absence of an eave plate, the main rafters being continued to the wall plate. These are securely jointed where the eave plate or gutter is usually fixed, the front lights, therefore, sloping gradually inwards about 2 inches from an upright position as generally arranged.

For the finest ornamental conservatory Messrs. W. Richardson & Co. Darlington, were deservedly awarded a silver medal for a very beautiful structure, remarkably light, well built, strong and most pleasing in appearance. It is 45 feet in length by 25 feet wide, and probably 25 feet or more high, with a lantern roof and abundant ventilation round the sides, which a boy could work with ease. The glazing of the small panels just above the front lights with small squares of coloured glass and lead on the Elizabethan principle add materially to the beauty of the structure.

Messrs. Halliday & Co., Middleton, Manchester, have been also awarded a silver medal for an elaborate structure, 34 feet long by 24 wide, and 25 feet high, with ornamental tiling inside and out just below the eave of the house, which gave to this structure a very striking and picturesque appearance. It is of an ornamental character and well deserved the award accorded it. For moveable plant pits and frames Messrs. Foster and Pearson were again to the front, and secured for their useful structures a silver medal. The frames exhibited by this firm are all span-roofed, and can either be set upon brickwork or utilised without. They are ventilated by a patent process on the top as well as the sides, which is so arranged that the wind can have no effect upon the lights if lifted or left open during

stormy weather. When shut provision is also made for securing them by means of a pin, which can be placed in a moment and all made secure. Mr. John Webster was also recommended a silver medal for some very useful and similar frames to those described above. Messrs. W. Richardson & Co. have been awarded a bronze medal in this class for useful span-roofed frames. Messrs. D. Lowe & Sons, Edinburgh and Manchester, were recommended the Society's bronze medal for a collection of small plant, fruit houses, and a conservatory, all being of a useful size for amateurs and small gardeners, these structures being light and strongly built. Mr. J. Crispin, 58, Milk Street, Bristol, received the same award for a portable heated propagating

MISCELLANEOUS EXHIBITS.

In the classes devoted to miscellaneous subjects there are a great number of entries. Particularly noteworthy on stand 34, class 21, is the handy appliance exhibited as a patent bedding and potting barrow by Dr. Horace Swete, Baskerville, Worcester. The novelty in this consists in the addition of a tray fitted with iron stays and divisions for crocks and soil to an ordinary barrow. Another useful apparatus is shown on stand 51 in the model of the transplanting apparatus by C. R. Kelly, landscape gardener, Tarporley, Cheshire. This consists of four sides of wood resembling a tub,



Fig. 2.—MR. A. F. BARRON. (See page 1.)

case, which would prove of great service to amateurs for the propagation of cuttings with but little trouble and expense, and a bronze medal for Hunt's patent automatic ventilator. Messrs. Stewart & Jack have been awarded a bronze medal for a small strongly built house, 15 feet by 9 feet wide, suitable for amateurs and small growers. Messrs. Peel and Sons, Wood Green, London, have also received a bronze medal for cheap, plain, strongly built amateurs' structures. For the most meritorious aggregate displays in these classes Messrs. Foster & Pearson have been deservedly awarded the Society's gold medal for a large and highly praiseworthy display of horticultural structures of varied sizes and designs.

Just on going to press we learn that Messrs. Foster & Pearson and Messenger & Co. have been granted medals for valves, and Mr. Deard a silver medal for dry glazing; the work of determining the merits of the various articles in the implement classes is still in progress and cannot be recorded this week.

the sides of which are held together by chains, and resting on a frame of wood with rollers underneath. Close by on stand 31 is the useful implement figured in these pages a short time ago—the turf-lifting machine invented and exhibited by F. T. Drummond, Coton, Bridgenorth, Salop. Useful and convenient forms of tents, garden seats, tarpaulin, and shading are shown in variety on stand 26 by Mr. J. Unite, 291, Edgeware Road, London. On stand 23 Messrs. J. Weekes & Co. show a number of exhibits of their various modes of heating and caloric apparatus. One of the novelties shown by this firm is a combined drawing-room grate and boiler. This appears to be an excellent apparatus for amateurs who require not only a means of heating their dwelling rooms, but also their small house from one apparatus. Messrs. Bennett Bros. of Liverpool exhibit on stand 22 a number of articles, including examples of wirework, garden seats, boilers, stoves, and tents. Stand 20 is occupied with an interesting collection of wirework, flower stakes &c., exhibited by Messrs. Brookes & Co., 4, Cateaton Street, Manchester.

Mr. F. S. Trueman of Stockport exhibits on stand 29 an interesting collection of minerals, including, tufa, quartz, lead pyrites, fossilised stone, iron pyrites, alabaster, and other articles of this description. Rustic work, including tables, chairs, and summer houses, are exhibited on stand 75 by Messrs. Martin & Co. of Hope Street, Liverpool. Mr. Joseph Bromham, hot-water engineer of Dale Street, Liverpool, has a number of exhibits on stand 15, including a very elegant and ornamental wire Rose temple, the Allerton Priory Boiler, rollers, and mowing machines.

Examples of staging and specimens of boilers are exhibited by Mr. J. Gray, Danvers Street, Chelsea, on stand 13. The Horticultural and Agricultural Chemical Company, Tonbridge, exhibit on stand 64 a patent syringing stand of very simple construction, for holding plants in position during the process of syringing, also samples of a new insecticide. Samples of various artificial manures are exhibited on stand 65 by Messrs. W. B. King & Co. of Ipswich. The same firm also exhibit samples of their special composts suitable for amateur cultivators, and also samples of their enamel fluid for coating hot-water pipes. Samples of peat and other horticultural sundries are shown by Messrs. Wood & Son of Wood Green, London, in an adjoining stand, and examples of lawn mowers by the Chadborn & Coldwell Manufacturing Company, Upper Thames Street, London.

On stands 59, 71, 57, and 83 respectively, are exhibits of slate staging and tubs by Messrs. Alfred Carter & Co., of Norton Street, Liverpool; specimens of labels by Mr. John Pinches, Oxenden Street, London, W.; examples of patent concave pots &c., by John Woods, St. H-lens; and horticultural sundries, including soils, manures, &c., by Mr. H. J. Smythe, London. In another stand Messrs. Blake & Mackenzie, horticultural printers, Liverpool, exhibit samples of garden stationery.

A very imposing stand of exhibits of vegetable and floral products are shown by Messrs. Sutton & Sons, of Reading. In this collection are shown some fine samples of Potatoes, Lettuce, Cucumbers, Melons, &c., also samples of seeds, vegetable and flower, and an interesting collection of vegetables and fruit in wax. Specimens of the Pennsylvania lawn mowers are exhibited on stand 40 by Messrs. Lloyd, Lawrance, & Co., of London, and in adjoining stands will be seen exhibits of the specialities in lawn mowers of Messrs. Green & Son of Leeds, and Samuelson & Co. of Banbury. Mr. J. G. Wagstaff, Alma Ironworks, Dunkinfield, exhibit their patent hot-water saddle boiler; Messrs. Jensen & Co. samples of their Norwegian fish manure; Messrs. Peter Connor, McIntyre & Co., gas-heating water apparatus; Mr. J. Goddard, Radipole Road, Fulham, samples of their patent adjustable clips; Mr. John Watson, St. Albans, examples of his Defiance gas stove; The Jersey Gravel Company's samples of gravel; Mr. W. H. Essery, Swansea Horticultural anthracite coal; Messrs. J. Trickett & Sons, Bennett Street, Liverpool, gum solution for fixing botanical specimens to a glass; Mr. J. P. Bethell, Stanley Street, Liverpool, samples of his unique folding postal boxes; Mr. H. Caesar, Knutsford, Cheshire, elegant examples of summer and other rustic houses, including bridges, arches, and vases; Mr. P. B. Harkin, Dutton Street, Liverpool, specimens of Orchid baskets, teak, wood, &c.; Mr. F. H. Rylands Newtown, Montgomery, specimens of his garden seed drill; Mr. G. Bloxham, gardener to Sir Philip Duncombe, Bart., Briekhill Manor, Bletchley, a fumigator for hothouses; Messrs. J. Crispin & Sons, Milk Street, Bristol, a newly invented boiler, "The Clifton;" and Messrs. F. Silvester and Co. of Newcastle samples of steel used in the construction of boilers brings the list of exhibits in this class to a close.

Messrs. Samuelson & Co. of Banbury exhibit in class 9 an improved lawn mower, and also the Chadborn & Coldwell Company specimens of their patent excelsior horse mowing machine, likewise Messrs. Thomas Green & Son of Leeds. In the class for hand mowers, Messrs. Samuelson exhibit largely, as also do Mr. J. Unite, Edgware Road, London; Chadborn and Coldwell Manufacturing Co. of London; W. Glassey & Co. of Liverpool; I. Green & Son of Leeds; Barford & Perkins of Peterborough; J. Bramham, Liverpool; Lloyd, Lawrence & Co. of London. There are four entries in garden cutlery class. The "Standard" Manufacturing Co. of Derby contribute a number of hooks, saws, pruning shears, &c. The other exhibitors are the Naxos Wheel & Machine Company of Weston-super-Mare; W. Glassey & Co. of Liverpool; and Trickett & Sons of Sheffield. Mr. J. Matthews of Weston-super-Mare, contributes a unique selection of garden pottery in class 12, as also do Messrs. F. S. Trueman, Stockport; E. Sydney, Liverpool; Reesley & Co. Handsworth; and J. Crute, London. In the class for garden tools, Messrs. Barford & Perkins of Peterborough; J. C. Rowland, Liverpool; E. Bates, The Gardens, Arle, Alresford, Hants; D. Swete; The Naxos Wheel Co.; Trickett & Sons, are the principal exhibitors. There are ten entries in the class for garden seats and chairs, the exhibitors being Mr. J. Unite of London; Messrs. Wrinch & Sons of Ipswich, who exhibit in their collection improved forms of garden seats and methods of adjusting the awning; T. Green & Son, Leeds; W. H. Peake & Sons, Liverpool; D. Lowe & Sons, Manchester; J. & H. Keyworth & Co. Liverpool; Brooks and Co., Manchester; W. Glassey & Co., Liverpool; H. Caesar, Knutsford, Cheshire; and the executors of the late H. Inman, Salford, Manchester. There is only one exhibitor in the class devoted to meteorological instruments, and this is Messrs. J. Davis & Co., Kennington Park Road, London. In the garden engine class the exhibitors are the Naxos Wheel and Machine Co.; Messrs. W. Glassey & Co., Liverpool; Messrs. Barford & Perkins, Peterborough; Colman & Morton, Chelmsford; and Wrinch & Sons, Ipswich. The class for decorations for conservatories, &c., are represented by such well-known exhibitors as Mr. J. Matthews of Weston-super-Mare; J. Crute, London; Halliday & Co., Middleton; and Glassey & Co., Liverpool.

The following list of Judges and Stewards is extracted from the Catalogue of Exhibits:—

JUDGES.—Classes 1 to 15 (Plants).—Mr. J. Douglas, Ilford; Mr. J. Mease, Wyncote; Monsieur E. Pynart, Ghent.

Classes 16 to 33, and 61 (Plants).—Mr. B. Findlay, Manchester; Mr. J. O'Brien, Harrow; Monsieur Van Volxem, Brussels.

Classes 34 to 50 (Plants).—Mr. M. Dunn, Dalkeith; Mr. G. Goldsmith, Northampton.

Classes 51 to 60 (Groups).—Mr. O. Thomas, Chatsworth; Mr. H. Lindsay, Huntroyde; Monsieur Van Geert, Antwerp.

Classes 62 to 81 (Cut Flowers).—Mr. R. Dean, Ealing; Rev. C. H. Bulmer, Hereford.

Classes 82 to 93 (Table decoration).—Mr. J. Pettigrew, Cardiff.

Classes 94 to 116, 129, 132, 134 (Fruit).—Mr. Barham, Croxteth; Mr. F. Harrison, Knowsley; Monsieur H. Vilmorin, Paris.

Classes 117 to 128, and 135 (Vegetables).—Mr. Bennett, Rangemore; Mr. Jamieson, Haigh Hall, Wigan; Hon. Berkeley Stanhope.

Horticultural Literature, Science and Art.—Mr. E. Badger, Birmingham; Mr. F. W. Burbidge, Dublin; Mr. J. Shaw, Manchester.

Classes 1 to 8, and "Boiler Contest" (Implements).—Mr. W. Miller, Combe Abbey; Mr. E. Bardney, Liverpool; Mr. Marriott, Glasgow; Mr. Jas. Boyd, Jun., Paisley.

Classes 9 to 21 (Implements).—Sir C. W. Strickland, Bt., Malton; Mr. Shirley Hibberd, Kew; Mr. Woolford, Leatherhead; Monsieur C. Joly, Paris.

STEWARDS.—Cut Flowers.—Mr. Ker, Liverpool. Plants.—Mr. W. G. Head, Crystal Palace. Fruit, &c.—Mr. E. Bridg, Huyton. Implements.—Mr. W. Barron, Swansea. Boilers and Hothouses.—Mr. J. Wright, Fleet Street, London.

GENERAL SUPERINTENDENT.—Mr. A. F. Barron, Chiswick, London.

Mr. Richardson, the able Superintendent of the Botanic Gardens, has acted in concert with Mr. Barron throughout in making the necessary preparations for this truly great and most diversified Exhibition, which does not close till next Monday night.

We learn by telegram that a gold medal has been granted to Messrs. Sutton & Sons, Reading; silver medals to Messrs. Chadborn & Coldwell, Barford & Perkins, Davies, Matthews, and Bramham.



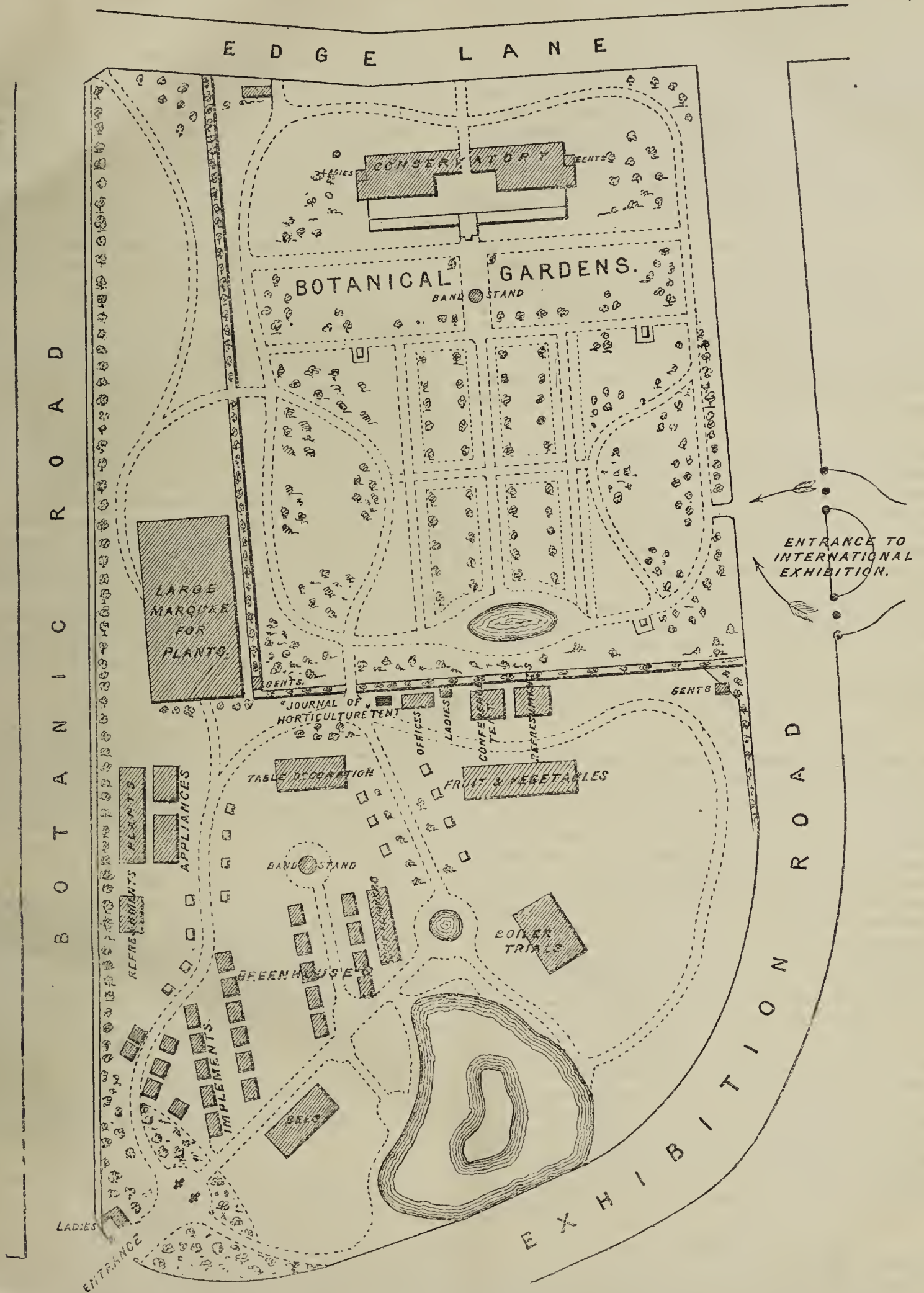
THE forty-third anniversary festival of the GARDENERS' ROYAL BENEVOLENT INSTITUTION will be held at "The Albion," Aldersgate Street, on Friday, 2nd July, 1886, on which occasion N. N. Sherwood, Esq. (Messrs. Hurst & Son) will preside. Dinner at six o'clock precisely.

— A VISITOR writes: "It seems to be the custom with some exhibitors at the FLORAL COMMITTEE MEETINGS of the ROYAL HORTICULTURAL SOCIETY to remove their exhibits immediately after the Committee has inspected them, and at the last meeting an Odontoglossum was certificated which I was informed had been taken away by the exhibitor after the award was made. If there is no rule to prevent this practice it would be advisable to frame one, as it is exceedingly disappointing to visitors like myself who attend these interesting meetings to find that some beautiful novelties cannot be seen."

— WE learn that an EXCURSION OF BELGIAN HORTICULTURISTS TO ENGLAND has been arranged for the present month with the object of visiting the principal sights of London, the nurseries, and private gardens. It is intended that the party start from Antwerp on July 15th; from July 16th to the 20th will be devoted to London and its suburbs, including visits to the nurseries, Chiswick, Kew, Hampton Court, Windsor, Cliveden and Dropmore. From the 20th to the 24th will be devoted to a journey to Rangemore, Elvaston, Chatsworth, Liverpool, and Chester, returning to London on July 24th, and to Antwerp on July 25th. The programme is a very full one, but some alterations may be needed, as the time is somewhat brief for such a number of visits. British horticulturists will undoubtedly endeavour to render the tour as agreeable as possible to our visitors, for many have pleasant memories of Belgian hospitality.

— "J. A. W., Alderminster," writes:—"I can quite sympathise with "D. T. F.," to whom "D., Deal," refers on page 502. ORANGE FUNGUS began to attack my Roses a month ago, and I am very fearful as to results. A strong solution of Harris' sulphide of potassium appears to have checked it in some instances, and I am about to try now sulphate of copper; but it is tedious work. I have always considered red rust to be quite distinct from orange fungus, but "D., Deal," thinks differently. Here Roses are decidedly late. On this day, June 24th, I have gathered but three or four hybrids, Monsieur Noman and, of course, A. K. Williams, also that most useful garden Rose, Catherine Soupert. My Teas are on the walls quite as early as usual, but in the open very late. Mildew has appeared in force."

— THE PLUM AND PEACH CASE AT THE DELL, EGHAM, which was mentioned last week, is an extremely convenient structure, and if more of such houses were employed in gardens there would be less uncertainty about the general crops of these fruits. The case or house is a lean-to



PLAN OF THE ROYAL HORTICULTURAL SOCIETY'S PROVINCIAL SHOW GROUND, LIVERPOOL.

against a wall with an easterly aspect, and is 300 feet long by 6 feet wide, in two divisions, and heated by two rows of 3-inch pipes extending the whole length. One division is devoted to Plums trained fan-shape to a trellis near the glass, and all appeared very healthy. The varieties most prized are Transparent Gage, Coe's Golden Drop, Bryanston Greengage, and Guthrie's Late Greengage, but other varieties found very useful are Reine Claude de Bavay, Cox's Emperor, Prince Englebert, Denniston's Superb, Jefferson's and July Greengage. The trees are planted in an inside border and liberally treated, the result being abundant crops of good fruit. The Peach house contains some fine trees that have for several years produced some handsome fruits. The varieties Royal George, Walhurton Admirable, Dante, Sea Eagle, and Dymond are represented by good trees; and of Nectarines, Elruge, Lord Napier, Humboldt, and Prince of Wales are the favourites.

— It is seldom that two such beautiful specimens of *MITRARIA COCCINEA* are seen as those in the garden named above. They are about 3 feet in diameter, trained in globular form, and when bearing their bright scarlet flowers have a most pleasing appearance. This old plant is somewhat neglected in many gardens, yet for greenhouses, conservatories, or similar cool structures it is very useful, and it is not difficult to grow satisfactorily. Nerines are another important feature at The Dell, but the plants are now having a season of rest in frames fully exposed to the sun, where they receive no water during the summer months.

— A CORRESPONDENT sends the following on GROUPING ORNAMENTAL-LEAVED SHRUBS:—"This is a somewhat modern practice for beautifying our lawns, but as the various combinations of tints become more fully tested the system increases in popularity. Many of the trees with purple and variegated leaves, if closely pruned, may be used for creating rich effects. Such species as the golden and purple-leaved Oaks, purple Beech, purple Birch, &c., may be forced to do duty as large-sized shrubs for several years, and when no longer needed for the above purpose may be permitted to attain their full size, and the adjoining shrubs be removed to other locations. Each year adds its quota to the list of hardy shrubs with ornamental foliage, although unfortunately a small proportion of them only will stand hot dry summers. Such old kinds as the variegated Weigela, purple Hazel, golden Spiræa, purple Berberry, variegated Dogwood, and a few others, are in early summer when new growth is forming at their best, and no hed of flowers can exceed their attractiveness."

— PROFESSOR BURRILL, of the University of Illinois, has made some experiments in HYBRIDISING THE STRAWBERRY, and is decidedly of opinion that the fruit, popularly so called, of the Strawberry is not affected by the kind of pollen used in fertilisation of the ovules. His reasons for this opinion are stated, in his last report, as follows:—"In the spring of 1884 we planted a single isolated row of Crescent seedling Strawberries to test the matter of the alleged effect upon the herry pulp of fertilisation by pollen from different varieties. This one row of Crescents was put at the greatest convenient distance from any Strawberry beds, the nearest being about 20 rods to the north. On the sides of the prevailing winds, south and west, there were no cultivated Strawberries for several miles. Alongside the rows of Crescents, which have almost no pollen, we placed ten plants of eight of the most characteristically different sorts we could select, the ten of each kind being placed near together, and an interval of 2 rods left vacant in the row between them. By the mistake of a workman two of these groups were dug up at one end of the row, so that there was a space of between 5 and 6 rods where the Crescent stood alone. The results obtained were wholly against the idea of the effect of the pollen upon the fruit substance, and altogether confirmed expectations from scientific deductions. A box of Crescent berries picked from the vicinity of Sharpless plants was placed beside others obtained from near a wild variety bearing very small dark-coloured fruit with deeply sunken seeds, as different as one can well imagine from the Sharpless berry, and the two boxes were submitted to the inspection of several persons. No one was able to make out any difference between the two. The same was true in the other cases."

PACKING STRAWBERRIES.

THERE is no kind of fruit more commonly sent by rail than Strawberries. Their cultivation is more general than Grapes, Peaches, and other fruits under glass, and I know many amateurs with small

gardens and no glass who take a great delight in sending Strawberries to their friends, so that the packing of this fruit is very important. As a rule, I think packing is overdone, being often almost double the weight of fruit, and certainly double the bulk is used of packing material, whereas one quarter the weight of packing is ample. A great bulk of material does not insure the safety of the fruit. Card-board boxes, or boxes which will give way under any slight pressure, must never be used. It is better to send 1 lb. of fruit in good condition than 6 lbs. in a slim box with the object of saving on the carriage. Tin boxes are very durable and good, and light wooden ones are also excellent. These may be made in various ways. Where large quantities of fruit are packed weekly the best way is to have several shallow trays made to fit into a box on the top of each other. If each tray is from 18 to 20 inches long, 1 foot in width, and about 2 inches deep they will hold a quantity of Strawberries. As one is filled it is put into the box and the next one acts as a lid to it. Three trays of the size indicated will hold a large number. Where only small quantities are sent a shallow box about the same dimensions as the trays will be found very convenient. Those who do not care to go to the expense of having them made new may buy them very cheap at any confectioners.

The best material for packing are Strawberry leaves; they should be gathered a day or two before they are wanted and placed in the shade, when they will become soft. A layer of these two deep should be placed at the bottom of the tray or box, then have the fruit on your right hand side and the leaves on your left, place a leaf in the palm of the left hand, and with the right put a fruit on the top of this, then bring the leaf over it on each side, and in this position place it in the box, beginning at one corner and following with others in the same style until the layer is completed. Each fruit should be pressed very gently against the former one, as they must be packed so as not to shake, and if carefully done they will turn out at the end of a long journey almost as good as when gathered. The packing is completed by placing more leaves over the surface until the level of the lid is reached, as this should just press down to prevent disturbance but nothing more. When several trays are placed in a box each one should have a small piece of cord round it that it may be lifted out without any attempt at twisting. Properly made boxes may have rings placed on them as handles.

The lids must never be firmly nailed down, as it injures the boxes in extracting the nails, and they cannot be taken out without much shaking. It is a good plan to have the lid on hinges with a screw in front, or the lid may be firmly tied down without nailing. Our boxes have neither nails nor hinges, but two holes on each side and the same on the lids, and they are fastened by passing pieces of cord through these and tying them. As the cords on one side are cut the two on the other side act as hinges, and the lid is easily separated from the box. Only good fruit should be packed, and it should all be gathered before it is dead ripe. The stems must always be left on, and never attempt to pack with either the fruit or leaves wet. In gathering fruits for packing they should not be placed on the top of the others in the basket or whatever they may be gathered in, as any blemish previous to packing will become worse in the journey.

—J. MUIR, *Margam*.

GERMAN IRISES.

ARE the numerous splendid varieties of German Iris sufficiently known? Possibly not, or they would be grown in every garden in the land where hardy border flowers are cherished. The old blue Flag Iris is effective in masses, but the newer forms must not be compared with that, except as regards habit and foliage. The colours surpass description. The "fall" petals of several of the forms equal in richness the lips of Cattleyas, while some far surpass them—streaks of silver on blue and purple, and burnished golden lines on crimson velvet grounds, with standards in varied colours in deep contrast with the pendent parts.

It is fair to say that no other hardy flowers include such a combination of resplendent colours as do the Irises. They have been described as the Orchids of the parterre, and the simile is not very far fetched, for both are included in the same section of the vegetable kingdom; and though differing in several essential characters, are yet in botanical phraseology "not far apart."

Then how easy these plants are to grow. They are not "miffy," not dainty as to soil, not particular as to aspect. Give them plain good fare, such as Cauliflowers and Cabbage feed upon, and they will not be slow to manifest their appreciation in the production of broad glaucous leaves, and in due time strong spikes bearing noble and brilliant blooms. Mr. Ware has a fine assortment of varieties at Tottenham, as has Mr. Barr at Tooting, and Messrs. Veitch & Sons at Langley, and private collections are being formed in many gardens. The best of these that I have seen is in Dr. Hogg's interesting garden in Sussex, where

about a hundred different varieties are grown. These are a selection from much larger collections in which a great similarity of colouring and form are to be met with, and Dr. Hogg might advantageously reduce the number in cases where the distinctions are so trivial as to be recognised only by the most critical.

What are called German Irises have had their origin from various species, the chief being *I. pallida*, *I. squalens*, *I. variegata*, *I. neglecta*, *I. Swerti* or *aphylla*, *I. amœna*, *I. germanica*, and *I. sambucina*. Those that are derived from *pallida* have the standards pale lavender, tending to mauve, and of this section *pallida dalmatica*, *Celeste*, and *Madame Pacquette* are very beautiful. In the *I. neglecta* section the standards are a decided blue or violet, without any yellow, and of these *Cordelia*, *Virginie*, and *Sultane* are fine examples. In *squalens* section the standards are of a dingy brown, and among the best of these are *Arnoldi*, *Dr. Bernice*, *Herica* de Thury, and *Marchioness of Lorne*. In the *variegata* section the standards are yellow, varying from primrose to deep golden yellow. Of these there is a great variety of very beautiful colours, as in *Darius*, *Conqueror*, *Magnet*, *Ganymede*, and a lovely variety called *variegata alba* or *L'Innocence*. In *aphylla* and *amœna* sections the standards are white, but in the former both standards and falls are pencilled on the edges with shades of violet, as in *Bridesmaid*, *Gazelle*, and *Madame Chereau*; while in the latter the falls are stained or reticulated, as in *Juliette*, *Duc de Cazas*, and *Unique*.

I learned a "wrinkle," too, on planting, or rather the best time for the work. Immediately after flowering is the time for dividing and planting German Irises. The divisions make good growth, become firmly established during the season, and flower well next year. By this plan "a season is gained," remarked the Doctor, "and that it is the best method there is no doubt." All that is necessary to insure success is to keep the roots and rhizomes moist in transit, and to water them well when placed in the ground.

Dr. Hogg, I may add, is not a gardener on paper merely; he is very much more than that, as the work he has accomplished on his beautiful Sussex estate during the past few years affords abundant testimony. He is also engaged in improving his pastures, which are extensive, and can show some striking results from the application of chemical manures. It is pitiable to see grass land so profitless in various districts that might be vastly improved by a little well-considered outlay in the direction indicated.—EXPERIENTIA DOCET.

SELF-SOWN ASPARAGUS.

THERE are few vegetables in which more interest is taken than Asparagus. Raising young plants, as well as the culture required to bring the old ones to perfection, annually meet with a large share of attention from all garden owners, especially those who have a desire to secure choice vegetables. As a rule, young Asparagus plants are raised by buying seed and sowing it in beds or rows, allowing the plants to remain there for a time, and then transferring them to the permanent plantation. This plan is, no doubt, a good one where Asparagus is being introduced for the first time, but where there are plantations of full-grown seed-bearing plants, there is another way of securing young plants which will pay for attention. In good seasons, or indeed in almost all seasons, the old Asparagus plants flower and ripen seed. Late in the autumn, or at the time the old stems are cleared away, many of the berries open and the seeds fall on the ground. This is perfectly hardy, and when the spring comes many young plants grow from the self-sown seed. These, however, are generally either drawn up as "weeds," or hoed down to clear the ground, and while hundreds of young plants are being destroyed in this way, attempts are often being made to induce seed to germinate and plants to grow elsewhere. Now self-sown plants are just as good as any that can be raised, indeed they are often the best, and it would be better if they were preserved and used more than they are. Many of them need never be transplanted, but allowed to grow where the seed fell, to replace the roots which die; and where roots are lifted for forcing, self-sown seedlings will always keep up the supply of roots with very little trouble. Self-sown plants, too, have one great advantage over those bought in or transplanted, as they need never be moved, and, being left alone, the roots develop faster and much finer than when cut up and checked by transplanting.—KITCHEN GARDENER.

THE INDIAN AND COLONIAL EXHIBITION.

VEGETABLE PRODUCTS OF INDIA.

(Continued from page 384 last vol.)

THE fibre products constitute a highly important portion of the Indian home and foreign trade, and consequently numerous samples both of the raw materials and some of the uses to which they are applied are included in the Exhibition. The Indian flora is particularly rich in fibre-yielding plants. Over 300 species have been tried for this purpose, and a good proportion of these have been found to afford strong useful fibre when properly treated. The "coir" or fibre obtained from the Coconut

husk is well known, and the uses to which this is applied are innumerable. For mats and ropes it is, however, largely employed, and the manufacture has largely extended in recent years, the refuse from such work being now very extensively used in gardens for a variety of purposes, especially as a plunging material for plants. Commercially, however, perhaps the production of Cotton is the most valuable branch of the Indian fibre trade. There are fourteen million acres under cultivation with this plant, exclusive of large extents in Bengal and Assam, "of which no returns are published, and the exports for the year 1884-5 amounted to over 5 millions of hundredweights, valued at 13 million pounds sterling." Nearly half of this came to England and a good proportion was re-exported to the Continent. Jute (*Corchorus capsularis* and *C. olitorius*) is largely grown in Bengal; Calcutta is the great centre of the trade, and the value of the exports has increased from £62 in 1828 to £6,241,000 in 1885-6. Much of the raw jute is exported to Dundee, where its manufacture has assumed considerable importance in recent years, being employed for bags, carpets, and various other fabrics. Rhea fibre has received some attention, but the difficulties in the preparation of the fibre has checked the development of the trade.

Among the extracts and inspissated saps first comes the catechu or cutch of commerce. This resinous extract, which is prepared by boiling down a decoction from chips of the wood of the *Acacia catechu*, figures variously as a condiment, or spice, or as a medicine. It is used as an astringent in medicine, and also in dyeing and tanning. The value of the catechu exported from India has materially decreased in the last five years from £426,641 in 1880-1881 to £282,078. The bulk of these exports consisted of Burma or Pego cutch. The cutch or kath of the North-West Provinces is principally prepared in Kumaon. Instead of being boiled down to a solid consistence, and then cast into large masses, as is the case in Burma and Bombay, twigs are placed in the concentrated decoction, and the kath is allowed to crystallise. The substance thus obtained is formed into cubes of about one-half inch in size. This is a much purer article, and, though not exported, is largely consumed in India as an accompaniment of *pan*. The ordinary cutch of commerce is a deep reddish-brown with a glassy fracture. In India a solution of catechu by the addition of lime or alum, is used as a dull red dye, largely employed by the calico-printers to produce metallic shades. Many trees and shrubs yield camphor, caoutchouc, and gutta-percha, foremost among which is the true Indian rubber tree, *Ficus elastica*, which grows freely in the North-Eastern Himalayas, eastward of Assam and Aracan. Although the Government has established a large plantation in Assam, the only source of supply hitherto is the trade with the hill tribes, who prepare the substance and carry it into the valley of Assam for sale. Much attention has been paid to the rubber-yielding plants by the authorities at Kew, and considerable information on the subject will be found in the reports issued from the Royal Gardens.

An important Indian extract is the medicinal assafoetida. *Ferula Narthex*, *F. Scorodisma*, and others supply the assafoetida, which is most used by the natives of India, and in which Bombay does a large trade. The thick fleshy roots of the assafoetida-yielding plants are cut or scraped, when a milky juice exudes. This hardening forms the gum resin, which is known as evil-smelling but useful medicine, and in Eastern countries has been from time immemorial employed as a flavouring spice.

Indigo, which is obtained from species of *Indigofera*, not only received its name from Europeans, but as Mr. O'Connor says:—"The manufacture of indigo is, of all forms of enterprise now known in India, that which was first taken up by Europeans, who still retain the monopoly of the manufacture of this article, at any rate so far as concerns the better kinds exported to foreign markets. European marks of indigo are guarantees of quality, and the exports from India have hitherto consisted almost exclusively of such marks, though lately there has been some extension of cultivation in the North-West Provinces under native supervision, the produce of the plantation being supplied to Europe. Practically, however, as yet the whole quantity produced from year to year in European factories is shipped from India, the inferior qualities of native manufacture being retained for consumption in the country." There are 197 factories working in Bengal, 1963 in the North-West Provinces and Oudh, and 1254 in the Madras Presidency, of which the larger number are under European management. The dye is obtained from the plants by steeping them in tanks of water, and after the plants are removed a blue sediment settles to the bottom, which, when the water is drawn off, is dried and prepared for exportation.

THOUGHTS ON CURRENT TOPICS.

IT has taken Mr. Abbey a very long time to formulate a reply to some observations of mine on the subject of the ripening of the wood of fruit trees, and this he has done in a very able contribution on page 458. It is so long since I recorded my reflections on this subject that I have not the paragraphs in mind to which your correspondent refers, but I will take it for granted that he has quoted me correctly. In asking the question "Does not wood ripen after the leaves are off, and in subsequent seasons?" I had in view an aspect of the case on which Mr. Abbey appears to lack experience, for he says the "buds of fruit trees are perfect in the year of their formation, and do not change after the foliage falls from the trees," and he goes on to say he has "never known an instance of trees with no blossom buds, when the foliage fell, forming them in winter." His reasoning on the subject of the formation of fruit buds is sound as far as it goes, but I suspect he stops too soon. In this view I may possibly be at issue with scientific authorities, but that does not matter, and especially since they are constantly at issue amongst themselves.

THE buds of fruit trees, I dare to aver, do change after the leaves fall when the conditions are favourable, and these are so simple that they can be afforded by anybody who has a few young trees and a spade. I have a recollection of an observant student of fruit trees, and an expert cultivator, stating in this Journal that he had induced many of his trees to change the nature of the buds in the winter, and, what is more, I went to see the results of his experiment. He had long rows of pyramid Pears and bush Apples—that is to say, dozens of trees of the same age, size, and variety. Having observed that his root-pruned or transplanted trees invariably blossomed more freely in the spring following their disturbance, he was led to opine that the check they received was the cause of their floriferousness. For testing the matter he had alternate trees in rows dug up in November, root-pruned, and replanted. Without an exception these trees had at least five times the number of blossoms on them the following April that those had that were not disturbed. The difference, indeed, was so striking that I venture to say the owner of the trees, his gardener, and their several visitors are not likely to forget the lesson that it was impossible to ignore. A fairer experiment was never made than that, nor one more conclusive. It was completely at variance with Mr. Abbey's theory, that "buds do not change in the bud state after the leaves fall from the trees." I am warranted in saying they do change, and why should they not? What is a fruit bud? It is an arrested wood bud, and nothing else. Whether the cessation of extension is natural or artificial matters not, the result is the same—the embryo leaves are transformed into petals and organs of reproduction. There are numbers of buds on fruit trees in the autumn in the intermediate state between fruit and wood buds, and no man that I have seen can tell with certainty what form some of them will assume in April. They are arrested, but not sufficiently so for determining the point, but a further check by root-pruning will settle the matter. Scores of fruit trees are planted annually, and their branches not shortened, that make little or no growth, but are studded with fruit buds that would not have formed if the trees had not been disturbed. Force has been lacking for extension into shoots, hence the metamorphosis.

It is for the same reason that what is known as ripened—that is, hard wood, is not essential to the formation of fruit buds. Observe, I am not advocating overcrowded, sappy, ill-fed wood, that is very far from my intention; but I do say that cutting back shoots to where the wood is hard and brown, as if that were an infallible test of "ripeness" and fruitfulness, is greatly overdone, and much fruit is sacrificed in consequence. In point of fact fruit buds do not form so well on the lower, older, and harder parts of annual shoots as on the upper, softer, greener, and younger portions. This may be seen alike in Peaches, Apples, and Pears, and it is that which has led to the adoption to a much greater extent than formerly of what is known as the extension system of management. If hard, brown, and so called "ripe" wood is alone fruitful, how is it that thousands of growths of Pears, for instance, the last and latest inch of growth made, terminates in fruit buds? It is because the root force is expended on the other parts, and growth is necessarily arrested at the extremity of the branches.

So far as regards the production of fruit, not taking into account the form or shape of the trees, the less the branches are shortened the better, after the first year or two from planting, provided—and this is important—they are so thinly disposed that the sun and air can act directly on the foliage. It is assumed the roots are in good and well-drained soil, and not mutilated by digging amongst them. Then will fruit buds form in the greatest numbers, and the ripening of the wood may be left to take care of itself; it will "take care" to ripen sufficiently for its purpose, and will get harder and harder as the years roll round. Trees, as we all know, must often have the growths suppressed to keep them within prescribed bounds, and to mould them into some ideal form; but I repeat, that when fruit, and fruit alone, is the main object, it is best secured by having the branches thinly disposed and not shortened, as then a maximum number of spurs is eventually produced with a minimum quantity of breastwood.

THE manufacture of "breastwood" in fruit trees of various kinds by a systematic shortening of the branches to "hard ripe wood" is a gigantic waste of the earth's resources and a fertile source of barrenness. Cutting off these luxuriant laterals is not arresting growth but directly encouraging it; for if the roots are left intact their force is concentrated on a smaller area, and just as that is restricted in the same proportion is strong growth incited. The point can be made clear by an illustration. Confine a volume of water to a narrow channel, and it rushes headlong and with great force in search of an outlet, while the surrounding land is parched and vegetation languishing; but divert the stream into a number of miniature creeks, and exactly in proportion to this number is the force of the volume diminished, and a thousand trickling rills carry sustenance to crops that would otherwise suffer, while the concentrated current would rush wastefully away. It is exactly the same with fruit trees that are subjected to close pruning, while the roots are permitted to extend unrestrictedly.

It is impossible, to me at least, to think out a subject of this magnitude in a few minutes and make it intelligible to the inexperienced in a few lines. It is in the interests of those I write, and not for experts who know as much about the subject as I do, and need no teaching; they may, indeed, know more, and thus be in a position to confute me. They are quite at liberty to do so. I do not in the least object to be defeated in a pleasant manner, for it is a simple fact that I have been taught more by

defeats, disappointments, and failures than by anything else in my gardening career.

BUT can anything be done now to render fruit trees more productive? Certainly. Thin out the branches and shoots wherever they are so crowded that the sun or light cannot act directly on the leaves at the base. Never mind those at or near the extremities; they will force themselves out of the crowd—yes, and store sufficient nutriment there while the wood below and three months older—and which, consequently, ought to be riper—is barren. Ripe wood does not necessarily mean hard wood, but rather wood stored with nutriment by the leaves, whatever its age or colour may be. Ah! but the timid may say thinning out branches now will weaken trees by "bleeding." Nothing of the kind. There can be no escape of sap to do injury. It is diverted rather than lost when there is plenty of foliage left, and whatever loss there may be is, to speak paradoxically, a gain—a reduction of exuberance. Even a Vine with two rods does not "bleed" injuriously when one is cut out with the other in full leaf. It is far better, safer, and more profitable to prune whatever needs pruning in the summer when the leaves are on the trees than in the winter when they are off, because at the former period the trees are not only immediately benefited, but the wounds heal the sooner. I think I have said enough on the subject of fruit trees at present, and Mr. Abbey can have another "cut in" if he likes.

It seems a little curious that gardeners who pride themselves, and not without reason, on their skill in growing vegetables, hesitate to express an opinion on cutting the weak growths of Asparagus. The point that is not so clear as is desirable is this: Is Asparagus strengthened by cutting the small growths or "spray" that are not large enough for use till say the beginning of June, or not? or is it immaterial whether they are removed or left? This is a very simple question that the authorities appear either unable or unwilling to answer. Possibly they are making experiments, and the results may be expected by-and-by. I have a few other things "on my mind," but cannot get them off at present, as I am just off to Liverpool, and possibly may, on some future occasion, say what I think about the Show.—A THINKER.

THE IMPORTANCE OF DEEP CULTIVATION.

MR. WILLIAM HUDSON, head gardener to Mr. W. T. Marriott, J.P., of Sandal Grange, near Wakefield, read an exceedingly interesting essay on "Deep Cultivation" at a recent ordinary weekly meeting of the members of the Wakefield Paxton Society. Mr. T. Senior, solicitor, was in the chair, and Mr. H. Oxley, one of the vice-presidents, officiated as vice-chairman.

Mr. Hudson, who was very attentively listened to and frequently applauded, said his chief object was to direct their attention to what he considered an improved method of cultivation. In the first place he recommended them when digging always to bring a little of the fresh subsoil to the surface with every spadeful. However hard and inert the soil might be, if it had time to get thoroughly pulverised it would always improve the quality of the surface soil. They knew by experience that deep cultivation and thorough pulverisation of as much of the soil as possible was essential to the production of good crops of all classes. That land at the present time did not receive the attention it deserved was evident from the decrease in the quantity it produces. In his opinion land was as good now as ever it was, and in every way as capable of producing as good crops if properly managed. He was glad that the matter was receiving the attention of some of our legislators. There are few soils to which something may not still be done in the way of improvement, while by far the greatest breadth of land is still susceptible of extensive amelioration. The most important immediate effect of thorough drainage is that it enables the rain or other surface water to descend more deeply and to escape more rapidly from the soil, and the under soil in well-drained land is warmer, because the rains in the summer season bring down warmth through the atmosphere. Rain equalises the temperature of the soil during the season of growth, hence the necessity of watering all plants grown in pots with tepid water. Taking thorough draining as the basis of all land improvement, the skilful cultivator renders the dry ground a fitter medium for all plants to bring their precious products to perfection. Roots in a confined space, supplied with manure, became crowded together, declined in health, and their growth was checked. This disappointment arose from the subsoil, though dried, being left in a hard state, whilst if it were in a state of pulverisation like the surface soil, the roots, whenever stimulated by the manures, would strike down in every direction into the subsoil, and the more they were encouraged in growth the larger would they become. After pointing out that the state of the subsoil sensibly affects the condition of the upper soil, Mr. Hudson went on to say that the benefits derivable from thorough draining and deep cultivation may be regarded as physical as well as economical. If the operations he described rendered the soil drier than it was before, if they rendered the drier soil warmer than it was before, if they lessen the evaporation of moisture, and impart a consequent warmth to the air around; if they, on the other hand, supply moisture to vegetation at a period when it would otherwise be wanting, these are physical benefits tending greatly to the amelioration of the local climate that cannot fail to promote the healthy growth of all cultivated plants. The economical benefits derived by the soil and subsoil from thorough draining and deep cultivation were numerous and important.

Mr. T. Garnett and Mr. Turner (the Treasurer) having made some observations on the subject of the essay, Inspector Cordon proposed a vote of thanks to Mr. Hudson, and this was seconded by Councillor Milnes, and supported by Messrs. Oxley, L. Twigge, and the Vice-chairman, all of whom referred to Mr. Hudson and his essay in very eulogistic terms.

Mr. Hudson, in responding, enlarged on the great importance of deep cultivation, and said that in order to obtain good results gardening ought to be carried on all the year round, and instead of land being allowed to remain just as the crops have been taken off in the autumn until the

following spring, it ought to be dug up deeply immediately after cropping. If that were done, much manuring would be saved, and more success would attend gardening operations.

RYDE ROSE SHOW.

THE Rose Ball was successfully opened at Ryde, Isle of Wight, on Tuesday, the 22nd of June, when, favoured by fine weather, the Ryde Sports and Amusements Committee held their annual Show in affiliation, this year for the first time, with the National Rose Society. An attractive schedule had been provided, including both the gold and silver medals of the N.R.S. and a silver challenge cup, with the result, in spite of the cold and backward season, of a very effective display.

In class 1, for twenty-four distinct, the first prize was won by Mr. R. E. West, Reigate, with Mrs. G. Dickson, Mrs. Baker, Senateur Vaisse, La France, Marquise de Castellane, Anna Ollivier, Alphonse Souper, Rubens, Marguerite Brassac, Marie Van Houtte, Marie Cointet, Violette Bouyer, John Hopper, Dr. Sewell, Madame Gabriel Luizet, Duke of Edinburgh, Baronne de Rothschild, Duke of Teck, Gloire de Dijon, Duchess of Bedford, Madame Fanny de la Forest (a good bloom, an improved Boule de Neige), A. K. Williams, Countess of Rosebery, and Duchesse de Vallombrosa. Messrs. Ewing & Co., Sea View Nurseries, Havant, Hants, were placed second, their best blooms being Eugénie Verdier, Duke of Teck, Constantin Tretiakoff, Louis Van Houtte, Mrs. Baker, Marie Baumann, Sultan of Zanzibar, and Lady Mary Fitzwilliam.

In class 2, for twelve distinct, D. Seaton, Esq., was deservedly placed first for a very fine box, including half a dozen first-rate Teas—namely, Mrs. Baker, Maréchal Niel, Madame Victor Verdier, Innocente Pirola (very fine), Madame Willermoz, Duke of Teck, Comtesse de Nadaillac (grand), Madame Lambard, Duke of Edinburgh, Constantin Tretiakoff, Xavier Olibo, and Etoile de Lyon (good). Captain Ramsey, Fareham, Hants, was a good second. In class 3, for twenty-four distinct (local) Mr. Butcher, Ryde, was first, his best blooms being Paul Neyron (not coarse, and unusually bright in colour), Senateur Vaisse, La France, Maréchal Niel, and Belle de Bordeaux. Second Mr. H. G. Nunn, Buckingham Grange, Ryde.

In class 4, also for twenty-four distinct, but confined to amateurs not employing a regular gardener, Mr. G. Pack, Ryde, was easily first, securing the N.R.S. gold medal with a box that included fine blooms of Princess Louise Victoria, Madame Lacharme, Etienne Levet, Jules Margottin, E. Y. Teas, Elie Morel, Nardy Frères, Sophie Coquerel, Devouensais, Madame Chas. Wood, and Fisher Holmes; while Mr. G. Williams (second) had fine Maréchal Niel, Reine Marie Henriette, and La France.

The first prize in class 5 was a silver challenge cup, presented by Rev. Canon Girdlestone, D.D., formerly Vicar of Ryde, for the best twelve Roses shown by a resident in the island; and this was also secured by Mr. G. Pack with first-rate blooms of Princess Louise Victoria, Charles Darwin, Eugénie Verdier, F. de Lesseps, Jules Margottin, Royal Standard, Marie Baumann, Souvenir de la Malmaison, Duchesse de Vallombrosa, Fisher Holmes, Madame Lacharme, and Elie Morel; the second prize, the National Rose Society's silver medal, falling to Mr. J. Brook. The prizewinners for baskets and bouquets of Roses were Messrs. Brook, Butcher, and Nunn.

In class 9, for a miscellaneous collection of Roses, the first prize was awarded to T. W. Girdlestone, Esq., of Sunningdale, Berks; Miss Daubuz, of Ryde, taking second. Mr. Girdlestone's collection was arranged in five boxes, and was more or less representative of the entire genus. In the centre was a box of about sixty trusses of the charming Japanese species *R. polyantha*, and near by, were the hybrids between it and the Teas, Mignonette, Ma Paqueritte, and the orange Perle d'Or. North America contributed the rosy *R. Woodsii*, while the Himalayan *R. rugosa* was represented by Nabonnand's perpetual deep purple, double variety, Comte d'Espremesnil. For rubiginosæ there were a bright red seedling Sweet Briar, the single yellow and the copper Austrian Briar, Harrisoni, and the Persian Yellow; for Pimpinellifolia, Scotch Roses in variety, white, clear pink, and yellow; Centifolia contributed Mosses, common crested, and Blanche Moreau, the best white by far; and also Spong and De Milleaux Damask, York-and-Lancaster (true); Gallicas, Cillet Parfait, Adele Prevost, and Surpasse Tout. The China was in evidence as Viridiflora; Noisette as Maréchal Niel, Lamarque, and William Allen Richardson; Tea-scented Devoniensis, Rubens, Marie Van Houtte, and Reine Marie Henriette; while A. K. Williams, Marie Baumann, and Horace Vernet were selected for the representation of the modern Hybrid Perpetuals. The two Roses, however, which attracted greatest admiration were two of the most fragile of the single Roses, Rosa Begeriana nigrescens with its graceful foliage and pure ivory-white flowers, and Rosa rubrifolia with bluish foliage and charmingly Old-World looking pink flowers; the two making an elegant pair that would be an addition to any garden.

There was an extensive display of cut Pelargoniums and other flowers, and many beautiful vase arrangements; but in class 39, for wild flowers, a most gracefully arranged and charming combination of "Moon Daisies," wild Roses, and young red Oak shoots was strangely passed over in favour of some fearful and wonderful erections of the ornamental confectionary type. It is to be hoped that the classes for collections of wild flowers will not tend to the extermination of the native flora of the island; but they included many good species, such as the Bee, Fly, Twayblade, Bird's-nest, and Butterfly, in addition to the common Orchises, as well as the seashore plants, the Horned Poppy, Sea Holly, &c. Be that as it may, however, the Committee and their able Secretary, Mr. Eley, are to be congratulated upon the great advance made this year upon their former shows, and upon their obvious success in improving local horticulture.—T.

THE GREAT YORK GALA HORTICULTURAL EXHIBITION.

THE twenty-eighth annual Exhibition was held in the Bootham Grounds, York, June 23rd, 24th, and 25th, and a strong gale was blowing all the early part of the day, and caused much anxiety with regard to the tents. One side of the long Rose tent was blown in, and some of the boxes of Roses were knocked off the stage, but the afternoon, fortunately, brought calmer

weather. The Exhibition was in all respects a capital one, and in no way inferior, if not superior, to any the Society has yet held. An additional tent has been added from the pay entrance to the great circular tent, and Mr. B. S. Williams of Holloway filled one side with a large collection of plants, a highly interesting exhibit, containing as it did so many rare things. Several examples of one plant, not rare, but its value is not yet generally known for forcing purposes, *Hydrangea paniculata grandiflora*, was conspicuous. Amongst Orchids were *Cattleya Warneri*, *Houlletia odoratissima*, *Anguloa Clowesi*, *Dendrobium Bensoniæ*, *Lycaste Deppii*, *Cypripedium Veitchii* and *Lowii*, and others. In miscellaneous plants there were many novelties. *Aralia Kerchoviana* is a plant of rare beauty, and a fine plant of *Metrosideros floribunda alba* was seen at the York Show for the first time. *Amaryllis* Mrs. Wm. Lec, *Nepenthes Mastersi*, and *Chelsoni*, *Dracæna Lindenii*, some splendid new and choice Crotons, and many other plants made up a very effective group. On the opposite side of the entrance tent various specimen plants were grouped, chiefly Mr. Cypher's, including some grand Crotons.

In the class for sixteen plants, Mr. Letts, gardener to the Earl of Zetland, was first with really grand plants in the highest state of cultivation, and including a very fine *Azalea Reine des Fleurs*, *Erica tricolor Wilsoni*, a monster *Ixora Williamsii*, *Croton Queen Victoria* in fine form; *Erica depressa*, the admiration of everybody, a wonderful plant: *Phœnocomia prolifera*, in fine condition; *Anthurium Schertzerianum*, and *Shuttleworth's* variety also; *Croton Johannis*, *Erica tricolor superba*, and *Dasylirois acrotrichum*, were all fine examples of good culture. Mr. Cypher ran a good second also with beautiful plants, which included *Cycas revoluta*, *Anthurium Schertzerianum* Cypherii, very fine; *Erica Cavendishiana*, *depressa*, and affinis; an extra fine *Ixora Williamsii*, *Croton Queen Victoria*, *Erica tricolor Wilsoni*, and other capital specimens. Mr. Wm. Done, York, was placed third. In the class for six stove and greenhouse plants, Mr. Letts was placed first, J. B. Hodgkin, Esq., second, and T. Fry, Esq., M.P., third. For three stove and greenhouse plants, Mr. E. Adams, Newcastle, was first; W. N. Champion, Esq., second; W. Bateman, Esq., third. For six ornamental plants five collections were staged; first, Mrs. Gurney Pease; second, Mr. Cypher; third, T. Fry, Esq., M.P.

A long spacious tent was devoted to groups of plants arranged for effect, and the centre was filled up with six groups in competition in one class, each 250 square feet. The first prize group, set up by Mr. McIntyre, gardener to Mrs. Gurney Pease, was artistically arranged and much admired. Mr. Robt. Simpson of Selby was second; J. B. Hodgkin, Esq., third; and Messrs. Simpson & Son, York, fourth; two extra prizes being recommended. All these groups were effectively arranged. At each end of this tent were two half-moon-shaped groups in another class, and here again Mr. McIntosh took first honours with a charming group; second, J. Fry, Esq.; third, J. F. Hingston, Esq. (Mr. R. McIntosh, gardener). The exotic Ferns were very good. J. B. Hodgkin, Esq., was first with very fine plants, which included an immense *Davallia Mooreana*; Mrs. Gurney Pease, second, in the lot being a superb plant of *Adiantum scutum*; third, J. Fry, Esq.

In the classes for ten and six hardy Ferns, a very fine collection was staged, Mr. W. R. Robinson being first and Mr. Wm. Rodwell second in each class. For ten Ferns Mr. Robert Simpson was third, and for six Mr. William Simpson. Two admirable pots of six *Lycopods* were staged, remarkable for their size and health. The Rev. Canon Newton was placed first, and Mrs. Gurney Pease second. Cape Heaths were not numerous, but Mr. Cypher's first prize three were of a good size and in excellent condition. Some good Tree Ferns were shown, and a quantity of specimen *Coleuses*. Bedding plants in pots and pans were well contested, and these are always done remarkably well at York, many of them very large, but in every case well grown. In the class for sixteen varieties four exhibitors competed, Messrs. Simpson & Son taking the first prize with a splendid collection. In the class for twenty-six alpine and herbaceous plants in pots there were three exhibits, Mr. W. H. Rodwell taking the first prize.

Mr. Wilson, who for twenty-eight years has been the active Secretary, made a special effort to organise three special prizes of £12, £8, and £5 for twelve Orchids, and four exhibitors competed. The first prize was taken by G. Hardy, Esq., Cheshire, with very fine specimen us, many of them masses of flower, and including *Cattleya Mendeli* varieties, *Mossia* varieties, *Odontoglossum vexillarium*, and *v. rosenm*, *Aerides Veitchii*, *Lælia purpurata*, *Cypripedium*, and others, altogether grand. Mr. Cypher was second with good plants, which included superb examples of *Dendrobium suavisimum*, *Saccolabium guttatum*, and *Cypripedium lævigatum*. Third, Dr. Ainsworth. In the class for eight Orchids (the Society's usual prizes), G. Hardy, Esq., was again first with fine plants, in which was a superb *Cattleya Mossia superba*, *Odontoglossum vexillarium*, *Cypripedium Lawrenceanum*, *Cypripedium Parrishi*, and *Cattleya Mossia grandiflora*, all very fine. Mr. Cypher was second, and in his plants were fine specimens of *Dendrobium suavisimum*, *Anguloa Clowesi*, *Epidendrum vitellinum*. Third, Dr. Ainsworth. For four Orchids—First, W. N. Champion, Esq., Halifax; second, Mr. John Sauley; third, W. Bateman, Esq. Specimen Orchids—First, the Earl of Zetland, with a very large well-flowered *Aerides odoratum*; second, Captain Starkey, with an excellent *Saccolabium præmorsum*; third, Sir Joseph Pease, Bart., M.P., with *Odontoglossum vexillarium*; fourth, Mrs. Titley, with *Aerides Fieldingi*.

A square stage in tiers had been erected at the entrance to the fruit tent, on which the Orchids were effectively displayed by mixing Ferns, &c., amongst them. This group was a striking feature of the Exhibition.

Fruit was well represented, quality running throughout. Mr. Mills, gardener to Lord Carrington, was first for eight varieties, *Madresfield Court* and *Buckland Sweetwater* Grapes, *Grosse Mignonne* Peaches, *Lord Napier Nectarines*, very fine *Black Circassian Cherries*, *Negro Largo Figs*, and a very fine yellow-skinned *Melon*, *Longleaf Perfection*. Mr. McIndoe, gardener to Sir Joseph Pease, Bart., was second, having in his collection good *Bellegarde Peaches*, *Lord Napier Nectarines*, and *Best of All Melon*, a fine netted yellow. Third, the Hon. Mrs. Meynell Ingram. For six varieties of fruit, first the Hon. Mrs. Ingram with a fine *Queen Pine*, *Madresfield Court* and *Foster's Seedling* Grapes, *Longleaf Perfection Melon*, and *Peaches* and *Nectarines*. Second prize to Mr. McIndoe. Four varieties of fruit, first J. Fielden, Esq. (Mr. Clayton gardener); second Sir Henry M. Thompson, Bart.; third Mrs. Gurney Pease. In *Pines* (five exhibits) J. Fielden, Esq., for a good *Queen*. In *Peaches* (ten exhibits) first Mr. McIndoe; second

Lord Middleton; third, Sir H. M. Thompson, Bart. Nectarines (twelve exhibits) first the Misses Pease; second Lord Carrington; third Mr. McIndoe. Three bunches black Grapes (six exhibits) first Mr. J. Hickson-Clifford for fine Black Hamburgs; second Sir H. M. Thompson, Bart; third Lord Hotham. Three bunches white Grapes (eight exhibits) first Lord Hotham for very fine well-coloured Buckland Sweetwater; second Mr. McIndoe; third Mr. Miles. Strawberries.—First Lord Middleton with very fine James Veitch; second P. Thellusson, Esq., with British Queen; third Mrs. Gutch with President, all good. Tomatoes (nine exhibits of twelve fruits) first Mr. McIndoe with Stamfordian, a handsome bright-coloured smooth variety; second G. Hardy, Esq., a seedling very closely resembling Stamfordian; third J. Fielden, Esq. Cucumbers (twenty-seven exhibits) good throughout. Cut herbaceous plants (six exhibits) all good; first prize to Mr. G. Holmes, York.

In the classes for two bridal and two ball-room bouquets, Mr. Cypher was first in each class in his usual style; Mrs. Gurney Pease second, and Mr. W. Knight, Middlesborough, second and third respectively in each class. In epergues, Mr. Cypher first, and Mr. A. Hunt, gardener, Holme Hall, second. There were four collections of vegetables staged in competition for Messrs. Backhouse's prizes, Mr. Miles taking the first prize with a well set up lot of first-rate quality; second, Col. Thorpe; third, the Earl of Harrington. The cut stove and greenhouse flowers are always well represented here. Mr. Letts was first with twelve varieties, with beautiful Orchids and others. Mr. McIndoe second. Third, A. Wilson, Esq. For six varieties of stove and greenhouse flowers, first Mr. McIndoe, second, the Misses Pease. Gloxinias.—The Rev. Canon Newton secured the first prizes in each class, but the plants were too stiffly and formally tied.

The highest praise must be given to the great display of well-grown Fuchsias. In the class for six there were five exhibits, J. Bellesby, Esq., York, taking the first prize with superb plants, averaging 5 feet in height. There were eight exhibitors of three Fuchsias, and the first prize went to Miss Wharton, York, for grand plants. Second, J. Bellesby, Esq. Herbaceous Calceolarias were good and somewhat numerous, clean well-grown plants, the Rev. Canon Newton taking first prizes for six and three. Begonias were tolerably numerous, but with one exception, Mr. W. Foster's, inferior sorts were exhibited.

York is celebrated for its grand display of Pelargoniums, and the large tent was again well filled. Fancies are more numerous shown here, and only one exhibitor, Mr. Eastwood, gardener to Mrs. Tisley, Leeds, was first for six and three with well grown plants. The large-flowered Pelargoniums were much more numerous, and in the classes for twelve, six, and three Mr. Eastwood was first with magnificent specimens in fine condition. Mr. McIntosh, gardener to J. T. Hingston, Esq., was second in each class with excellent specimens, and Miss Steward of Bishopsthorpe third for twelve and three. The Zonals were very fine indeed, and a striking feature of the Exhibition, and very numerous. Here again Mr. Eastwood was first for twelve and six plants; Messrs. Pybus & Son, Ripon, second for twelve, Mr. McIntosh third, and J. Bellesby, Esq., fourth, and still one other exhibit. For six Zonals, second Miss Steward with well-grown plants; third Mr. McIntosh, and there were two other exhibits. In the class for six double Pelargoniums, Messrs. Simpson & Sons were first, Mr. Eastwood second, the Rev. George Yeats third, and three other exhibits. For three doubles—First, Rev. Mr. Yeats; second, Mr. Eastwood, and two other exhibitors. Six Bronzes—First, J. Bellesby, Esq., with very large, well done, highly coloured plants. For three Bronzes—First, Miss Wharton with well-grown plants. Tricolors were well represented. For six, first Messrs. Pybus and Sons, and first for three the Rev. G. Yeats.

The principal exhibitors for Roses in pots were Messrs. Jackson & Co. Messrs. Pybus & Son, Miss Steward, and Mr. Eastwood. Large numbers of plants were staged, and the quality was an improvement on previous years. Eight exhibitors of six dinner table plants brought out an excellent display, Mrs. Gurney Pease taking the first prize and J. B. Hodgkin, Esq., the second. Cut Roses were not so numerous as usual, but Mr. Hy. May of Bedale first-prize forty-eight were very good, and Mr. Eastwood was second. For thirty-six blooms Mr. May was again first, and Mr. John House, Peterborough, second, all with out-of-doors blooms. For twenty-four blooms, equal firsts went to Mr. H. May and Mr. Eastwood.

Messrs. Laing & Co., Forest Hill, contributed a fine stand of cut Begonias, to which a certificate was awarded. Certificates were also awarded to Messrs. Kent & Brydon, Darlington, for a collection of Violas and other cut flowers, and to Messrs. Harkness & Son for a fine collection of fancy Pansies.

Orchids are to be made a special feature next year; a subscription list is already entered into for £50 in extra prizes in addition to the Society's prizes, the Sheriff of York heading the list with £5, and over £30 was promised on the first day of the Exhibition, and the Committee hope to receive further encouragement from the trade growers of Orchids.



KITCHEN GARDEN.

GROWING CROPS.—Crops are now growing freely, but growth has been slower this year than we have noted it in many seasons, though the plants are healthy, and we have never seen so few of them running to flower prematurely. None of our early Celery has run, neither have the Brussels Sprouts, although sown last autumn, and none of the Cauliflower has "buttoned." Turnips, although sown as early as usual, have shown no signs of running, and in this respect the crops are very satisfactory. Judging from present appearance the vegetable crops of 1886 will be

generally good and free from disease. We are now digging Potatoes in a south-east border, and although small they are numerous and of excellent quality. The variety is Rivers' Ashleaf.

ONIONS BULBING.—Onions are late this season. Four years ago we had spring-sown bulbs 11 inches in circumference by the 1st of July, but this year they will not be half that size on that date, and yet they have had equally good culture. Those who want large bulbs this season must thin the plants freely and expose them well to the sun now. Care should also be taken when any are drawn for use that they are plants with the thickest necks, as those will never bulb well, and should always be used first. Autumn-sown Onions must have the soil removed from the bulbs, and if a saucer-like place is formed round each, they may be watered conveniently, and will become very large in size. They can hardly have too much water now, and liquid of considerable strength will soon bring them into show form.

SPENT CROPS.—Many of the early crops are soon over, as they are not, as a rule, sown in large quantities, and the produce is always gathered from them as soon as possible, but there is often a little carelessness in clearing them away altogether when the crop is finished, or has become too old for use, and it is this which becomes unprofitable. Some may say, "We do not want the ground at present for anything," but that is not all. Old crops, especially those going to seed, take a great deal of nourishment out of the soil; indeed they exhaust it more than when they were growing, and they should all be cleared away the day they cease to be of use.

SPRING CABBAGES.—These are now well in, but they are some weeks behind their usual time and not so fine as we have seen them. The plants are not so vigorous as usual, and where this is the case it will be best to draw the roots up as soon as the heads are cut off and plant again. More Cabbage may be put in or some other crop. Where the stems and roots are very strong they will, if left, produce quantities of side sprouts like small Cabbages further on or in autumn, but when there is no chance of their doing this, throw them away as they will never be profitable.

ASPARAGUS.—Of late this has been excellent and large quantities have been cut, but cutting should now cease, as it injures the roots if carried on too late. We always give up the Asparagus as soon as the Peas come in, which is generally early in June, or by the middle of that month at the latest, but whether the Peas be ready or not the cutting should be stopped. When the crowns are springing up it is quite impossible to hoe the ground amongst the plants, and the beds are apt to become very weedy owing to this; but when hoeing cannot be done hand-weeding must be resorted to, and every Asparagus plantation should now be quite free from weeds. A small handful of salt may be sprinkled round each root either before or after hoeing. Considerable damage is often done to Asparagus by allowing the tall growths to be blown over by the wind, and as soon as the growths become tall enough to be tied up place a stake close to the root of each plant, and the growths should be tied to this with a strong piece of matting. This is one of the most important points in the summer culture of Asparagus.

LATE CELERY.—This must now receive attention. If the plants are still small dibble them into some good soil until they gain a height of 4 inches or so, and then plant them out. Where they are this size now they may be planted at once, putting three or four rows in each trench and watering them thoroughly after planting. Some may have kept on a number of the early plants to place out now as late ones, but these will never be so satisfactory as plants raised from late-sown seed. Place a layer of short manure between those plants in the trenches. This will save watering and keep the roots cool and moist. Earth up the earliest plants. Begin this operation by drawing off the short side leaves, then break up the soil on each side of the trench, and work it carefully down and round the plants. A layer of soil from 3 inches to 4 inches in depth is quite enough for the first earthing.

TOMATOES.—The earlier plants in pots and boxes are bearing heavily, and the fruit is swelling well. They will, however, soon become exhausted, and should have liquid manure daily in hot weather. It is impossible to give them too much. A top-dressing of first-rate manure will also be very beneficial, and they must never be allowed to suffer from drought. Where the main shoots are long and fruitless for a long way up allow a fresh shoot to grow from near the surface of the soil, and by exposing this to light and air it will begin to fruit early, and may be used as a new plant. Where the crop is very heavy remove all deformed fruits. We find the cook prefers medium-sized ones to very large fruits. The open-air plants are now starting into growth. Give them plenty of clean water until the crop is formed. Pinch out all side shoots, and keep the points of the leaders in their proper places; do not allow them to fall over or become twisted.

CROWDED VEGETABLES.—There is a great tendency at this season for vegetables to become crowded, and under this condition nothing will gain a handsome size. Thinning, as a rule, is not practised enough or to such an extent as it should be, and we would urge on all who wish to gain distinction for the excellency of their crops to have no hesitation in thinning, especially at this season.

LATE BEETROOT.—It is a mistake to have Beetroot too large, and the early-sown roots are very apt to become too large by the end of the season; but if a few rows are put in now the roots will be in excellent condition as to quality by October.

FRUIT FORCING.

VINES.—*Early Houses.*—The Grapes being cut, keep the house as cool as possible by free ventilation, and withdraw the roof lights where practicable when rains prevail. The cleansing effect of rain is very beneficial,

and a thorough moistening of the borders will do much towards the production of fresh laterals and the maintenance in health of the principal leaves, thereby preventing premature ripening of the foliage. Vines that are becoming exhausted through long subjection to early forcing and bearing heavy crops should have one of the borders renovated and the roots laid in fresh material near the surface, for which preparation should now be made by getting the material together, as it is important work of this kind he executed at the right time and with dispatch. One of the borders only should be acted upon at a time, operating on, say, the inside border one year, and following with the outside border the next. The proper time to attend to the roots in the case of early Vines is as soon as the foliage gives indications of ripening. Syringe the foliage every evening in fine weather to preserve the leaves in a healthy condition as long as possible, for when they die prematurely second growth will set in about the time the Vines should be pruned and going to rest.

Houses of Ripe Grapes.—Keep the houses cool, and on hot days sprinkling water on the borders and floors will be beneficial. Moderate moisture will not injure ripe Grapes at this season, provided it is not stagnant and the temperature is not allowed to advance in the morning before the ventilation is increased, so as to prevent moisture being condensed on the berries. A temperature of 55° to 60° will be sufficient for ripe Black Hamburghs at night, but Muscats and other heat-requiring varieties will need fire heat to prevent the temperature falling below 60° to 65° at night. Turning on the heat in the morning so as to allow a free circulation will materially assist in the maturing of Muscats, even after they appear ripe. Moisture should be carefully guarded against in the case of Muscats, or they soon spot in a moist confined atmosphere. Allow a gentle circulation of air constantly, even if fire heat has to be employed to secure it. A slight shade is absolutely essential to Black Hamburghs keeping colour for any length of time after ripening. Some doubled garden netting drawn over the roof lights is mostly sufficient. Muscats colour in proportion to the light and heat they receive.

Grapes Ripening.—Ventilate constantly, a circulation of warm rather dry air being essential to good finish. Black Hamburghs and similar varieties need only have a night temperature of 60° to 65°, and 70° to 75° by day secured to them; but Muscats require a temperature of 70° to 75° at night and 80° to 85° by day, advancing with sun heat to 90° or 95°. If there is likely to be any deficiency of moisture in the border give a thorough soaking, choosing the early part of a fine day, and ventilate freely. Mulching with short dry material will prevent any danger of moisture arising to the injury of the crop. Plenty of air should be admitted after the Grapes change colour, a little fire heat being necessary in dull weather.

Grapes Stoning.—Dull weather with occasional gleams of sun is the worst for scorching and scald. It is best to have a little fire heat to prevent a low night temperature, and admit of early ventilation to avoid the deposition of moisture upon the berries. If they are allowed to be covered with moisture, and the sun raises the temperature considerably before ventilation is given, the leaves and berries will assuredly suffer. A little heat and free early ventilation are the preventives of scorching and scalding. When the stoning is over, and the fruit commences ripening, danger from scalding is considered past; but Muscat of Alexandria scorches badly even after the Grapes are advanced in colour, and a slight shade, as that of garden nets drawn over the roof lights, is of great benefit.

Late Houses of Black Hamburghs.—The thinning must be concluded without delay. Thin well but not unduly, and remove surplus bunches if there be any doubt about the crop, for Black Hamburghs to hang well must be as thick in the skin, as firm in flesh, and as highly finished as possible. It is no use expecting heavy crops that do not finish higher in colour than a reddish black to hang well, for they will only disappoint. Either they must be black and have as much bloom as *Sis* or they will not keep colour long. Allow a fair amount of lateral growth, as Grapes finish better with a modified light, but avoid overcrowding.

THE BEE-KEEPER.

SECTION RACKS AND HOW TO MAKE THEM.

If it is decided to adopt the "piling" system of supering it will be necessary either to make or purchase a number of section racks of a size to suit the ideas of the individual bee-keeper. When these racks have to be purchased the expense is greater perhaps than some will be inclined to bear, even if they have the necessary money at their disposal, which is naturally not invariably the case. Catalogue prices vary from 3s. to 3s. 6d., and when it is remembered that five or six racks for every stock from which no swarm is to be taken are required, the item will be a heavy one, and add nearly, if not quite, a sovereign to the capital outlay on every stock in the apiary from which comb honey is to be taken as advised in former notes. It is scarcely necessary to say that when a swarm, or a stock which has given a swarm, is being supered there is not such essential necessity to provide room

continually in the advance of the requirements of the bees, and therefore half the number of racks will in those cases be a sufficient supply. The object at present is to give clear directions for making a very simple yet efficient rack at home cheaply and well, so cheaply that if time is reckoned at 5s. a day, even then half a dozen racks may be provided at a cost of 9s. 6d. only if the workman is careful not to cut his wood to waste, and to purchase it in lengths of convenient size so as to cut it most economically for his purpose. The determination having been arrived at to make six racks, it is first necessary to decide upon the most suitable size, and from my own experience those containing twenty-one 1 lb. sections are most generally useful, the sections to be placed in three rows of seven, running parallel to the frames, forming a compact mass placed close together, but a space of about half an inch being left between each of the outside rows and the sides of the rack for the sake of being able to handle the sections more easily when removing them from the racks. There will necessarily be two parallel strips equidistant from one another in each rack, in addition to two others joined to the outer sides of the rack, for the support of the sections. The depth of the racks must be the same as the height of the sections, and the tops of these latter and the sides of the rack must be on a level, in order that when placed one upon another the tier may form a compact and substantial whole. Again, it is desirable to have the three end sections glazed in order that the apiarian may the better tell when the cells are sealed, and this may be arranged by (after the sections are arranged in the rack) placing a loose piece of glass of the same size as the zinc dividers across the three end sections and then protecting this glass by the wooden shutter, which will be described together with the rest of the woodwork of the box.

Every rack must be well made, and strong enough to sustain a weight of at least 21 lbs. with ease, and it may be remembered that the better the fit the less do the bees propolise and so disfigure the sections, and the more heat is retained. The size of the rack to contain twenty-one 1 lb. sections of the ordinary, though not standard, size will be 15 long by 14 inches wide by 4½ inches in depth, all inside measure—with the exception of the depth a slight variation makes no material difference. The strips for the support of the sections may be 1½ inch wide, and the front end, or rather the one in which it is intended to insert the glass and shutter, will need only to be 2½ inches high at the most, and even this is only required to keep the glass and shutter fixed in their places, and so retain the sections in the proper position. If a space is left between this end and the shutter a wedge may be inserted to fill up the gap, and by removing this wedge it will be more easy to remove the shutter and glass, and so to manipulate the sections, than if the fit was so exact as to need no such wedge. It will be perceived that the sections are to be placed so that the surface of the end ones will be seen at the glass and parallel to the frames of the stock, so that when the frames of the stock run at right angles to the entrance the 15-inch sides will run at right angles to the frames, and the 14-inch sides or ends parallel to them and the sections in the latter position.—FELIX.

(To be continued.)

THE WEATHER—SUPERING.

WE have now been enjoying a temperature of 80° for several days. The abundant rainfall of the past together with the present heat is very favourable to rapid growth. In some places the Gooseberry crop will be a small one. The caterpillar has been very destructive. The hedge sparrows, the natural enemy of this pest, are becoming scarcer every year. Wherever a coal pit exists the youths belonging to the place scour the country far and near, destroying every nest.

Supering was begun here on Saturday, the 19th June, at 3 P.M., and the bees took possession and commenced comb-building immediately. They are all well wrapped up; it is desirable it should be so, and that bee-keepers should become impressed with its importance. Wherever situated, no matter whether they be inside or outside, the same treatment is absolutely necessary in all cases if success is to be certain. If supers are not well covered every chink will be propolised, giving the bees extra

labour and spoiling the beauty of the comb. Heat in the hive economises honey in the secretion of wax, facilitates the building of comb, and enables the bees to go out in greater numbers to collect the honey, when otherwise they would have to remain at home in the best part of the day to build combs, which they will not do in a super uncovered when the temperature is too low, as it must be in uncovered supers during the night.

The same rule applies to the stock hive. We keep the bees at work by having them covered, so as not to be affected internally by any sudden change of temperature, and we regulate the doorway as required, both in the early part of the year as well as during summer. In the latter time we give abundant air during the day in hot weather, and contract at night, so that comb-building goes on uninterrupted, and that brood will neither be chilled nor drawn out, as is invariably the case in hives subjected to sudden changes of temperature internally.

All my hives have now sufficient honey stored for winter, or nearly so, and all gathered after this will be for myself. Nevertheless, should unfavourable weather come, there is great risk of the bees drawing their brood. This must be guarded against, and to prevent it we shall feed them, although not required. Bees after the middle of June draw their brood readily, and the hive is spoiled for later work at the Heather. During the earlier months of the year the bees will themselves die before they will desert their brood, but after this they seem to put most value upon self-preservation.

Some bee-keepers are greatly annoyed by their bees persisting in producing "virgin swarms"—i.e., top swarms swarming. I have been asked for a remedy and opinion. Both I gave to different individuals, but the advice given has been ignored, and I have been challenged to give my bees a trial in the rich districts that these unfortunate bee-keepers are placed in. There case is this: they want all the honey in supers, and for that purpose they employ hives half size only, in which, although every cell was available for brood, the queen would be crowded out in two weeks' time after being hived.

Can it be expected that bees would give entire satisfaction and profit by such management? and yet this and pigmy hives have been held forth as the acme of perfection for a decade past, and highly recommended to cottagers as a great improvement over straw hives and as a sensible departure from the tiering system.

A great change has now come over the leaders of modern bee-keeping. It is the tiering system pure and simple, so much despised a few years ago, that honey may be expected from. After so many high eulogiums passed on our system we ought to be proud.

It has always been surprising to me that cottagers and labouring men, heretofore the most successful bee-keepers, should have allowed themselves to be misled. Large harvests of honey can only be had from large hives with young and fertile queens with some foreign blood in them, increase of room, with plenty of wrappings on the exterior of the hive. If these simple rules are attended to, more good will result than from volumes of writing. On another occasion I will describe the state of many hives I have witnessed this year, together with their management throughout the year.—A LANARKSHIRE BEE-KEEPER.



* * All correspondence should be directed either to "THE EDITOR" or to "THE PUBLISHER." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

TO CORRESPONDENTS.—We desire to assure those of our correspondents whose letters and communications are not promptly inserted that they are not the less appreciated on that account. Our pages are practically filled several days prior to publication, and letters arriving on Wednesday morning, except by special arrangement, are invariably too late for insertion. The delay in the publication of some of these is not of material importance, but reports of meetings and shows held a week previously lose much or all of their value if not received in time to appear in the current issue.

Questions.—The pressure of the Liverpool Show prevents several letters being fully answered this week. "Rosa" is informed that Bertolonias require much heat, shade, and moisture; "A Subscriber" that fumigation properly conducted will not injure his Vines; "A Merchant" that the Grapes sent were scalded, and had better be shaded lightly than spoiled; "M. F." that he need not be alarmed; J. M. that Mr. Whittaker's Cucumbers are slightly shaded; and "J. Coates" that he does not appear to read Mr. Molyneux's articles, and to refer to page 438.

Tomatoes (C. C.).—We shall be glad to receive particulars of your Tomato trials, and wish you success. The copy of the Journal desired has been forwarded to you, the charge for which is 3d.

Pyrethrums and other Flowers (W. C.).—We have received the flowers referred to in your note. They are very good, and would no doubt sell if advertised.

Late Cucumbers (G. F. Jones).—Strong plants now established in 6-inch pots planted out in a frame in good soil, and a barrowful or two of fermenting material to give them a start, will bear abundantly in late summer if they are properly managed. They should be well watered with tepid water half an hour or more before the sun leaves the frames every afternoon in hot weather, admitting air in the morning when the temperature rises above 65°, increasing the ventilation with the increasing heat. It is a great mistake to allow the heat to rise to 80° or 90°, then admit a great volume of air at once to reduce the temperature.

Calceolarias (S., Tooting).—You have sown the seed much too early, and it is very questionable if your "fine plants" will answer your expectations. All you can do is to keep them steadily growing in a cool place, shifting before the pots become much crowded with roots. You had better sow more seed if you wish to insure a satisfactory display of these flowers next April and May.

Dwarf Chrysanthemums (O. C. Owen).—Sturdy, healthy cuttings grown in the full sun, inserted now in small pots of sandy soil, stood on damp ashes in a frame, kept moist, close, and shaded to prevent the leaves flagging, strike readily, and the plants are often very serviceable for various decorative purposes. The cuttings and young plants cannot have too much light and air consistently with keeping the foliage fresh. Thousands of dwarf plants of Pompon varieties are raised from cuttings inserted in July and August.

Single Pyrethrums from Seed (E. G. Walker).—You have been rightly informed. Any required number can be raised from seed, either in light soil in the open ground, or in boxes in frames, or outside covered with glass, and shaded till the seedlings appear. The sooner the plants are raised the stronger they become before winter, and the better they flower another year.

Pelargoniums for Winter (A. S.).—Very strong cuttings rooted at once, and the plants grown well under full exposure to the sun in a frame with the lights removed night and day in favourable weather, will flower in winter in a temperature of about 50°. The plants must not be starved in the summer, but kept steadily growing in the full sun, all flower buds being removed as they appear till the autumn. Our plants are strong, and being shifted into 6-inch pots; and some older plants which were pruned a week ago will be shaken out, placed in fresh soil shortly, and with careful watering they will flower profusely in November and December.

Mildew on Apple Trees (H. H. C.).—The growths before us are seriously infested with mildew. You had better try the effects of syringing with a solution of softsoap and sulphur, prepared by dissolving soft soap at the strength of 2 ozs. to a gallon of water and stirring in sulphur so as to form a thin cream-like mixture that can be applied with a syringe. We suspect the leaves were eaten by a small caterpillar just as they were unfolding, and the injury has become more apparent by the development of the foliage.

Peaches not Bearing (J. E. L.).—"Thinning out the growths well in October" is altogether too late for preventing overcrowding, and preparing fruitful wood for the following year. The present is the time to regulate the growths for preventing the great evil of overcrowding and consequently fruitless wood. The shoots should be so disposed that the leaves of one do not materially overlap and shade those of others. We often see the shoots laced in an inch or two apart. It is utterly wrong to work on this leaf-smothering principle. When trees are much crowded now superfluous growths should be removed by degrees, as taking out much growth at once checks the roots and the swelling of the crop where there is one. As you have no fruit do not permit the shoots on which you hope to have fruit next year to be closer than 6 inches from each other, a greater distance between them being advisable. Keep the leaves clean and healthy, and fruit buds will form freely.

The Ginger Beer and Vinegar Plants (W. H. W.).—Nothing definite is known about the Fungus called the Ginger Beer Plant. It is a cellular vegetable body similar to some other low forms of Fungi, such as the Yeast and Vinegar Plants, but apparently distinct from them. It is regarded as an immature form of some species which, when placed in the sugar and water mixture usually employed in the manufacture of ginger beer, is under unnatural conditions, and cannot develop its normal characters. It has been thought that ground ginger is beneficial to the growth of the Fungus, which then decomposes the sugar more rapidly. We believe several eminent fungologists are investigating its characters. It grows best in a rather warm place, and not exposed to too much light. The Vinegar Plant will form naturally if a mixture of sugar and water be placed in large jugs, covered with pieces of muslin, and stood in a place exposed to the sun.

Cornelian Cherry (B. R. T.).—The plant to which you refer under the above name is *Cornus mas*, a shrub which is found throughout the whole of Europe, with the exception of Great Britain. It is much cultivated on the Continent as a fruit shrub, for the sake of its berries, which are oval, about the size of a horse-bean, of a beautiful cornelian-red colour; when immature they are astringent, but when they are fully ripe, and particularly when they are allowed to hang till they fall from the tree, they are sweet, and may be eaten when raw, or preserved in the form of marmalade, like Cherries; in this form they are said to strengthen the stomach and to be very useful in cases of diarrhoea; but those subject to constipation should avoid them. They are much used by the Turks in their sherbets. The unripe fruit is also pickled with salt and vinegar and used as Olives, when they are said to have a pleasant taste and excite an appetite. The leaves have been used on the Continent as a substitute for tea, and those who have used the infusion say that it is very wholesome and agreeable. The wood is extremely hard, and is used on the Continent for wooden forks, which are made by selecting branches which divide into three near the extremity, and after cutting the branch to a proper length, which is commonly about 5 or 6 feet, the fork is taken off, and the three branches which are to form the prongs are bent so as to form a triangle, like the wooden corn forks of England;

they are then put into an oven and kept there until they are hardened. The wood is also used for butchers' skewers, hoops, and toothpicks.

Superphosphate of Lime (W. S. T.).—It is more useful as a manure than bones, because it is more soluble in water. If we bury a bone it will remain almost unaltered for years; but if we break it into small pieces it decays much sooner, and if put round the roots of Cabbages will soon make them grow more fine and vigorously. Cabbages, however, are not the only garden vegetables benefited by bone manure, for phosphate of lime is one of the most constant constituents of all plants. Of this phosphate, therefore, the soil is deprived by every crop it bears, and to restore this phosphate to the soil is an object with every cultivator. It was long since shown by chemists that phosphate of lime is the chief ingredient in all bones, and consequently these by degrees have become one of the most extensively used manures. In every 100 lbs. of sheep's bones there are 70 lbs. of phosphate of lime; in 100 lbs. of horses' bones sixty-eight of that phosphate; and in the same quantity of ox bones 55 lbs. As phosphate of lime is insoluble in water, and even bone dust is slow in decaying, it was suggested that by dissolving it in a strong acid, superphosphate of lime, a substance soluble in water, would be formed, and also all the other constituents of the bone be presented to the roots of the crop in a most available form. This process is said to have been first adopted by Mr. Fleming of Borrochan, N.B., in the year 1841. He employed muriatic acid (spirit of salt) to dissolve the bones, but it was subsequently found that sulphuric acid (oil of vitriol) was both cheaper and better.

Photographs of Leaves (B. R.).—The following process has been recommended for the purpose you name:—At any druggists get a little bichromate of potash. Put this in a 2-oz. bottle of soft water. When the solution becomes saturated—that is, the water has dissolved as it will, pour off some of the clear liquid into a shallow dish; on this float a piece of ordinary writing-paper till it is thoroughly and evenly moistened. Let it become nearly dry, in the dark. It should be of a bright yellow. On this put the leaf; under it a piece of soft black cloth and several sheets of paper. Put these between two pieces of glass (all the pieces should be of the same size), and fasten them all together tightly. Expose to a bright sun, placing the leaf so that the rays will fall upon it as nearly perpendicular as possible. In a few minutes it will begin to turn brown, but it requires from half an hour to several hours to produce a perfect print. When it has become dark enough, take it from the frame and put it in clear water, which must be changed every few minutes, till the yellow part becomes perfectly white. Sometimes the venation of the leaves will be quite distinct. By following these directions it is scarcely possible to fail, and a little practice will make perfect. The photographs, if well taken, are very pretty.

Names of Plants.—We only undertake to name species of plants, not varieties that have originated from seed and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in firm boxes. Slightly damp moss or soft green leaves form the best packing, dry cotton wool the worst. Not more than six specimens can be named at once. (*Carex*).—12, *Carex muricata* (Linn.); 13, *Carex vulgaris* (Fries.); 14, *Carex Stellulata* (Good); 15, *Carex vulgaris* (Fries).

COVENT GARDEN MARKET.—JUNE 30TH.

TRADE more brisk at last week's prices. Outdoor Strawberries making their appearance.

PLANTS IN POTS.

	s. d.	s. d.		s. d.	s. d.
Aralia Sieboldi .. dozen	9	0 to 18	Ficus elastica .. each	1	6 to 7
Arbor vite (golden) dozen	0	0	Fuchsia .. per dozen	6	0
„ (common) dozen	6	0	Foliage Plants, var. each	2	0
Arum Lilies .. dozen	0	0	Genistas .. dozen	0	0
Azaleas .. dozen	0	0	Hydrangea .. per dozen	6	0
Bedding Plants, var. doz.	1	0	Ivy Geraniums per dozen	3	0
Begonias .. dozen	6	0	Lilies of the Valley, in		
Calceolarias .. per dozen	4	0	„ pots, per doz.	0	0
Cineraria .. dozen	0	0	Lobelias .. per dozen	4	0
Cyclamen .. dozen	0	0	Marguerite Daisy dozen	8	0
Cyperus .. dozen	4	0	Mignonette .. per dozen	4	0
Dracena terminalis, dozen	30	0	Musk .. per dozen	2	0
„ viridis .. dozen	12	0	Myrtles .. dozen	6	0
Erica, various .. dozen	12	0	Palms, in var. .. each	26	0
Eunonymus, in var. dozen	6	0	Pelargoniums, scarlet, doz.	30	0
Evergreens, in var. dozen	6	0	Pelargoniums per dozen	6	0
Ferns, in variety .. dozen	4	0	Spiraea .. dozen	6	0

CUT FLOWERS.

	s. d.	s. d.		s. d.	s. d.
Abutilons .. 12 bunches	2	0 to 4	Marguerites .. 12 bunches	3	0
Anemone .. doz. bunches	0	0	Mignonette .. 12 bunches	3	0
Arum Lilies .. 12 blooms	4	0	Pelargoniums, per 12 trusses	0	9
Azalea .. 12 sprays	0	0	„ scarlet, 12 trusses	0	4
Bouvardia .. per bunch	0	6	Paeonies, various 12 b'oms	1	0
Camellias .. 12 blooms	0	0	Ranunculus .. 12 bunches	2	0
Carnations .. 12 blooms	1	0	Roses .. 12 bunches	4	0
Chrysanthemums 12 blooms	0	0	„ (indoor), per dozen	1	0
Cowslips .. doz. bunches	0	0	„ Tea .. dozen	0	9
Daffodils .. 12 bunches	0	0	„ red .. dozen	1	0
Epiphyllum .. doz. blooms	0	0	„ Moss .. 12 bunches	6	0
Encharis .. per dozen	4	0	Primroses, Yellow, dozen		
Gardenias .. 12 blooms	2	0	„ dozen bunches	0	0
Hellebore .. doz. blooms	0	0	Pyretbrum .. 12 bunches	4	0
Hyacinths, Roman, 12 sprays	0	0	Spiraea .. 12 sprays	2	0
Iris .. 12 bunches	3	0	Stephanotis .. 12 sprays	1	0
Lapageria, white, 12 blooms	0	0	Tropaeolum .. 12 bunches	1	0
Lapageria, red .. 12 blooms	1	0	Tuberose .. 12 blooms	0	6
Lilac .. per bunch	0	0	Violets .. 12 bunches	0	0
Lilium longiflorum, 12 blms.	3	0	„ Czar, Fr., .. bunch	0	0
Lily of the Valley, 12 sprays	0	0			

FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples .. 1 sieve	0	0 to 0	Oranges .. 100	4	0 to 6
Cobs, Kent .. per 100 lbs.	27	6	Peaches .. per doz.	4	0
Figs .. dozen	3	0	Pine Apples English .. lb.	2	0
Grapes .. lb.	1	6	Plums .. 1 sieve	0	0
Lemons .. case	10	0	St. Michael Pines .. each	4	0
Melon .. each	1	6	Strawberries .. per lb.	0	6

VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Artichokes .. dozen	1	0 to 0	Lettuce .. dozen	1	0 to 1
Asparagus .. bundle	2	0	Mushrooms .. punnet	0	6
Beans, Kidney .. lb.	0	6	Mustard and Cress punnet	0	2
Beet, Red .. dozen	1	0	Onions .. bunch	0	3
Broccoli .. bundle	0	0	Parsley .. dozen bunches	2	0
Brussels Sprouts .. 1 sieve	0	0	Parsnips .. dozen	1	0
Cabbage .. dozen	1	6	Potatoes .. cwt.	4	0
Capsicums .. 100	1	6	„ Kidney .. cwt.	4	0
Carrots .. bunch	0	6	Rhubarb .. bundle	0	2
Cauliflowers .. dozen	4	0	Salsafy .. bundle	1	0
Celery .. bundle	1	6	Scorzonera .. bundle	1	6
Coleworts .. doz. bunches	2	0	Seakale .. per basket	0	0
Cucumbers .. each	0	3	Shallots .. lb.	0	3
Endive .. dozen	1	0	Spinach .. bushel	3	0
Herbs .. bunch	0	2	Tomatoes .. lb.	0	8
Leeks .. bunch	0	3	Turnips .. bunch	0	4



LESSONS OF THE SEASONS.

If instead of the title of this paper we had followed our first thought and written Drainage at the head of it, would not such an indication of our subject have seemed unreasonable and therefore unattractive just now? Sure enough is it that we cannot do drainage now, but we can and do mark the effect of recent drainage, and realise fully its importance better than at any other season of the year. We know it is patent to everybody that drains relieve the soil of superfluous water, and science teaches us that in doing this we literally make "the clouds drop fatness," every shower that falls doing much more than cleanse and refresh growing crops. Most anxious are we that our readers should realise this fully, and keep well abreast of sound scientific research, especially that which has been subjected to the test of practical application.

In watching the progress of farm crops this season we have been strongly impressed with the value of drains. Repeatedly have we shown in the Journal that the application of manure to undrained land is a wasteful proceeding, an outcome of ignorance, and folly which we regard with regret, and we must add with surprise. Is it possible that any thoughtful farmer can look over his growing crops and not try and understand why some are vigorous, some weakly? If farmers only would cease to talk of soil as strong or weak in the same way as they do of an animal, and would regard it as a medium for conveying food to plants, then we might hope that the minds of such men would be open to lessons which the seasons so often bring to them in vain. Only a day or two ago we were going over a heavy land farm which we have in hand, and part of which was drained last winter. The drains were put in rather closely we thought, as they were only 8 yards apart, yet we find that 6 yards would have been better, for immediately over each drain the corn is twice as vigorous as it is midway between the drains. Nothing can be plainer—no lesson easier to learn, and we shall certainly apply its teaching to future practice. That such vigorous growth over the drains is no mere accident is well known to those who understand the science of drainage, and we hope to enforce the lesson by a quotation from a high authority, Professor Scott, who shows, in "Farm Engineering," that—

"When there is an excess of water in soil, and no provision exists for withdrawing it, the interstitial canals become completely filled to the exclusion of the necessary amount of air, on which the activity of the soil considered as a laboratory for the production of plant food depends.

"When the soil is under-drained the superfluous water flows off through the air canals, and only so much moisture is retained as can be absorbed by the minuter pores of the soil, and as there is then free communication through the canals between the pores and the drains, it is evident that the water will all be withheld from the soil except that which

is held by capillary attraction. Thus the rain which falls upon and is absorbed by the surface ground, percolates towards the drainage level, flushing every crevice and canal in its descent, leaving behind it the nutritive ingredients which it carries in suspension or in solution, and on which the plants can feed as it passes by their roots, or which the soil, acting as a filter, extracts and appropriates.

"According to Way, the total quantity of nitrogen, in the form of ammonia and nitric acid, brought down by rain and snow upon an acre of land in the year, was found to be 6.63 lbs. in 1855, and 8.31 lbs. in 1856. Under-drainage not only allows the rainfall loaded with this fertility to pass through the soil and be discharged from underneath, after depositing its fertilising material, instead of flooding the surface and removing from the upper soil many substances useful to vegetation; but the rain water in sinking down through the soil oxidises and washes out of it anything that may be hurtful to the roots of plants, and the solvent action of the rain water is, at the same time, brought to bear upon the inert constituents of the soil and of the manures with which it is brought into contact. The latter is not the least benefit of drainage, for on wet land the best manures are almost thrown away.

"This constant descent of water through the soil causes a similar descent of air through its pores, from the surface to the depth of the drain. When the rain falls it enters the soil and more or less completely displaces the air which it contained within its pores. Thus air either descends to the drains or rises into the atmosphere. When the rain ceases, the water as it sinks again leaves the pores of the upper soil open, and fresh air consequently follows. Thus, where under-drains exist, not only does every shower deposit its fertilising ammonia, but it serves to force the fresh air through the pores, which produces conditions so healthful to vegetation.

"Under-drainage deepens the soil by lowering the line of excessive water beyond injury to the roots, and affords to plants a deeper soil for their roots to penetrate, at the rate of 100 tons per acre for every inch of depth gained. It prepares the way for deep tillage and steam cultivation. It improves the texture of the soil by making it more porous, drier, looser, and more friable, and it thus not only gives greater ease in tillage operations, but admits of the land being worked sooner after a fall of rain. The difference in labour between ploughing drained and undrained land is very considerable, and at the lowest estimate cannot be put at less than 1s. per acre for each ploughing.

"Thorough drainage not only relieves soil of excess of water, but, strange as it at first appears, it greatly mitigates the effects of dry weather. When soil is drenched with water and dried by evaporation, it becomes hard, especially if it be of a clayey nature. Land that is dried by drainage is absorbent and retentive of moisture dropped by dews and acquired from the atmosphere, while the soil deepened by drainage permits growing crops to put forth longer roots, and thus become secured against droughts.

"By drainage the temperature of the soil is raised in summer as much as 3°, which is in effect to transport the land 150 miles southwards. The soil is thus enabled to grow a greater variety of crops than it would do in its undrained state. Less seed is required in sowing, because fewer seeds perish than when they are put into a saturated soil where the temperature is lower, and from which the air necessary to germination is excluded. It prevents in a great measure Grass and winter grains being killed or thrown out by frost. An earlier seed time and harvest are also accompaniments of drained land, the season being hastened in the spring by the land drying sooner, and enabling the cultivator to get on his land earlier by several days, a start which is maintained by the crop all through the summer. A week at seed time or harvest often makes all the difference between the success or failure of a crop.

"In all cases the end desired is the nearest possible approach

to the natural examples of the best soils resting on previous subsoils, where the rainfall finds a gradual passage through the soil and subsoil, sinking always where it falls, carrying generally the warmer temperature of the air into the land—carrying also many an element of plant food which the air contains directly to the roots of plants—carrying, too, the air itself, the great oxidiser, amidst the matters, organic and inorganic, which require its influence for their conversion into available plant food, proving, by its action as a solvent, and its passage over the immense inner superficies of the soil, an active caterer for the stationary roots. At the same time it is hindered from doing the mischief which on undrained land the rainfall cannot fail of doing. The manure particles of the soil, if they do to some extent escape through the drainage, are at any rate not washed wholesale from the surface into the furrows, ditches which, in the case of undrained land, receive them without the subsoil having had a chance of retaining them."

WORK ON THE HOME FARM.

Haymaking is now being done, and so far the work has gone on with expedition, for the weather has been favourable, though somewhat dull. We began with a heavy crop of mixed Grasses and Clovers upon a young pasture; and although the Red Clover, Cocksfoot, Timothy, and Fescues were very tall and stout, we were able to begin carting the hay upon the fifth day. The heavy bulk of hay which a thriving young pasture yields affords pleasing proof of the wisdom of the careful selection of seed and of high culture. No doubt the hay from it is often coarse in texture, but it is quite as nutritious as that from finer Grasses, and it is certainly more profitable. By way of experiment we folded sheep upon the whole of this meadow last autumn, and in February we gave part of it a dressing of our home-mixed artificial manure. The result was remarkable, the effect of the artificial manure being seen in the pleasing guise of a heavy crop of grass of more than twice the bulk of that which had only sheep manure. Our care in having the mowing machine thoroughly examined and put into good working order before the haymaking began is well rewarded now, for it has gone on day after day from 6 A.M. till 8 P.M. with only the necessary stoppages for meals, for fresh horses, fresh knives, and oiling the bearings. We use well-bred, quick-stepping Suffolk horses for this work, and they are very satisfactory, moving so quickly, yet steadily, that we prefer them to any other kind of horses we have tried. A man is kept constantly at work sharpening knives, and we have three sets of knives for each machine, always changing them before the knives become at all blunt, in order that the work may be well and easily done. The tedding machine or hay-shaker, as it is called in Suffolk, follows the mower closely. In a few hours come the hand rakes drawing the grass into small wind rows, and then if the weather is favourable the tedding machine and horse rakes do the rest of the work of actual haymaking. Red Clover and the mixed layers of alternate husbandry have also been mown for stover. White Clover is in full flower, and is so full of promise that we shall save the whole for seed, a good crop of Clover seed being still a profitable crop.

The Flock.—The last batches of hoggets are being sent to market in prime condition. We have also begun selling lambs, our first lot selling for 31s. 6d. each. They were nice compact lambs, the result of a cross between half-bred Suffolk ewes and pure Hampshire Down tups. The result of this cross-breeding is so satisfactory that we shall continue it next season. The old ewes withdrawn from the breeding flock will now go either upon grass or be folded upon green crops on arable land, to be gradually fattened for market, and at the same time impart fertility to the land. To do this well we must have folds and not suffer the sheep to wander at will.

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude, 111 feet.

DATE.	9 A.M.					IN THE DAY.					Rain
	Baromet- ter at 324 and Sea Level	Hygrome- ter.		Direction of Wind.	Temp. of Soil at 1 foot.	Shade Tem- perature.		Radiation Temperature.			
		Dry.	Wet.			Max.	Min.	In sun.	On grass		
1886.											
June.											
	Inches.	deg.	deg.		deg.	deg.	deg.	deg.	deg.	In.	
Sunday	20 29.961	61.0	53.9	N.W.	55.7	65.6	47.7	110.4	46.4	—	
Monday	21 30.079	50.3	47.7	N.	56.3	60.4	45.8	87.3	42.3	—	
Tuesday	22 29.942	56.9	52.3	N.W.	55.8	67.2	49.9	116.7	45.8	—	0.040
Wednesday ..	23 29.766	61.8	54.8	W.	56.2	69.8	52.3	119.6	47.8	—	
Thursday	24 30.014	60.1	51.6	N.	56.8	73.2	46.5	122.3	40.9	—	
Friday	25 30.007	65.1	55.8	S.W.	58.3	73.6	50.6	119.9	46.4	—	
Saturday	26 30.054	63.2	56.3	N.	59.2	77.1	52.8	115.8	46.1	—	
	29.975	59.8	53.2		56.9	69.6	49.4	113.1	45.2	0.040	

REMARKS.

20th.—Fine and warm.
21st.—Dull and cold.
22nd.—Fair, with a little sun about midday; rain in evening and night.
23rd.—Lovely summer day, but with occasional black clouds.
24th.—Beautiful summer day.
25th.—Very fine.
26th.—Fine, but with many clouds till night.
A fine week, with temperature near, but rather below, the average.—G. J. SYMONS.



COMING EVENTS

8	TH	
9	F	Hereford and Maidstone Rose Shows.
10	S	
11	SUN	3RD SUNDAY AFTER TRINITY.
12	M	
13	TU	Royal Horticultural Society Committees at 11 A.M. Fruit Show.
14	W	Bedford, Hull, and Bristol Shows.

THE DAY BEFORE THE NATIONAL ROSE SHOW NINETEEN YEARS AGO.

BEFORE these words are in print the "Grand National" at South Kensington will be over, and your correspondent a disappointed exhibitor, at least unless the Jupiter Pluvius favours him within the next twenty-four hours. However, my object in sending to the Journal an epitome of the preparations considered in 1861 necessary for a successful venture at the National Show is that it may prove at any rate interesting, not to say amusing, to our 1880-86 Rose giants. I write not this in disparagement of the Rose exhibitors of 1860, especially of the late Parson Radclyffe, then of Rushton, afterwards of Okeford-Fitzpaine (who in this article is my informant), as to the manners and customs rendered necessary by the conditions of the times, but simply to show the "development" in Roses, their culture, and the advantages of modern railway science. First, with regard to setting up Roses, what does our friend "D., Deal's" dear late friend say?

"Moss, though it is the best thing to convey Roses upon, is nevertheless objectionable, as it enables persons to set off a worthless Rose, and to support a Rose that is in a state of flaccidity, and which, being out of condition, should not be shown. Roses that are good need not the aids and supports of foreign substances, and you may truly say of them, as of beauty, that 'when unadorned they are adorned the most.' My plan is to damp the moss, and press it flat with my hand, and if a Rose placed on it does not look well I replace it with another, but I never 'prop.' I saw the following plan adopted at a country show a few years back. The Roses were placed in two tiers, on a white-painted stand, in white glass bottles filled with water. I never saw Roses look better; I could see the stems through the water. The Roses were as perfect as I ever saw show Roses, they were General Jacqueminot, Caroline de Sansal, Jules Margottin, Lamarque, Comte de Nanteuil, and Malmaison. They justly won the first prize."

Now compare this six with Alfred Colomb, La France, A. K. Williams, Louis Van Houte, Maréchal Niel, and any other in the National Society's catalogue of exhibition Roses.

As regards the late Mr. Radclyffe's second point, "Handicapping," I am quite with him, for those of us who are forced to cut twenty-four hours or more before our Roses come before the eyes of the judges cannot compete on equal terms with the forty-mile-radius-of-London rosarians. Certainly we have our "Provincial" National, but this very often, in fact more than often, is, as regards facility of access, not to speak of mileage, less convenient than London. However, we do not grumble, we but admire the wonderful freshness of the Roses that have been declared to be better than ours, and go home three pounds out of pocket, but satisfied that if only the show had been held anywhere within twenty miles of our domicile, Reigate, Havering-atte-Bower, &c., would (*very likely*) have played "second fiddle."

Now, Mr. Radclyffe said, "It is ridiculous to suppose that persons living in Cornwall or Northumberland" (he didn't anticipate the advent of Durham, Whitwells) "can bring Roses to the exhibition in as good condition as persons living in the counties contiguous to London. Travelling is expensive, and any fair indulgence that would induce far-distant rosarians to compete would, of course, greatly advance the Rose cause *nationally*. The grand obstacles are, I fear, the expenses, and the hopelessness of snatching a prize from the good people of Edmonton and Tooting. As I am only 107 miles distant from London, I ask no favour. My Roses are cut from 5 to 6 o'clock P.M., the box lies open to catch what dew may fall till 9 o'clock, and, being travelled in the night, they have nothing to complain of. Indeed, they will be in better condition for show than if they are cut in the morning, full of water with the night's dew, which is always heavy in proportion to the excessive heat of the day."

Thus is my plea for a handicap "settled," for I am just 120 miles from London, and we travel faster now; but I am rather doubtful as to the value of the worthy writer's argument. Though I can hardly call myself an exhibitor, I have neither the time nor the means for this. Perhaps in future years when the sharp eyes and nimble fingers of my four youngest children and the strong arms of my four eldest can the former be brought forward to attack grubs, aphids, mildew, and the latter to apply the necessary horticultural champagne—then, but not before, shall I stand a chance against many "whose eyes I should like to wipe."

But let me give my fellow exhibitors a wrinkle dated twenty years ago. My advice is too late for South Kensington, perhaps it may be in time for Birmingham. We are supposed to be living in *the day before the National*:—"If the weather is hot and dry a dairy is a good place to keep the cut Roses in; if hot but cloudy place them in bottles under a shady tree, with a sheet over their heads; if hot and misty (the elements of maturity and also of dissolution) you will be much tried. The best place is a room with a fire in it, and the door and window left open to let the heated damp escape. The cover of your box should not be painted, as paint attracts heat. In all cases you should have a wet cloth over it." [Our Hon. Sec., Mr. Mawley, I have noticed has practised this.] "*Your expanded Roses should be put as near the engine or centre of the train as you can get them, and your unexpanded ones as near the tail of the train as you can, as the vibration and oscillation, which are greater there than elsewhere, will probably cause them to expand, and these will be your best Ros s.*"

The italics in the previous sentence are mine, and are meant as a compliment to modern railway engineering science.

I think your rosarian readers will perceive that we have advanced during the past twenty years, and that the Committee of the National Rose Society constitutes all the best and none of the bad elements of a caucus. For the advice and not the absolute commands of our good Society have brought the cultivation of Roses and the beauty of rosarian friendship as it exists among its members to its present high standard. At least such is the opinion of—J. A. W., Alderminster.

SHADING AND WATERING.

The weather at the time of writing is extremely exhaustive to vegetation—parching days and nearly dewless nights being very trying to various plants and crops. It is scarcely possible to afford the requisite supply of water to meet the great demands of evaporation either in the case of plants outdoors or under glass, and the consequence is drooping of the foliage leading to scorching. Not a few cultivators have a strong and deep-rooted objection to shading even Cucumbers and Melons, not to say Vines and Peach trees. Everything that can be done in the form of early and efficient ventilation and copious supplies of water should

be done in preventing a collapse of the foliage, yet when this routine fails it is better to afford artificial shade to anything than to allow leaves, flowers, or fruit to be injured. A sheet of tiffany, a single or double covering of netting, or a skiff of whitewash applied to glass through a syringe, may be of great benefit in hot weather. Water must be given to thirsty plants and trees very copiously, and especially towards evening, for the fortification of their growths during the night, to be supplemented by further supplies very early in the morning as may be deemed advisable; and when a doubt exists as to whether it would be prudent to give or withhold water it will usually be safe to cast it in favour of giving during cloudless weather in July. But when water applied fails in the desired object it cannot be wrong to prevent the escape of moisture from the leaves of such plants, no matter what they are, that would suffer by its loss, and this can be effected by a reasonable amount of shading when it is needed, and it should only be given then; it is needless shading that is injurious.—*EXPERIENTIA DOCET.*

THE IXORA.

IXORAS do not receive too much attention in the press, neither are they so extensively cultivated as might be expected when we take into consideration the many good qualities they possess. They are free in growth, extremely floriferous even in a small state, and present in the many different varieties a charming diversity of colour—qualifications which, together with the fact that they may be had in bloom throughout the greater portion of the year, must always cause them to be ranked amongst our very best stove plants; indeed it is questionable whether any other genus could be found in every way so useful and beautiful as *Ixoras*.

Their cultivation is not difficult provided a sufficiently high temperature can be given them. This, however, is indispensable if the strong healthy growth and rich glossy leaves that render them so attractive, even when not in flower, are desired. During the summer months a temperature ranging from 70° to 78° at night and from 80° to 85° by day, rising to 95° with sun, suits them admirably; and in winter it should not be lower than 60° at night with a rise of from 5° to 10° in the daytime. The temperature I have mentioned for winter is meant for such plants as have attained a moderate size, and are flowered some time during the summer and rested in winter. For young plants that it is desired to keep growing freely, and for such as are wanted to bloom at that time, it must be from 5° to 10° higher.

Propagation is best effected by means of cuttings, and almost any portion of young or half-ripened growth will root; but the strongest shoots should always be selected, as they make better growth at the commencement, and consequently attain a good size much sooner than weak ones. Insert them singly in small pots filled with peat and silver sand in equal parts, cover with a bellglass or handlight, shade from bright sunshine, and keep them in a temperature of from 70° to 80° until they are rooted. This will be in about three weeks, and they should then be removed from under the handlight and placed on a shelf as close to the glass as possible. When the pots are moderately filled with roots shift them into others an inch larger. The soil to be used at this and all subsequent pottings should consist of fibrous peat and good turfy loam in equal parts, adding plenty of sand to keep the whole porous. In the absence of turfy loam they may be potted in peat, and it is better to do so than to use loam which is not really good, otherwise with the moisture these plants require when growing the whole mass of soil becomes sour and unfit for the roots to feed upon. Do not allow them to become very much root-bound during the earliest stages of their growth, but as often as they require it shift them into pots 2 inches larger, and as it is best not to let them flower the first year or two if it is desired to grow them quickly into good specimens—the shoots should be regularly stopped when they have made three or four pairs of leaves.

To keep the plants well furnished with leaves to the rim of the pot the strongest shoots must be tied out in a horizontal position as low as possible, for if allowed to grow at will they assume a too erect habit of growth and soon become bare at the bottom and entirely unfit for exhibition, for which purpose when well grown and flowered they are unsurpassed. For general decorative purposes also, dwarf bushy plants with a profusion of trusses are far preferable to tall lanky ones with only a few heads of bloom at top. In many cases small-sized plants are most useful for decorating, and where such are required stopping must be discontinued when they have attained the requisite size, and with a little atten-

tion at first in observing the length of time the varieties take after stopping before they open their flowers they may be had in bloom at any particular time desired.

It would be impossible to state the exact time necessary to allow them after stopping before they are wanted in bloom, because this necessarily varies considerably under different circumstances and in different houses, so that a knowledge of it can only be gained by careful observation under existing circumstances. Some take a much longer time than others—for instance, a plant of *I. Williamsi* grown in the above-mentioned temperature I have seen exhibited in splendid condition twelve weeks after all its shoots were stopped; *Prince of Orange*, *Colei*, *Fraseri*, and *Reginae* take fourteen or fifteen weeks; *Coccinea* still longer, whilst *Duffii* requires to be started early in January to get it to flower in July, and from the time of starting the shoots must be allowed to grow unchecked. This species is a more vigorous grower than any other I am acquainted with, and does not produce its trusses so freely as most of the *Ixoras*, but a plant of it some 5 feet in height and so much through, bearing a score or more of its magnificent trusses of deep red flowers, many of them 10 to 14 inches across, and clothed to the bottom with its large deep green leaves, can scarcely be beaten by any other stove-flowering plant when placed upon the exhibition table. I am not drawing upon my imagination in describing such a plant as this, for I have seen one in every respect equal to what I have stated (the number of trusses, I believe, was twenty-three), and it was the admiration of all who saw it exhibited.

When growing freely *Ixoras* delight in a plentiful supply of water at the roots, and being gross feeders liquid manure should be freely given them as soon as they get slightly pot-bound. Every alternate watering is not too often to apply it, and in addition to this, as soon as the trusses of blooms are visible a top-dressing with some artificial fertiliser may be given once a fortnight with very beneficial results. When the flowers begin to open, their colour and texture will be greatly improved by removing the plants to an intermediate house where more air is admitted and a drier atmosphere maintained, and if when fully opened they are placed in a cool house and kept shaded the flowers will retain their freshness and beauty for three or four weeks in the hottest part of the summer.

Of insects mealy bug and scale are most to be feared, for although thrips and aphides are also partial to *Ixoras*, they may soon be disposed of by fumigating. Mealy bug is generally the most troublesome, and great care should be taken to get the plants clean before the flowers appear, otherwise this pest will soon lodge in the trusses, and once established there it is almost impossible to get rid of them. The winter months when the plants are resting is the best time to attend to the cleansing of them, as they will then bear repeated applications of petroleum at the rate of two wineglassfuls to 3 gallons of water without injury. In the summer not more than half the quantity of petroleum—one wineglassful to 3 gallons of water—should be used, for the young and tender foliage naturally will not bear so strong an application as that which is fully matured and hardened. Even when only this quantity is used it is best to wash the plants well with clean water shortly after, and keep them shaded from hot sun for a few days.

There are many varieties of *Ixoras* in cultivation, but the following are all good and thoroughly reliable sorts, and will be found sufficient for most collections:—*Amboynensis*, *coccinea*, *Colei*, *Duffii*, *Fraseri*, *javanica*, *Pilgrimi*, *Prince of Orange*, *Reginae*, *salicifolia*, *Westi*, and *Williamsi*.—C. L. P.

STRAWBERRY PLANTS AFTER FORCING.

"A GARDENER," page 492 last v.l., has rightly called our attention to this matter, and there is not the least doubt that they harbour red spider more than anything else if left standing about in a dry and exhausted condition. Unfortunately where several thousands are grown they are not very easily cleared away when turned out of the houses, as this occurs when the press of work is greater than at any other time during the whole season.

Where the time can be spared to plant them out properly they will repay any extra attention when another season comes, and if they have been forced early and fruited in March I have known a good crop gathered from them in the autumn of the same season, and another the following spring. In order to secure this result, however, no half measures will avail. They must not be put out from a temperature of 60° into a keen N.E. March wind, and then allowed to take their chance for a month or two, and get water as best they can. They will survive such treatment as this, but are then most certainly useless, or not by any means so good for planting as young plants are. To ensure success they should be hardened in a cold frame, and then planted out on ground that has been well worked and manured previously, and one great point is not to disturb the roots, but to ram the soil firmly around them. If dry weather follows they should be mulched and watered accordingly until they show by their growth that they are able to take care of themselves. Thus treated they will bear quite double the quantity of fruit the following season that

would be obtained from young plants put out in August with scarcely any more trouble, and only occupy the ground three or four months longer; and in addition to this, as said before, if they were forced early they will fruit well again in the autumn of the same season four or five months after planting. As regards obtaining runners from them the season they are forced, the sorts I have tried are of no use whatever even if the runners are left on them which they make in the houses. These never give satisfaction like those obtained from vigorous plants in the open ground.—W. H. DIVERS, *Ketton Hall*.

LESCHENAULTIA BILOBA MAJOR.

NEW HOLLAND plants are not much in favour with cultivators at the present time, and many species that possess far more than ordinary attractions have been allowed to gradually disappear from gardens until they are almost lost. When popular taste changes nurserymen cannot long afford to pay attention to plants, however beautiful they may be, if they do not command a ready sale. So it is that the softwooded quickly grown plants have in many establishments quite superseded the numerous natives of the Australian continent which delighted horticulturists twenty or thirty years ago. Plant-lovers are, however, beginning to



Fig. 4.—*Leschenaultia biloba major*.

turn their attention once more to some of the old favourites, and many collections would be greatly enriched both in beauty and interest by the addition of a few hardwooded plants. If they require more care to ensure success the cultivator is well repaid for his efforts, and the strict attention absolutely necessary is an excellent training for any young gardener, as the modern demand for rapidity in everything is apt to produce slovenliness in practical matters that would not have been tolerated in gardens in past years.

A long list could be made of the plants that are worthy of re-introduction to gardens generally, but for the present we only wish to call special attention to the beautiful blue *Leschenaultia*, of which a spray is represented in fig. 4. The species has been known for over forty years, and was at one time frequently seen at shows where classes were provided for New Holland plants. Of late it has, however, been greatly neglected, and almost the only exhibitor has been Mr. W. Balchin of Brighton, who has on several occasions showed groups of small plants that were greatly admired. A few small specimens at the Royal Botanic Society's second summer Show last month were particularly handsome, and from one of these our sketch was prepared. *L. formosa* is distinguished by the brilliant scarlet hue of its flowers, but *L. biloba* and the variety *major* have

much larger flowers, and of an exquisite blue tint that is always appreciated because so scarce.

The plants succeed best in peat and sand with abundant drainage, and they require the temperature of a greenhouse. The greatest care is needed in supplying the plants with water, and they should have a position on a shelf close to the glass, free exposure to light being important.



THE ROYAL BOTANIC SOCIETY'S EVENING FETE, which was held on June 30th, proved very successful, upwards of 8000 visitors attending. It was one of the most satisfactory gatherings the Society has held, and the weather continuing fine induced them to hold another on Wednesday, the 7th inst., which was also well attended.

— A CORRESPONDENT writes in reference to LAXTON'S STRAWBERRY NOBLE as follows:—"It is a magnificent variety; as early as Black Prince and larger than any variety with which we are acquainted. The fruits are well formed, beautifully coloured, and highly attractive. A large dish of fruits was shown at Liverpool, as well as a trayful of clusters as cut from the plants to show the free fruiting character of the variety, and in both instances nothing could be more satisfactory. It thoroughly deserved the certificate awarded, and we congratulate Mr. Laxton on what may well be termed the crowning of Strawberry raising."

— A CORRESPONDENT sends us schedules of the DARLASTON AND BILSTON SHOWS, the former to be held on August 9th, and the latter on August 17th, and observes: "It is astonishing to observe the interest that is taken in horticulture in the Black Country, and wonderful to see what pitmen and others do on the sides of coal pits, and in patches reclaimed from what looks to be impossible conditions as to cultivation."

— ARRANGEMENTS have been made for the examination in the Indian Court of the Colonial and Indian Exhibition of certain COMMERCIAL PRODUCTS, which are believed to be insufficiently known or to be suitable for new purposes. Among the substances which will be examined are fibres, silk and silk substitutes, drugs, tobacco, gums and resins, minerals, oils, oil-seeds and perfumery, dyes, mordants and pigments, timbers, tanning materials and leather, and food stuffs. Any visitors to the Exhibition who are interested in the subject will be permitted to attend these examinations of products, which will take place in the Commercial Room, attached to the Economic Court, where all further information may be obtained. Should the results of this examination render such a course desirable, conferences of a formal character will probably be held at a later date.

— MESSRS. ANT. ROOZEN & SON of Haarlem have sent us specimens of some new DOUBLE ENGLISH IRISES, which to those who admire double flowers will be of some interest, though for ourselves we prefer the single. The doubling consists in the repetition of the series of the petals, or standards as they are popularly called. The colours are very beautiful, and of those which we think the most choice in this respect we note Miss Wilding, a lovely blue blotched with darker blue; Penelope, white flaked and blotched with lilac; Wilhelm, a fine purple; Emperor, white flaked and mottled with delicate lilac; Gertrude, white flaked with reddish lilac. Crown Prince is very much in the way of Miss Wilding, as also is Duke of Cornwall. Olympia is in the way of Penelope; Leo XIII. is pale lavender streaked and blotched with dark lilac; Jeanette is white flaked with magenta; Formosa has lavender falls and dark lilac standards; and all are beautiful.

— AMONG the leading prizes offered at THE STOKE-UPON-TRENT SHOW, which will be held on August 26th, are two Veitch Memorial medals, one for a group of flowering and foliage plants arranged for effect in a space of 150 square feet; the other for a group of Orchids intermixed with Ferns in a space of 40 square feet. Money prizes of £5 accompany the medals. Mr. F. W. Pepper, 117, London Road, is the Secretary of the Society.

— THE great YORK GALA AND HORTICULTURAL EXHIBITION recently held has been successful in a pecuniary point of view, although the receipts have been rather below the two preceding years. The following are the figures on this occasion—First day, £260 4s.; second day, £788 3s. 10d.; third day, £321 9s. 10d.; total, £1369 17s. 8d. Last year the receipts were £1400 1s. 5d.; in 1884, £1400 11s. 1d. On the morning of the first day the weather was very threatening and a hurricane prevailed, which deterred many from visiting the Exhibition, and in these times of depressed trade the Committee are to be congratulated on their success.

— THE KNOWLE HILL STRAWBERRY GARDENS.—The celebrated Strawberry gardens at Knowle Hill, near Virginia Water, are now being visited by large numbers of persons, the fruit this year being very fine and in good condition. To show the amount of fruit that can be obtained at short notice, we have only to say that Mr. T. Sharpe, the proprietor, received an order, and carried it out, to supply 500 lbs. of best fruit to the Royal Holloway College on the occasion of the opening ceremony by her Majesty the Queen. The order was made up principally of Marguerite.—(*Surrey Advertiser*.)

— A CORRESPONDENT, "W. M.," desires to know where he can get a few plants of the Princess Frederick William Strawberry; he says he has tried several firms in London in vain.

— MR. G. W. CUMMINS favours us with the following notes:—"At that home for Cactuses, Cromwell House, Croydon, were to be seen on Saturday and Sunday evening two magnificent Night-bloomers, CEREUS MACDONALDIE first, and C. ROSTRATUS following, and although both are very beautiful the latter appears broader in the sepals and petals, and with greater substance. Mr. Major has several species of these night-flowering Cactuses growing on a moss arch, which is about 15 feet high, and 12 feet wide.

— "AMONG a host of other plants in the conservatory is a fine PLUMERIA SPECIES, white and yellow, sweetly scented, sent from Ceylon; and Gloxinia tubiflora, another very fragrant plant, Ismene varieties, and some good freely flowered specimens of Ivy-leaved Pelargoniums, the best being Emile Lemoine, Gloire d'Orleans, Jeanne d'Arc, La Rosière, and Madame Thibaut." [The Plumeria is P. bicolor, figured in the "Botanical Magazine," plate 480, and is, perhaps, as rare as it is delightfully fragrant; it was exhibited by Messrs. R. P. Ker and Son at Liverpool last year under the name of P. odoratissima and certificated.]

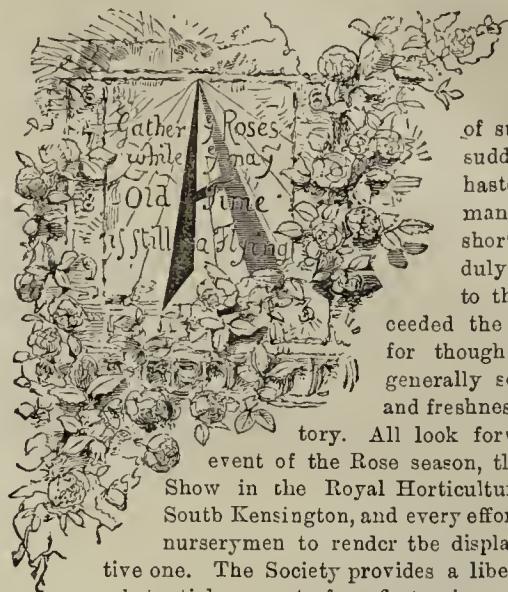
— THE ROYAL OXFORDSHIRE HORTICULTURAL SOCIETY'S SHOW.—There were six entries for the prizes offered by Messrs. Webb and Sons of Wordsley, Stourbridge, and the competition was keen, all vegetables being of first-class quality; and in addition to these their customers were fortunate in taking thirty-two first and second prizes in the open classes. Mr. Griffiths, the representative of the firm, had the honour of presenting Princess Christian with a copy of their illustrated catalogue, which she graciously accepted.—(*Jackson's Oxford Journal*, July 3rd, 1886)

— ACCORDING to a newspaper report that has been sent to us the Croydon Show, held on the 31st ult., was a very excellent one. In the nurserymen's classes for forty-eight Roses Messrs. B. R. Cant, F. Cant, and Paul & Son were the respective prizewinners. Mr. G. W. Piper won the chief prize for twenty-four blooms, followed by Messrs. Paul and Prince; and the prizes for Tea Roses were won by Messrs. Piper and Prince. In the amateurs' class for twenty-four Roses the prizes were won in the order named by Mr. Ridout, gardener to F. R. Haywood, Esq., Woodhatch Lodge, Reigate, Mr. Simmons, gardener to Rev. R. C. Hales' Woodmancote Rectory, Henfield, and Mr. A. Slaughter, Steyning. They were also successful in some other classes, as were Mr. R. E. West, Reigate, and Mr. Shoesmith, gardener to Canon Hodgson, Saltwood Rectory, Hythe. The National Rose Society's medal was won by Mr. Hales with a fine bloom of Charles Lefebvre as the best Rose in the Show. Mr. King, gardener to P. Crowley, Esq., Waddon, and Mr. Penfold, gardener to Canon Bridges, Beddington, secured most of the prizes in the plant classes.

— MR. CUMMINS sends us from Mr. A. H. Smec's collection of Orchids at Hackbridge a remarkably fine flower of CATTLEYA MOSSIAE, one of four from a plant grown in a 32-sized pot. The petals are $3\frac{1}{4}$ inches in diameter and $4\frac{3}{4}$ inches long, the lip proportionally large and richly coloured. It is undoubtedly a superior variety.

ROSE SHOWS.

THE NATIONAL ROSE SOCIETY.—JULY 6TH.



FIER an exceptionally long winter and a cold unseasonable spring the heat of summer has come upon us suddenly, and while it has hastened the development of many tardy Roses it is also shortening their duration unduly. Still, the shows held up to the present have rather exceeded the anticipations of rosarians,

for though the blooms have been generally somewhat small, in colour and freshness they were very satisfactory. All look forward with interest to the event of the Rose season, the National Society's great Show in the Royal Horticultural Society's Gardens at South Kensington, and every effort is made by amateurs and nurserymen to render the display a thoroughly representative one. The Society provides a liberal schedule with prizes of substantial amount, four first prizes of £5 each being offered with "Trophies," "Pieces of plate," a gold medal for a new seedling Rose, and silver medals for premier blooms of Hybrid Perpetual and Tea Roses. Everything is done to encourage competition, and it is pleasant to record a repetition of the success that has attended the Society's efforts in previous years.

It had been feared by some that the "National" Show would not be thoroughly representative owing to the unfavourable character of the season, but happily these fears proved to be unfounded, and much surprise was expressed both at the extent of the Exhibition and the quality of the blooms. The weather appears to have suited the light-coloured H.P. varieties and the Teas admirably, for of these numbers of handsome blooms were contributed, and throughout the classes the freshness and bright clear colours amply compensated for the smaller size or want of substance noticeable in some cases. It was remarked by one of the most experienced rosarians that he never remembered seeing the varieties so true to character as they are this season, and the observation was fully borne out by an examination of the blooms on the tables at Kensington, for every peculiarity of tint and form was present, and those familiar with the varieties experienced no difficulty in recognising them.

The competition was keen in all the leading classes, over a dozen stands being entered in several instances. All available space was occupied in the conservatory, six rows of boxes extending the whole length on tables at the sides and in the centre, the separating line on the central tables being formed with Palms, Ferns, and other suitable fine-foliage plants. At the end was a handsome group of English Irises from Mr. J. Walker of Whitton, and the extensive collection of hardy flowers from Mr. T. S. Ware also served to increase the beauty of the display. The nurserymen's Roses in competition were generally of good quality, but Mr. B. R. Cant was especially strong, and scored another success by winning the challenge trophy in the seventy-two variety class, with a collection which also contained the best H.P. and Tea blooms in the trade classes, securing the Society's silver medals in each case. Amateurs were well represented, the Rev. Joseph Pemberton proving successful in some of the chief classes, and the blooms from the majority were excellent. The baskets and wicker stands of Roses constituted an interesting feature, as did also the classes for collections of garden Roses, which comprised some beautiful old varieties.

The weather was extremely hot, and tried the blooms severely; indeed only those who had the opportunity of inspecting the Show immediately after the judging was completed could form an accurate idea of the respective merits of the stands in competition. Many exhibitors had, however, cut their blooms as young as possible, and these of course stood the trial the best.

By special request we have given the names of as many varieties in the first-prize stands as possible, but owing to the short time at our disposal we have been compelled to abbreviate the general remarks, and will give a critical *resumé* another week.

DIVISION A.—The first prize and challenge trophy in class 1 for seventy-two trusses, the leading class for nurserymen, was won by Mr. B. R. Cant, Colchester, whose blooms were of good size and very fresh. The varieties shown were as follows, the names being printed in the order the blooms were placed, from left to right:—Back row—Madame P. Laugier, Edouard Morren, Madame Lacharme, Boieldieu, Madame A. Jacquier, Lord Macaulay, Hippolyte Jamain, Magna Charta, Merveille de Lyon (a beautiful bloom), Emily Laxton, Marguerite de St. Amand, François Michelin, Marquise de Castellane, Etienne Levet, Niphotos, Alfred K. Williams, Lady Mary Fitzwilliam, Ulrich Brunner, La France, Sénateur Vaisse, Captain Christy, Général Jacqueminot, Souvenir d'Elise (magnificent), and Duke of Edinburgh. Middle row—Baronne de Rothschild, Sultan of Zanzibar, Ville de Lyon, Innocente Pirola, Dupuy Jamain, Madame Willermoz, Beauty of Waltham, Mlle. Marie Cointet, Marie Rady, La Boule d'Or, Edouard Hervé, Madame Bravy, Marie Baumann, Maréchal Niel, Prince Arthur, Heinrich Schultzeis, Auguste Neumann, Madame G. Luizet, Reynolds Hole, Miss Hassard, Dr. Sewell, Madame Marie Verdier, Le Havre and M. Noman. Front row—Fisher Holmes, Comtesse de Nadaillac, Duke of Connaught, Countess of Rosebery, Madame Cusin, Duke of Teck, Pride of Waltham (very fine), Annie Laxton, Hon. Miss E. Gifford, Xavier Olibo, Gloire de Vitry, Harrison Weir, Madame de Watteville, Horace Vernet, Duchesse de Morny,

Charles Lefebvre, Marie Van Houtte, Maurice Bernaroin, Madame C. Kuster, Duke of Wellington, Devonensis, Camille Bernardin, Souvenir d'un Ami, and Dr. Andry. The silver medals for the best Hybrid Perpetual and the best Tea or Noisette in the nurserymen's classes were both awarded to blooms in this stand, the former to Boieldieu, a large and beautifully fresh flower, and the latter to Souvenir d'Elise, a superb bloom. The second prize in the seventy-two class went to Mr. F. Cant of Colchester, for a moderately good collection: the blooms were somewhat small, and many lacked freshness, but Souvenir d'Elise, Baronne de Rothschild, Mrs. Jowitt, Madame Lacharme, and others were excellent. Messrs. Paul & Son, The Old Nurseries, Chesbunt, secured the third place, not far behind the second prizewinner; and Mr. Charles Turner, Royal Nurseries, Slough, was awarded the fourth prize. Four other collections were shown.

In class 2, for forty-eight varieties of three trusses each, Mr. B. R. Cant again took first honours, showing beautiful boxes. The following were the varieties:—Souvenir d'Elise, Duke of Wellington, Merveille de Lyon (very fine); Ferdinand de Lesseps, Duchesse de Vallombrosa, Boieldieu, Madame Lacharme, Prince Arthur, Capitaine Christy, Marie Baumann, Marguerite de St. Amand, and Countess of Rosebery. Second row—Mons. Noman, La Boule d'Or, Madame Cusin, Baronne de Rothschild (splendid); Fisher Holmes, Madame de Watteville, Comtesse d'Oxford, Violette Bouyer, Xavier Olibo, Souvenir d'un Ami, Charles Lefebvre, and Madame G. Luizet. Third row—Innocente Pirola, Prince Camille de Rohan, François Michelin, Dupuy Jamain, Lady Mary Fitzwilliam (a beautiful bloom); Dr. Sewell, Rubens, Ulrich Brunner, Niphetos, Horace Vernet, La France, and A. K. Williams. Front row—Duke of Edinburgh, Marie Van Houtte, La Havre, Etoile de Lyon, General Jacqueminot, Maréchal Niel, Emily Laxton, Davoniensis, Marquise de Castellane, Gloire Lyonnaise, Mrs. Baker, and Madame Marie Verdier. Mr. C. Turner was a good second, showing medium-sized but very bright and fresh blooms; La France, Maréchal Niel, Alfred Colomb, Marie Baumann, and Horace Vernet being particularly good. Third and fourth prizes were won respectively by Messrs. Paul & Son, Chesbunt, and Cranston's Nursery and Seed Company, King's Acre, Hereford, both showing well. Three other collections were in competition.

Seven collections of twenty-four Tea or Noisette varieties were staged in class 3, and they were greatly admired. Mr. G. Prince of Oxford was first, and his box was a most charming one, every bloom being good in size and form, and all were perfectly fresh. We append the names of the varieties:—Back row—Comtesse de Nadaillac, Alba Rosea, Marie Sisley, Anna Ollivier, Maréchal Niel, Niphetos, Souvenir d'un Ami, and Etoile de Lyon. Middle row—Souvenir de Paul Neyron, Madame C. Kuster, La Boule d'Or, Princess of Wales, Souvenir d'Elise, Madame Cusin, Hon. Edith Gifford, and La Princesse Vera. Front row—Jean Ducher, Marquis Saurina, Rubens, Reine du Portugal, Madame Willermoz, Amazone, Madame Hippolyte Jamain, and Marie Van Houtte. Excellent blooms of Souvenir d'Elise, Maréchal Niel, Niphetos, Devonensis, and Madame H. Jamain were conspicuous in the second prize box of Mr. F. Cant; and Mr. B. R. Cant received third prize for a meritorious collection, the fourth falling to Mr. Turner, whose flowers were a little past their best.

DIVISION B.—In the class for twenty-four distinct, three trusses of each, there were four exhibitors. Messrs. Curtis, Sanford & Co., Torquay, being first with fresh, bright, but not very large. The varieties were Prince Arthur, François Michelin, Duchesse de Vallombrosa, Annie Wood, Beauty of Waltham, Violette Bouyer, Magna Charta, Reynolds Hole, Horace Vernet, Marguerite de St. Amand, Merveille de Lyon, Dupuy Jamain, Marie Rady, Jean Ducher, Baroness Rothschild, Charles Lefebvre, Marie Baumann, Abel Grand, Madame Gabriel Luizet, Duke of Wellington, Alfred Dumesnil, Madame H. Jamain, Marie Verdier, and Lord Macaulay. These stands had a pretty appearance, there being a good proportion of dark and light varieties. Messrs. J. Jeffries & Son, Cirencester, were second, showing Annie Laxton, Lady Mary Fitzwilliam, Beauty of Waltham, Marie Verdier, Queen of Queens, and Mons. Noman very well. Messrs. G. Cooling & Son, Broad Street, Bath, were third with a good collection, and Messrs. J. Burrell and Co., Howe House Nurseries, Cambridge, were fourth.

Seven competitors entered with twenty-four single trusses. Mr. G. Mount, St. Dunstan's, Canterbury, was awarded first honours for a bright collection of medium sized blooms. The varieties were Marie Baumann, Baroness Rothschild, Lord Herbert, Souvenir d'un Ami, Le Havre, Caroline Kuster, Alfred Colomb, François Michelin, Lady Mary Fitzwilliam, Lord Macaulay, Violette Bouyer, Dr. Andry, Innocente Pirola, Duke of Edinburgh, Madame Gabriel Luizet, Capt. Christy, A. K. Williams, Maréchal Niel, Fisher Holmes, Marie Van Houtte, Madame Cusin, Louis Van Houtte, Souvenir de la Malmaison, Xavier Olibo. Messrs. Harkness & Sons, Bedale, Yorkshire were second, having Horace Vernet, Xavier Olibo, Merveille de Lyon, and John Hopper in capital condition. Mr. T. Bunyard, Ashford, Kent, secured the third prize for good blooms of the leading varieties—Star of Waltham, Alfred K. Williams, small but bright, and Marie Baumann, neat. Mr. J. Mattock, New Headington, Oxford, was fourth.

In Class 7, for eighteen Teas or Noisettes, Mr. J. Mattock, New Headington, Oxford, received the premier award for eighteen Tea or Noisette varieties, showing medium sized, but fresh, clear blooms of the following varieties:—Back row—Madame Berard, Niphetos, Maréchal Niel, Souvenir de Paul Neyron, Jean Ducher, and Devonensis. Middle row—Innocente Pirola, Marie Van Houtte, an unnamed bloom, Souvenir d'Elise, Madame Welch, and Souvenir d'un Ami. Front row—Catherine Mermet, La Boule d'Or, Comtesse de Nadaillac, Jean Pernet, Comtesse Riza du Parc, and Madame H. Jamain. Messrs. J. Burrell & Co., Howe House Nurseries, Cambridge, were easily second; Mr. G. Mount, St. Dunstan's, Canterbury, third with larger blooms, past their best, however; and Messrs. J. Jeffries & Son, Cirencester, fourth.

DIVISION C.—The challenge trophy for forty-eight Roses, single trusses, was won by the Rev. H. Pemberton, Havering, Romford, for a good collection, some of the blooms very fine, but others had evidently suffered in transit. The varieties shown were Captain Christy, Mlle. Marie Cointet, the Hon. Edith Gifford, Horace Vernet, Etienne Levet, Magna Charta, Innocente Pirola, A. K. Williams, very fine; Lady Mary Fitzwilliam, Annie Laxton, Madame Caroline Kuster, Mrs. Baker, La France, Beauty of Waltham, Princess of Wales, Madame Victor Verdier, Jean Ducher, Hippolyte Jamain, Niphetos, Marie Rady, Madame G. Luizet, François Michelin, Mary Quennell, Camille Bernardin, Souvenir d'Elise Vardon,

Dr. Andry, Comtesse d'Oxford, Countess of Rosebery, Baroness Rothschild, Etoile de Lyon, Mons. Noman, Duke of Wellington, Merveille de Lyon, Charles Lefebvre, Comtesse de Nadaillac, Louis Van Houtte, Marie Verdier, Harrison Weir, Devonensis, Dr. Andry, Marie Finger, William Warden, Madame Hippolyte Jamain, Alphonse Soupert, Bouquet d'Or, Marie Baumann, Duchesse de Vallombrosa, Annie Wood. The silver medal for the best Hybrid Perpetual was awarded for the bloom of A. K. Williams mentioned above. It was of grand substance, and excellent shape and colour. W. J. Grant, Esq., Hope End Farm, Ledbury, was second with a rather more irregular collection, but very fresh. J. D. Haywood, Esq., Woodhatch Lodge, Reigate (gardener, Mr. J. Ridout), was third, dark-coloured varieties predominating. S. P. Budd, Esq., 8, Gay Street, Bath, took the fourth place, there being eight competitors. In the first prize stand two blooms named Dr. Andry were shown, which was not observed until after the Judges had made their awards, when, according to the Society's rule, no question respecting duplicates can be considered.

Four stands of twenty-four single trusses were staged. The first prize stand from Earl of Stanhope, Steving (gardener, Mr. Gray), was remarkable for the number of bright varieties it contained, extremely fresh and handsome. They were as follows:—Countess of Rosebery, Louis Van Houtte, Mons. E. Y. Teas, Paul Jamain, Baronne Rothschild, Lady Mary Fitzwilliam, Horace Vernet, Marie Rady, Marie Baumann, Madame Gabriel Luizet, A. K. Williams, Penelope Mayo, Abel Carrière, La France, Comte Raimbaud, Alfred Colomb, Camille Bernardin, Duke of Wellington, Captain Christy, François Michelin, Ulrich Brunner, Etienne Levet, Maréchal Niel, Xavier Olibo. G. Christy, Esq., Buckhurst Lodge, Westerham, was second, E. M. Bethune, Esq., Denne Park, Horsham, Sussex (gardener, Mr. H. Harris), third, and Gurney Fowler Woodford, Esq., fourth.

For twelve distinct varieties, three trusses each, the Rev. Joseph Pemberton took the first prize with excellent blooms of Horace Vernet, Madame G. Luizet, Catherine Mermet, Beauty of Waltham, A. K. Williams, Mlle. Marie Cointet, Marquise de Castellane, Marie Baumann, Charles Lefebvre, Etoile de Lyon, Niphetos, and Countess of Rosebery. An equal first prize was awarded to W. J. Grant, Esq., Hope End Farm, Ledbury, for a beautiful even collection of blooms, comprising A. K. Williams, Marie Cointet, La France, Le Havre, General Jacqueminot, Marie Van Houtte, Madame Gabriel Luizet, Marie Rady, Horace Vernet, Anna Ollivier, François Michelin, and Beauty of Waltham, very fine. Mr. T. W. Girdlestone, Sunningdale, Berks, was third, showing A. K. Williams, very bright; and La France, good; a third prize was also awarded to T. B. Hall, Esq., Larch Wood, Rock Ferry. There were seven competitors.

The competition was very keen with eighteen Teas or Noisettes, seven collections being staged. The premier position was accorded to the Rev. Doctor E. G. King, Madingley Vicarage, Cambridge, for Maréchal Niel, Madame Lombard, Marie Van Houtte, Souvenir d'un Ami, Madame Hippolyte Jamain, Souvenir de Paul Neyron, Catherine Mermet, Anna Ollivier, Innocente Pirola, Sunset, Princess of Wales, Francisca Kruger, Souvenir d'Elise Vardon, a grand bloom for which the Society's silver medal for the best Tea or Noisette in the amateurs' classes was awarded; Adienne Christophle, Niphetos, Jean Ducher, David Pradel, and Caroline Kuster. The Rev. J. Pemberton was second with rather smaller blooms, and equal thirds were awarded to the Rev. Page Roberts, the Rectory, Scole, Norfolk, and E. M. Bethune, Esq.

DIVISION D.—Class 12 was for thirty-six distinct, single trusses, and this, the leading prize, was secured by A. J. Waterlow, Esq., Great Doods, Reigate (gardener, Mr. J. Brown), for a very beautiful stand of blooms, tastefully arranged, and the lights and darks well proportioned in numbers. Those shown were Caroline Kuster, Duke of Wellington, Madame Lacharme, Marie Rady, Jules Finger, Fisher Holmes, Comtesse de Serenye, Marquise de Castellane, Merveille de Lyon, Camille Bernardin, Duchesse de Vallombrosa, Abel Carrière, Madame G. Luizet, Etoile de Lyon, Mrs. Baker, Innocente Pirola, Comte de Raimbaud, Marguerite de St. Amand, Duke of Edinburgh, Capitaine Christy, Charles Darwin, Mons. Noman, Annie Wood, Madame H. Jamain, Eugene Furst, Duchess of Connaught, Reynolds Hole, Marie Cointet, Lord F. Cavendish, La France, Pride of Reigate, Catherine Mermet, A. K. Williams, Lady Mary Fitzwilliam, and Marie Baumann. Frederick Warde, Esq., West Farleigh, Maidstone, was a good second, but his blooms were not quite so fresh as the first; and Mr. J. Edward Mitchell, Corbetsay, Romford, was third. For eight triplets, A. J. Waterlow, Esq., was placed first with Merveille de Lyon, Marie Rady, Lady Mary Fitzwilliam, Camille Bernardin, La France, Eugene Furst, Etoile de Lyon, and Duke of Edinburgh, all of fine quality. Mr. E. B. Lindsell, Hitchin, was second, the Rev. E. H. Fellowes third, and F. Warde, Esq., fourth, four other exhibitors showing collections.

The class for eighteen distinct, single trusses, was a very full one, eleven entering. Mr. G. B. Lindsell was first with charming blooms of Marie Baumann, Captain Christy, Horace Vernet, Jean Ducher, Duke of Wellington, Caroline Kuster, Marie Rady, La France, Le Havre, Madame Gabriel Luizet, Prince Arthur, Baroness Rothschild, Xavier Olibo, Maréchal Niel, Lord Macaulay, Lady Mary Fitzwilliam, A. K. Williams, and Madame Lacharme. This was an excellent stand and was much admired. The Rev. C. Garnett, Christleton, Chester, was a close second with fine blooms, but with several rather small. Miss Baker, Holmfels, Reigate (gardener, Mr. Budgen), was a good third, and W. H. Wakeley, Esq., Mackland, Rainham, was fourth.

Eight stands of twelve Teas or Noisettes were entered. E. Claxton, Esq., The Rosery, Allerton, Liverpool, won first honours with medium sized, but fresh and clean, blooms of Niphetos, Comtesse de Nadaillac, Princess of Wales, David Pradel, Madame de Watteville, Madame Willermoz, Souvenir d'un Ami, Innocente Pirola, Jean Ducher, Madame H. Jamain, Madame Cusin, and Caroline Kuster. A. J. Waterlow, Esq., was second, showing Catherine Mermet, Alba Rosea, Rubens, and Souvenir d'un Ami, very fine. The Rev. C. Garnett was third, his Madame Cusin and Comtesse de Nadaillac being grand blooms of these varieties. Mr. G. B. Lindsell followed, having Souvenir d'Elise Vardon in capital condition.

DIVISION E.—In the eighteen single trusses class an excellent stand of bright fresh blooms gained premier honours for E. Mawley, Esq., Rosebank, Berkhamstead, with the following varieties—Charles Lefebvre, Marquise de Castellane, La France, Marguerite de St. Amand, Le Havre, Xavier Olibo, Comtesse d'Oxford, Souvenir de Paul Neyron, Duchesse de Vallombrosa,

Caroline Kuster, Innocente Pirola, Rubens, Horace Vernet, Marie Finger, Henri Ledechaux, Souvenir d'Elise Vardon, A. K. Williams, and Captain Christy. The second place was taken by W. H. Jackson, Esq., Stagsden Vicarage, Bedford, with neat blooms. Mr. W. Narroway, Haddington Quarry, Oxford, was third, and Lord Brooke, Easton Lodge, Duumow, Essex (gardener, Mr. H. Lister), was fourth, showing Ulrich Brunner and La France wonderfully fine.

Amongst eight exhibitors of twelve single trusses the Rev. Alan Cheales, Brockham Vicarage, Surrey, was awarded the first prize for handsome blooms of Marie Rady, Mons. Noman, Niphotos, Cbas. Lefebvre, Maréchal Niel, Peuloupe Mayo, A. K. Williams, very handsome; Capt. Christy, Etoile de Lyon, Marie Baumann, Star of Waltham, and Madame Lacharme. Mr. H. Foster, Ashford, Kent, was a capital second with very bright blooms. Fourth Mrs. Rothery, Windlesham, Bagshot (gardener, Mr. H. Godfrey). There was keen competition with nine single trusses, eleven entering. First Rev. H. B. Birou, Lymper Vicarage, Hythe, with substantial blooms of Marie Baumann, Marie Van Houtte, Gabriel Luizet, Capt. Christy, Marie Rady, Innocente Pirola, Violette Bouyer, and Boule d'Or, but with Duke of Edinburgh rather small. C. E. Cathell, Esq., Chapel Croft, Dorking, was a very close second, Marie Rady, Maréchal Niel, and Etienne Levat being very fine. Third Rev. Canon Hodgson, Saltwood Rectory, Hythe (gardener, Mr. Shoesmith). Fourth Mr. E. Home, Park House, Reigate. The Rev. Frank S. Taylor, Littleton Vicarage, Evesham, was the premier exhibitor of six varieties, showing Boieldieu, Maréchal Niel, Charles Lefebvre, Madame G. Luizet, Jean Ducher, and Marie Baumann. Mrs. Alice Mary Lucas, Wratten, Hitchin, was second, followed by J. H. Ashurst, Esq., Farningham, and Mr. J. Bateman, Highgate Road, in a class of nine competitors. There was a pretty display of Tea Roses in this class (for six varieties), fourteen exhibitors competing. The Rev. F. R. Burnside, Chipping Campden, Gloucestershire, was deservedly adjudged the first prize for handsome flowers of Maréchal Niel, La Boule d'Or, Madame Cusin, very fine; Souvenir d'Elise, Comtesse de Naidailac, and Etoile de Lyon. The Rev. Canon Hodgson secured the second prize with fresh flowers of Madame Bravy, Comtesse de Naidailac, Catherine Mermet, Madam Lombard, and Innocente Pirola; Mrs. Fuller, Bexley, being third, and Mr. J. Sladden, Badsey, Worcestershire, fourth.

EXTRA CLASSES.—The first of the extra classes was 21, which was for twelve Hybrid Perpetual and twelve Teas or Noisettes. The first prize fell to the Rev. R. C. Hales, Woodmancote Rectory, Henfield (Mr. Simmons, gardener). His blooms were very fine, the Teas being exceptionally large, but not perfectly fresh. The Hybrid Perpetuals were as follows:—Back row—Camille Bernardin, Beauty of Waltham, Marie Rady, Madame G. Luizet. Middle row—Violette Bouyer, a beautiful bloom; François Michelon, also very fine; R. Jacobs, and Ulrich Brunner. Front row—Duke of Teck, Alfred Colomb, Marie Baumann, and Annie Wood. Teas.—Back row—Perle des Jardins, Caroline Kuster, Jean Ducher, and Marie Van Houtte. Middle row—Madame Lombard, Souvenir de Thérèse Levat, Anna Olivier, and Madame Cusin. Front row—Catherine Mermet, very fine; Souvenir d'un Ami, Etoile de Lyon, and Madame Berard. The piece of plate presented by the Rev. H. A. Berners was awarded for this box. W. H. Jackson, Esq., Stagsden Vicarage, Bedford, was second, his flowers, though much smaller than the preceding, being very clean and fresh. Alba Rosea, Souvenir d'un Ami, and La France were well shown. The third prize went to W. J. Grant, Esq., Hope End Farm, Ledbury, both his Hybrid Perpetuals and Teas being of good average quality. Six other collections were staged, all being fresh, and altogether the class was an excellent one.

Class 22 was for a basket of blooms, and a charming one arranged by C. E. Cathell, Esq., Chapel Croft, West Humble, Dorking, secured the first prize, and the piece of plate presented by Messrs. Paul & Son of Cheshunt; E. Claxton, Esq., The Rosery, Allerton, Liverpool, was awarded the second prize for an almost equally attractive arrangement; and the third was adjudged to the Rev. John A. Williams, Alderminster Lodge, Stratford-on-Avon. Two others were in competition. Nine competitors tried conclusions in the class for twelve blooms, the Rev. Canon Hodgson, Saltwood Rectory, Hythe, Kent (gardener, Mr. Shoesmith), emerging victorious. Teas and Perpetuals were shown, excellent blooms of the following varieties being arranged:—Back row—François Michelon, Duchesse de Vallombrosa (a beautiful bloom) Avocat Du Vivier, and Captain Christy. Middle row—Madame H. Jamain, a charming flower, Innocente Pirola, Madame G. Luizet, and Comtesse de Naidailac. Front row—Hon. Edith Giffard A. K. Williams, Madame Lombard, and Niphotos. Mr. Grant was second with an excellent stand of large and fresh blooms. We failed to discover a third prize card. J. H. Ashurst, Esq., Farningham, took first prize in the class for six blooms, showing fresh, if somewhat small, specimens of Marie Rady, Anguste Neumann, Etienne Levat, Captain Christy, Reynolds Hole, and Madame Margottin. Mr. S. Tuke, Hitchin, was a good second, his stand including a very fine bloom of Marie Baumann. L. Simes, Esq., Hitchin, was third, and the Rev. F. D. Lambert, Clothall Rectory, Baldeck, was fourth. Ten collections were shown in all. For six new Roses since 1834 T. W. Girdlestone, Esq., Sunningdale, Berks, was first with Gloire Lyonnaise, Joseph Matral, Lady of the Lake, Grace Darling, Madame de Watteville, and Souvenir de Gabrielle Drevat. They were very moderate specimens, however. A third prize was adjudged to the Rev. Alan Cheales, Brockham Vicarage, Surrey, no others being shown.

The first prize for six blooms of any Hybrid Perpetual was deservedly awarded to Mr. W. J. Grant for six very fine specimens of La France. J. B. Hall, Esq., Larch Wood, Rock Ferry, was second with fresh blooms of Madame G. Luizet; Mr. W. Narroway, Haddington Quarry, Oxford, third with A. K. Williams, very good indeed; and S. P. Budd, Esq., 8, Gay Street, Bath, fourth with Ulrich Brunner. Twelve boxes were shown, and all were greatly admired. Fourteen boxes of six Tea or Noisette varieties were in competition, the first prize being won by E. Claxton, Esq., with charming blooms of Madame H. Jamain; the second by the Rev. F. R. Burnside with Innocente Pirola, beautifully represented; and the third by Mr. Girdlestone with Jean Ducher.

OPEN CLASSES.—In the class for twelve Teas or Noisettes, three trusses of each, there were seven competitors. Mr. B. R. Cant, Colchester, secured chief honours (a piece of plate), Souvenir d'Elise, Innocente Pirola, Marie Van Houtte, Madame Cusin, La Boule d'Or, Madame H. Jamain, Madame de Watteville, Moiré, Madame Lombard, Madame C. Kuster, Madame Bravy,

Niphotos. Mr. F. Cant, Colchester, was second, showing Innocente Pirola, Souvenir d'Elise, Rubens, and Marie Van Houtte very fine. The Rev. Page Roberts was third with half-expanded buds, Madame de Watteville, Catherine Mermet, and Souvenir d'Elise Vardon being very fine. Mr. G. W. Piper, Uckfield, was fourth, Catherine Mermet being very fine, and Souvenir d'un Ami also.

The collections of garden Roses from eight exhibitors formed an interesting class. The Rev. J. Pemberton was first, showing Rosa rugosa and several single varieties, together with polyantha and Moss Roses. Mr. J. Sladden, Badsey, was a good second with a charming collection, including the old multiflora, beautiful blooms of H.P. Dr. Hogg, Tea Ma Capucine, H.P. Olga Maria, Hybrid Provence Princess Clemantine, York-and-Lancaster Noisette Aime Vibert, Damask, and Hybrid China varieties. Third, Mr. J. Walker, Tbam, Oxon, with an interesting collection. For twelve bunches of Moss and Provence Roses the prizes were secured by Messrs. Paul & Son, Cheshunt, G. Bunyard, and Cranston's Nursery Co., Hereford, in the order named.

For twelve bunches of Roses suitable for buttonholes, Mr. J. Mattock, New Headington, Oxford, was first with Amazone, Comtesse de Naidailac, David Pradel, W. Allen Richardson, Marie Van Houtte, Innocente Pirola, Madame Charles, Souvenir de Paul Neyron, Madame de Watteville, Homère, and Niphotos. Messrs. G. Bunyard & Co., Maidstone, were second with Madame Falcot, Perle des Jardins, Common Moss, Souvenir de Paul Neyron, W. A. Richardson, Homère, Comtesse de Naidailac, Caroline Kuster, and Jean Pernet.

Four collections of twelve new Roses offered in 1884 and since were shown, but were not remarkable. Messrs. Paul & Son, Cheshunt, secured first honours with Longfellow, Madame Norman Neruda, Grace Darling, Madame Rawell, Chandon, Madame de Watteville, Victor Hugo, Pride of Reigate, Maréchal P. Wilder, Ella Gordon, Baroness Nathaniel de Rothschild, Etendard de Jeanne d'Arc, and Madame Julie Gaulin. Messrs. Curtis, Sanford & Co., were second with Mrs. Caroline Swales, General Appert, Baron Travot, Souvenir de René, Levêque, Madame de Watteville, Alphonse, Souper, Baroness Nathaniel de Rothschild, Victor Hugo, Gloire Lyonnaise, Madame Norman Neruda, Madame Massicot, and President S. nélare. Mr. B. R. Cant followed showing General Appert well and Dr. Dor. For twelve trusses of any new Rose Mr. B. R. Cant was first with Madame de Watteville; Messrs. Curtis, Sanford & Co. second with Benoit Comte; and Paul and Son third with Madame Norman Neruda.

The classes for varieties in their respective colours were as attractive as usual. The awards being as follows:—Twelve trusses of any yellow Rose, six entries, first, W. J. Grant, Esq., with Madame Van Houtte; second, W. H. Wakeley, Esq., with Maréchal Niel; third, Mr. John Walker, with the same variety; and fourth, Mr. B. R. Cant, with the same. Any white Rose, eight entries.—First, Mr. B. R. Cant, with Niphotos; second, Messrs. Curtis, Sanford & Co., with Merveille de Lyon; third, Mr. G. H. Piper, with Niphotos, and fourth, Mr. C. Turner, with Alba Rosea. Any crimson Rose, seven entries.—First, Mr. B. R. Cant, with A. K. Williams of medium size, but good form and colour; second, Mr. F. Cant, with A. K. Williams, smaller; third, Messrs. Curtis, Sanford & Co., with A. K. Williams; fourth, Mr. W. H. Wakeley, with Alfred Colomb. Any dark velvety crimson Rose, eight entries.—First, Messrs. Keynes, Williams, & Co., Salisbury, with Reynolds Hole, very fine; second, Messrs. G. Cooling & Sons, for Xavier Olibo; third, Mr. G. Prince, with the same; and fourth, Mr. B. R. Cant, with Prince Arthur.

For twelve trusses of any Rose, sixteen entries, Mr. H. Bennett, Shepperton, was first with Lady Mary Fitzwilliam, exceedingly handsome. Second, Messrs. Curtis, Sanford & Co. with Ulrich Brunner filis, very handsome. Third, Mr. B. R. Cant with Souvenir d'Elise Vardon; and fourth, Messrs. Keynes Williams & Co. for Xavier Olibo.

In the class for three trusses of any new seedling Rose or distinct sport not in commerce a gold medal was offered, but no award was made. Mr. C. Turner, Slough, showed a dark velvety crimson H.P. Rose named The Colonel. Messrs. W. Paul & Son showed Grand Mogul, a seedling from A. K. Williams, of a very bright yet deep scarlet, quite distinct from its parent. Silver Queen is a pretty pink and white variety, said to be a cross between Queen of Queens and Maiden's Blush. The Bride was also shown and described as a sport from Catherine Mermet; it has very pale yellow blooms and seems to be of good habit.

The prizewinners in class 4 (nurserymen), which was inadvertently omitted in the above notes, were Messrs. Curtis, Sanford & Co., Torquay; J. Burrell & Co., Cambridge; G. Cooling & Son, Bath; and J. Jefferies and Son, Cirencester, who were placed in the order they are named.

In addition to the non-competing exhibits previously mentioned, Messrs. G. Bunyard & Co. had a large box of William Allen Richardson Rose, and Messrs. Blake & Mackenzie, Liverpool, showed some neat samples of labels for Roses.

CRYSTAL PALACE.—JULY 3RD.

MR. HEAD, the garden superintendent of this highly respectable and admirably conducted public rendezvous, is proving himself an adept in the arrangement of flower shows. He follows the plan of no one, scarcely even following himself, as nearly or quite every exhibition differs in the disposition of the products, and we have never heard a complaint of the plan of any of the shows. The Exhibition under notice was the most enjoyable of the many fine Palace Rose Shows we have had the pleasure of attending. Instead of the boxes being disposed in long parallel lines in a section of the transept, with not half space enough for the crowds of visitors to examine the blooms, the exhibits were arranged round the four sides of a series of isolated tables about 9 by 6 feet, and 10 or 12 yards asunder. In this way the Show practically extended over the entire length of the building, as well as round the central auditorium. It was, in fact, a great promenade show, and it is difficult to conceive an arrangement that could offer better facilities for the inspection of the stands by a great number of visitors. A length of 1500 feet of tabling was occupied, and the blooms generally were remarkable for the clearness of the light varieties and richness of the darks rather than for size; and in point of aggregate merit the Teas probably excelled the Hybrid Perpetuals. There were a few grand blooms in the Show, but generally the flowers were somewhat small, as might be expected from their being forced out by much heat and in a dry atmosphere.

In the nurserymen's collections only the leading blooms can be indicated. Mr. B. R. Cant Colchester, secured the premier position in the class for seventy-two Roses, distinct, his splendid Teas as usual turning the scale in his favour. Of these, the most prominent were Innocente Pirola, Madame Bravy, Madame Welch, Niphotos, Marie Van Houtte, and Madame de Watteville. These, with the fine Hybrid Teas Lady Mary Fitzwilliam and La France, showed to great advantage amongst the rich colours of Marie Baumann, General Jacqueminot, Marguerite Brassyac, Duchess of Bedford, and Victor Hugo, all of which were admirably represented, the last named being especially glowing, and the collection deserved its position. It was, however, by no means an easy win, for Messrs. Paul & Son of Cheshunt ran it very closely indeed with an exceedingly fresh, even, clear, and bright collection. Very fine were Souvenir d'Elise, Lady Mary Fitzwilliam, Violette Bouyer, Duc de Wellington, S. Reynolds Hole, Comte de Raimbaud, Marie Baumann, and Caroline Kuster. Mr. Frank Cant was awarded the third prize with generally heavier blooms, but some a trifle rough and perhaps a few hours too old. Violette Bouyer, Ferdinand de Lesseps, Countess of Rosebery, Ruhens, and Lady Mary Fitzwilliam were the most noteworthy varieties. Six collections were staged. The two first-named exhibitors occupied the same relative positions in the forty-eight triplet class with blooms of the same character as before, and similarly close in point of merit, Messrs. Keynes, Williams, & Co., Salisbury, being awarded the remaining prize for a generally good collection. Mr. Turner, Slough, well won the chief prize in the class for twenty-four triplets of Roses with really fine, clean, well-coloured blooms, notably of A. K. Williams, Prince Arthur, Etoile de Lyon, Lady Mary Fitzwilliam, and Madame G. Luizet; Messrs. Cooling and Son, Bath, second, and Mr. Rumsey, Waltham Cross, third, both exhibiting well. The contest in the class for twenty-four blooms was extremely close between Mr. Prince, Oxford, and Mr. Turner for first honours, the former winning with nearly all Teas, and five they were, notably Princess of Wales, exquisite; Souvenir d'Elise, Marie Van Houtte, Etoile de Lyon, Hon. E. Giffard, Sunset, Maréchal Niel, and Madame Cusin, while A. K. Williams, Lady Mary Fitzwilliam, and Violette Bouyer were worthy of their company. Mr. Turner's stand was very rich, Madame Carrière, Duc de Wellington, Louis Van Houtte, and A. K. Williams being admirably represented, relieved with good blooms of Alba Rosea, Lady Mary Fitzwilliam, and Maréchal Niel. The third prize was adjudged to Mr. Mount, Rose Nursery, St. Dunstan's, Canterbury, with a stand of very good blooms indeed. Eleven competitors. In the class for eighteen triplets of Teas and Noisettes highly attractive stands were placed in competition, the prizes going respectively to Mr. G. Prince, Mr. G. W. Piper, Uckfield, and Mr. Turner. The prominent varieties were Alba Rosea, François Kruger, Princess of Wales, La Boule d'Or, Niphotos, Catherine Mermet, Jean Ducher, Marie Van Houtte, Souvenir d'Elise Vardon, Anna Ollivier, Innocente Pirola, Madame Hippolyte Jamain, Edith Gifford, Amazone.

Prizes were offered for collections of Roses under prescribed colours—yellow, white, pink, crimson, and velvety crimson. In the yellow class five lots were staged, Mr. Prince securing the foremost place with a splendid stand. Maréchal Niel was the best variety, Perle des Jardins second, and Amazone third in point of merit, and very beautiful though not bright yellow were Sunset, Jean Ducher, Etoile de Lyon, Francisca Kruger, Comtesse de Nadillac, and Caroline Kuster. Mr. T. Mattock, Headington, Oxford, was placed second with sixteen varieties, and Mr. B. R. Cant third with better blooms, but only in six varieties—Maréchal Niel, Etoile de Lyon, Jean Ducher, Anna Ollivier, Marie Van Houtte, and Sunset. It may be stated here that the last-named Rose was in several stands, but in no case so bright in colour as represented in catalogues; it is nevertheless an attractive variety. Six stands of white Roses were placed in competition, Mr. B. R. Cant taking the lead with charming triplets of Madame Bravy, Madame Lacharme, Devonensis, Innocente Pirola, Niphotos and Hon. E. Giffard; Mr. Prince was second with larger but some too much expanded flowers, the last variety named being the gem of the stand; Mr. Piper, Uckfield, third with neat blooms. Six collections were staged. Eight stands of pink Roses were placed in competition; Messrs. Paul & Son were first with twenty-four varieties, the best being Madame Cusin, Duchesse de Vallombrosa, Princess Beatrice, Lady Mary Fitzwilliam, Madame Montet, and Madame G. Luizet. Mr. B. R. Cant followed with better blooms in six varieties, Madame Cusin, Marguerite de St. Amand, Mons. Noman, La France, Madame G. Luizet, and Duchesse de Vallombrosa; the third prize falling to Messrs. J. Burrell & Co., Howe House Nursery, Cambridge. For crimson Roses Messrs. Paul & Son, Cheshunt, B. R. Cant, and G. Christy were first, second, and third in the order named; and for velvety crimson flowers Mr. B. R. Cant was first, Messrs. Paul second, and Messrs. G. Bunyard & Co., Old Nurseries, Maidstone, third. In the crimson class the following were the most noteworthy varieties:—A. K. Williams, Duke of Edinburgh, Dr. Andry, E. Y. Teas, Général Jacqueminot, Duke of Teck, Ulrich Brunner, Comte Raimbaud, Marie Rady, Marie Baumann, Madame Victor Verdier, and Camille Bernardin; and in the velvety crimson class Duke of Edinburgh, Fisher Holmes, Prince Arthur, Dr. Sewell, Duke of Marlborough, Maurice Bernardin, Louis Van Houtte, Prince Arthur, Reynolds Hole, and Prince Camille de Rohan were prominent.

Messrs. B. R. Cant, G. Mount, and J. Grant, Hope End Farm, Ledbury were awarded the prizes in the order named for eighteen blooms of Maréchal Niel, all being good and wonderfully well coloured. For eighteen blooms of any Tea or Noisette Rose the Colchester veteran scored again with splendid examples of Souvenir d'Elise. Mr. Grant being second with Marie Van Houtte, perfectly lovely; and Mr. G. Prince third with Comtesse de Nadillac. In the class for eighteen blooms of Marie Baumann or similar colour, Messrs. Keynes & Co. were first with richly coloured examples of Ferdinand de Lesseps, Messrs. B. R. Cant and G. Bunyard following with Marie Baumann. Messrs. Paul & Son, Cheshunt, secured the first position in the Prince Camille de Rohan class, or varieties of similar colour, with rich examples of Abel Carrière, Messrs. Keynes & Co. second with Xavier Olibo, and Mr. B. R. Cant third with Fisher Holmes. In the "François Michelon or similar colour" class, Mr. Grant was first with Marquise de Castellane; the Cranston Co. second with Mons. Noman, and Mr. B. R. Cant third with John Hopper. Mr. Bennett was fittingly in the premier position in the Lady Mary Fitzwilliam class (or similar colour) with splendid blooms of that fine variety; Mr. Cant second with the same variety, also excellent; and Mr. T. W. Girdlestone, Sunningdale, third, with Violette Bouyer, no doubt the best

stand of that variety hitherto exhibited and beautifully set up, the delicately tinted blooms contrasting effectively with the ample foliage. Other varieties in this class were La France and Capitaine Christy. The next class was for A. K. Williams, and seven dazzling stands of eighteen blooms each were placed in competition, the prizes going to Messrs. G. Prince, W. J. Grant, and Paul & Son respectively. For high average excellence and uniform richness of colour we do not remember seeing a better class than this. Five beautiful stands of William Allen Richardson were staged, Rev. J. H. Pemberton, Havering, Romford, well winning the first prize; Mr. Prince the second, and Mr. Atherton, Chatteris, the third. The flowers were shown in clusters, and the petals of those in the two first-mentioned stands clearly edged with white, the combination of colours reminding us of the Californian annual *Limnanthes Douglasi*. Mr. B. R. Cant and G. W. Piper secured the prizes for stands of Niphotos; Messrs. Cooling (Bath), Bunyard, and Prince for Rosa rugosa; and Messrs. Paul, Prince, and Mount for varieties of Rosa polyantha, the varieties exhibited being Simplex (single, small, and pretty), Anna Maria de Montraviel, Mignonette, Parquette, Madame Brunner, and Perle d'Or. They were much admired, and small well-flowered plants in 5-inch pots are very suitable for decorative purposes in the summer.

There was plenty of competition in the amateurs' classes, and the blooms, though rather small, were of good quality. The first class—that for forty-eight varieties, distinct—was an excellent one, eight collections being staged. Mr. W. J. Grant received the first prize for the following varieties, the names being given in the order they were placed from left to right. Back row—Mons. Noman, Général Jacqueminot, Niphotos, Alphonse Souper, Maréchal Niel, Clovis, Lady Mary Fitzwilliam, Horace Vernet, a fine bloom; Victor Verdier, Duke of Edinburgh, Duchesse de Vallombrosa, Charles Lefebvre, Heinrich Schultheis, Xavier Olibo, Violette Bouyer, and Duke of Wellington. Middle row—La Rosière, Rubens, Dr. Andry, Marquise de Castellane, A. K. Williams, Souvenir d'un Ami, Ulrich Brunner, Caroline Kuster, Prince Arthur, Madame Gabriel Luizet, Constantin Tretiakoff, Souvenir d'Elise Vardon, Devienne Lamy, Madame Hippolyte Jamain, Henri Ledechaux, and Sir Garnet Wolseley. Front row—Comte de Nadillac, Marie Baumann, Catherine Mermet, Countess of Rosebery, Marie Van Houtte, Beauty of Waltham, Captain Christy, Duchess of Edinburgh, La France, Alfred Colomb, Marie Verdier, Sultan of Zanzibar, Bouquet d'Or, Auguste Rigotard, Etoile de Lyon, and Marguerite de St. Amand. The flowers were large and fresh—Mons. Noman, Horace Vernet, Ulrich Brunner, Dr. Andry, and Etoile de Lyon being conspicuously good. Mr. George Campbell, gardener to S. P. Budd, Esq., 8, Gay Street, Bath, was second, showing fair-sized blooms, which, however, were not at all fresh, and the same remark applies to those of the Rev. J. H. Pemberton, who was third. Eight collections were also staged in the class for twenty-four H.P.'s, and Mr. J. Ridout, gardener to T. B. Haywood, Esq., Woodhatch Lodge, Reigate, was awarded first prize for the following:—Back row—François Michelon, M. S. Baker, Duchesse de Caylus, Ville de Lyon, A. K. Williams, Mons. Noman, Xavier Olibo, and Madame J. Periere. Middle row—J. S. Mill, Duchesse de Vallombrosa, Madame Victor Verdier, Captain Christy, Dapny Jamain, Charles Lefebvre, Marie Finger, and Marie Rady. Front row—Mrs. Laxton, Alfred Colomb, E. Y. Teas, Beauty of Waltham, Madame Lacharme, Duke of Teck, F. de Lesseps, and Camille Bernardin. Some of the flowers were a little past their best, but A. K. Williams, Beauty of Waltham, Marie Finger, and Madame Lacharme were very fine. R. G. West, Esq., Reigate, was second with fresh but rather small blooms—Le Havre and Marguerite de St. Amand were exceptionally good, however. The third prize went to Mr. R. Gray, gardener to the Right Hon. Earl Stanhope, Casvening, Sevenoaks, and an extra prize was deservedly adjudged to G. Christy, Esq., Buckhurst Lodge, Westerham.

With twenty-four varieties, three trusses, there were again eight competitors, and Mr. Ridout was again to the fore, receiving first prize for a fine stand composed of the following varieties:—Back row—A. K. Williams, very fine; M. Noman, François Michelon, Madame Hippolyte Jamain, a beautiful bloom; Lady Mary Fitzwilliam, Ulrich Brunner, La France, Countess of Oxford, Capitaine Christy, Madame J. Periere, Madame Victor Verdier, and Marquise de Castellane. Front row—Louise Van Houtte, Alfred Colomb, Henri Ledechaux, Marie Finger, Marie Baumann, Madame Lacharme, J. S. Mill, Jean Ducher, Madame G. Luizet, Mrs. Baker, Marie Rady, and Princess of Wales. The flowers were large, fresh, and clear, and Mr. Ridout is to be congratulated for showing two such excellent stands. The second and third prizes went respectively to Mr. Grant and Mr. J. Brown, gardener to A. J. Waterlow, Esq., Great Doods, Reigate, the flowers of the former being a little too full, and those of the latter small. Both stands included many good blooms, however. An extra prize was awarded to Mr. W. H. Wakeley, Macklands, Rainham. A capital class was that for twelve blooms of H.P.'s. There were seven competitors, and Mr. Brown improved on his position in the last class by winning the first prize, showing moderate-sized but beautifully fresh blooms of La Havre, La France, Marquise de Castellane, and Madame G. Luizet in the back row. Lady Mary Fitzwilliam, Countess of Rosebery, Merveille de Lyon, and Pride of Reigate in the middle row; and A. K. Williams, Pride of Waltham, Eugénie Burke, and Duchesse de Vallombrosa in the front. J. S. Curtis, Esq., Chatteris, Cambs, was a close second, and Mr. J. Bateman, 72, Twicken Road, Highgate Road, N.W., third.

Ten stands were in competition in the class for twelve Tea and Noisette varieties, three trusses, and the blooms were excellent throughout, being very large and fresh. Beautiful blooms of the following varieties won the first prize for the Rev. E. S. King, D.D., Madingley Vicarage, Cambridge. Back row—Jean Ducher, Maréchal Niel, Souvenir d'un Ami, and Souvenir d'Elise (magnificent). Middle row—Souvenir de Paul Neyron, Princess of Wales, Madame Cusin, and Catherine Mermet. Front row—Madame Hippolyte Jamain, Innocente Pirola, Trioppe de Reines, and Marie Van Houtte. The Rev. J. H. Pemberton was second with large but somewhat faded blooms, and Mr. Wakeley third with smaller but much fresher flowers than the second prize box. The competition was very spirited. For Messrs. W. Paul & Son's special prizes for collections of Roses, number unlimited, two moderate boxes were staged, Mr. G. Mount receiving a third prize. This was the last of the Rose classes.

A class was provided for a group of Tuberosa Begonias. It only produced one entrant—Messrs. Laing & Co., of Forest Hill—but, as could be antici-

pated, the group arranged by this firm was a very beautiful one. The space to be covered was 100 square feet, and the effect that a mass of Begonias of the most varied and brilliant colours, interspersed with Ferns and Palms, would make can easily be imagined, and need not be enlarged upon. First prize was deservedly awarded.

Mr. James Douglas, Great Gearies, Ilford, and Mr. Charles Turner were the only competitors for twelve Picotees; the former showing twelve seedlings, large, symmetrical, and fresh, and receiving first prize. Mr. Turner received the second, his flowers being rather small, and apparently not quite ready. The exhibitors named were the only competitors with twelve Carnations, but here their positions were reversed, Mr. Turner occupying premier position. He showed excellent blooms of Illuminator, The Queen, Figaro, and Harry Matthews amongst others. There were one or two good blooms amongst Mr. Douglas's twelve seedlings. For twelve Pinks Mr. F. Hooper, Vine Nursery, Widcombe Hill, Bath, easily secured first position with a splendid stand, every bloom being good; but were they distinct varieties? Mr. H. Catley, 16, Claverton Buildings, Widcombe, Bath, and Mr. C. Turner were second and third respectively.

The miscellaneous exhibits were not numerous, but several were much

much enlarged and improved by the present owner, Wildman Cattley, Esq., who, on leaving his house, Northbrook, near Godalming, bought it of the Duke. The property, consisting of 225 acres, is very attractive and picturesque, no two fields being on the same level, and nearly every field having a stream running through it. It is evidently the home of a lover of flowers, and it is chiefly because Mr. Cattley delights in their cultivation, and takes the greatest pleasure in encouraging the taste for every kind of flowers, that the Rose Show is held this year at Oak Dene. A hearty welcome was given to all comers. The Viennese band had been engaged, and played under the trees of the garden. A conjuror was also on the spot, and, besides a garden party, the children of the parish were entertained at tea. No more suitable spot could be well chosen for the twenty-first show. The Association is more full of vigour and enthusiasm than ever, and Mr. and Mrs. Wildman Cattley are types of those new members who are continually bringing into the old Society new life. In 1865 the Association was born, and the number of members was seventeen, and the value of the prizes given was £1.

The late Mr. Wilson Saunders had much to do with its origin. He argued that each neighbourhood ought to have its Rose show, and so this



Fig. 5.—REINWARDTIA TETRAGYNE. (See page 28).

admired. Messrs. W. Paul & Son showed a beautiful group of Roses in pots, with baskets, vases, and boxes of cut blooms. It was a great and meritorious display, and received an extra prize. Prizes were also awarded to Messrs. J. Cheal & Son, Lowfield Nurseries, Crawley, Sussex, for an attractive collection of herbaceous flowers; to Mr. R. W. Proctor, Chesterfield, for Pansies and Pyrethrums; to Mr. E. Holman, Rockhills, Crystal Palace Park, for six fine Petunias; and to Mr. H. Bennett, Shepperton, for a box of cut Roses.

First-class certificates were awarded to Mr. J. Douglas for Picotees Agnes Chambers and Annie Douglas.

BROCKHAM AMATEUR ROSE ASSOCIATION.

THE Brockham Amateur Rose Association came of age this year, and held its twenty-first show at Oak Dene on Saturday the 3rd of July, at the invitation of Mr. and Mrs. Wildman Cattley. The Holmwood, where the Show has now been held for six years out of the twenty-one, is a spot of great natural beauty, and it would be difficult to find, even in Surrey, views to surpass those overlooking Reigate, Westerham, Kent Towers, Tunbridge Wells, the Southdowns, and Leith Hill. The gardens of Oak Dene are planted with much taste, the trees are well chosen and beautifully grown, the conservatories are filled with plants in great variety, a special feature being a very large and fine collection of Tree Carnations and Picotees.

Oak Dene, which carries its name from a very fine grove of Oaks, is a modern Gothic house, built twenty years ago by Mrs. Labouchere, enlarged by the present Duke of Marlborough, to whom it was sold, and subsequently

Association was started. Mr. Cheales was Secretary. Captain Lang in 1866 joined the Committee as Treasurer at the request of his sister, Miss Lang, who was on the Committee. Mr. F. T. Wollaston was also an original founder; and on the Committee of nine they are still conspicuous, age having done but little to mark the ravages of time. A Brockham Show without Mr. Cheales and Captain Lang would lose its distinguishing feature. The Secretary has every intention of making his Association live long and grow prosperous. Each year he turns out his Cabbages and grows more Roses. Visit his garden the day before the Show, and you might fancy you were in a miniature Wimbleton, nearly every Rose tree having its own tent.

The Treasurer Captain Lang is Treasurer still. The same pleasant fancy holds him that the Society will be ruined because the "Judges will give extra prizes." It gives away now £21 instead of £4, for its members number fifty-eight instead of seventeen; but instead of ruin you may read, "Balance in Treasurer's hands, £16 4s. 10d." Moreover it gives away the gold, silver-gilt, and silver medals of the National Rose Society, to which the Brockham R.S. was affiliated in 1879. It seems that the more it gives the more it has to give.

Rose-growing and Rose-showing are indeed very different things from what they were twenty-one years ago. I well remember that first show in the Brockham schoolroom, when the Ladies Legge showed China Roses under a glass shade, when Coupe d'Hébé competed for the best bloom, and the Secretary showed Chenedole and Blairii No. 2, and when the Roses were shown in confectionery boxes and without moss; Lady M. Legge won the prize, though, for the best bloom then, and she very nearly won it

for the best H.P. last year, and a companion of these two blooms would very fitly show the progress made by this most excellent Rose Society, which is just simply to-day what it was at the beginning—a "Rose Society," the Committee never having yielded to the temptation to turn it into a so-called Horticultural Society, or allowing itself to lose sight of the fact that Roses which are looked after by the owner in person afford the truest pleasure, and best fulfil the object in view.

An hour's leisure before the judging began gave time for a look round, and under the guidance of Mr. Stephen Cattley the very lovely garden was inspected, comprising two herbaceous borders full of choice plants and various shrubs (*Cornus elegantissima* seems a favourite plant) and Conifers, as well as the greenhouses alluded to already, and notably a large low Paxton house full of Keens' Seedling Strawberry laden with ripe fruit.

The Show itself was held in a large tent outside the garden. The extreme heat of the day tried the blooms exceedingly. You might almost watch the buds expanding. The number of exhibitors was eighteen, and some of the classes were not very well represented. But in the principal classes some of the blooms were quite up to the mark. One feature of this Show was that members not yet known to fame succeeded in winning some of the best prizes. Special mention may be made of Mr. A. F. Perkins, who won the drawing room decoration with a very tall glass vase most tastefully arranged, and Mrs. Wildman Cattley, who won the National Rose Association's silver medal for Lady Mary Fitzwilliam. She won on her simple merits, for there was not a leaf to set off her charms, and she was simply put into water on a green box without moss. She was a grand bloom for all that. R. A. Cockburn, Esq., also won a prize for six blooms, and Miss Heath for a drawing room decoration. It should be noted that several of the Roses were very badly set up. Flattened on the moss as they were they could not be properly appreciated. Some were shown without any moss or relief whatever. This is a relic of bygone days, and the Committee should look to it.

The decorations were decidedly feeble. The distance must no doubt have prevented several well-known ladies from competing. But a very pretty feature of the Show was conspicuous by its absence. The Teas were thoroughly well shown, as they generally are at Brockham.

Mr. Appleby of the Box Hill Nurseries, who has a really grand collection of plants in big grounds, brought up a multitude of blooms and other flowers to help the decoration of the tent, and the box of Allan Richardson that he exhibited, not for competition, was a sight. The Committee and Judges were entertained at luncheon by the host and hostess, who did their part most successfully in making every visitor feel at home. The Judges were Herbert Bensted, Esq., Hon. Sec. of the Maidstone Rose Club; Rev. A. B. Alexander, late Hon. Sec. of the Farnham Rose Association; and Mr. H. Appleby of the Box Hill Nurseries.

The following list contains the names of the winners of the prizes:—Twenty-four distinct single trusses.—First Rev. A. Cheales. Varieties, François Michelon, Dr. Hogg, Gabriel Luizet, Charles Lefebvre, Pierre Notting, E. Verdier, Maréchal Niel, Madame Victor Verdier, Alfred Colomb, Duke of Wellington, Sultan of Zanzibar, Lady Mary Fitzwilliam, Madame Baumann, La France, Henri Schultheis, Earl of Pembroke, Earl of Rosebery, La Havre, Star of Waltham, A. K. Williams, Jean Ducher, Mrs. Wood, Dr. Andry, Thérèse Levet. Second prize C. E. Cuthell, Esq., with Marguerite de St. Amand, Etienne Levet, Gabriel Luizet, Captain Christy, Ferdinand de Lesseps, Abel Grand, Marquise de Castellane, Comtesse de Serenyi, Marie Rady, Reine Marie Henriette, Marie Finger, Madame Hippolyte Jamain, Annie Wood, Jean Ducher, Anna Ollivier, General Jacqueminot, Marie Baumann, La France, Reynolds Hole, Mons. Noman, Niphotos, Maréchal Niel, Camille Bernardin, François Louvet. Extra prize awarded to Mr. Mortimer.

Eighteen distinct single trusses.—First E. Hume, Esq., for Boieilledieu, Cheshunt Hybrid, Marquise de Castellane, Charles Lefebvre, Magna Charta, La France, C. Baltet, Baroness Rothschild, John Hopper, Maréchal Niel, Duchesse de Vallombrosa, Camille Bernardin, François Michelon, Madame Margottin, Marie Baumann, Gabriel Luizet, Madame J. Perrière, Madame Bravy. The second prize was secured by Lady Lawrence. Twelve distinct single trusses.—First Hon. H. Dudley Ryder, second Mrs. Leopold Seymour, third Mrs. Benecke. Six distinct Roses, single trusses.—First Mrs. Leopold Seymour, second Hon. H. Dudley Ryder. Four distinct Roses, single trusses.—First Rev. A. Cheales, second, E. Horne, Esq., third Mrs. Mortimer. Six single trusses of any one variety of Tea or Noisette.—First Miss Barclay, second C. E. Cuthell, Esq., third Mrs. Leopold Seymour. Six single trusses of any other one variety.—First C. E. Cuthell, Esq., for Madame Gabriel Luizet; second Mrs. Seymour with La France; third Rev. A. Cheales for La France. An extra prize was awarded to E. Horne, Esq., for his box of Madame Gabriel Luizet. The gold medal of the N.R.S. awarded for the best box in classes 6 and 7 was won by Mr. Cuthell in lieu of the first prize.

Twelve Teas and Noisettes (distinct).—First, E. Horne, Esq., for Marguerite de St. Amand, Maréchal Niel, Camille Bernardin, Souvenir d'un Ami, Madame Camille, A. Ollivier, Madame Bravy, Catherine Mermet, Gloire de Dijon, M. Van Houtte, Madame Willermoz, Rêve d'Or; second, Rev. A. Cheales, for Madame Berard, Maréchal Niel, Rêve d'Or, Belle de Bordeaux, Souvenir de Thérèse Levet, Madame Bravy, A. Ollivier, Devonienais, Etoile de Lyon, Catherine Mermet, Niphotos, Edith Giffard; third, Mrs. Mortimer. Six Teas or Noisettes (distinct).—First, C. E. Cuthell, Esq.; second, Mrs. Leopold Seymour.

Six distinct single trusses, open to members who have never taken a prize of the Society.—The prize for these Roses was taken by R. A. Cockburn, Esq. The best Tea or Noisette.—The silver medal of the N.R.S. was awarded to Mrs. Mortimer for a very fine and perfect Souvenir d'un Ami. The best bloom or truss (not Tea).—Silver medal of the N.R.S. to Wildman Cattley, Esq., for a very large specimen of Lady Mary Fitzwilliam.

Of dinner table decorations (Roses, Ferns, &c.).—First, Mrs. Cuthell; second, Mrs. J. B. Nicholls. Drawing-room decorations (any flowers).—First, Mrs. A. F. Perkins; second, Miss Heath. Buttonhole bouquets (Rosebuds, flowers, and foliage in groups of three).—First, Mrs. Cuthell; second, Mrs. J. B. Nicholls.

A method for distinguishing at a glance the prizes won, introduced by the Hon. Sec., the Rev. Alan Cheales, is worth mentioning. A large star, orange for first prize, blue for second, red for third, was attached to the card announcing the winner. The number of visitors to the Show was

very large, and the amount of gate-money sufficient to set even the Treasurer's mind at rest.—A. B. ALEXANDER, *Shedfield Vicarage*.

CANTERBURY ROSE SHOW.

As usual, the old Cathedral City has opened the Rose Show season and in a thoroughly successful manner. A fortnight ago its indefatigable Secretary wrote to me, "I do not know where the Roses are to come from for the 29th;" to which my reply was, "Have patience and you will find that we shall have weather to bring them in in time;" and so, in truth, it has occurred. We have had for some days past a hot blazing sun with cool nights, weather which I look upon for Rose exhibitors, who take the trouble of shading their flowers, as about the best weather they can have. There is no wet, not even heavy dews to discolour the Roses. All light flowers are the better for it, and dark ones, which when exposed suffer severely from the hot sun, develop great richness of colour when they are carefully shaded. Canterbury, being an early place for Roses, felt the full benefit of the change, and I am convinced that their Show held to-day was the best that the old city has ever seen. Dark and light Roses were alike good, and the Teas were especially clean and good. "Roses must be small," another friend said; but Roses were not small, and, indeed, in many cases if there were any complaint amongst them at all, it was that they were too large. There were most certainly fewer indifferent blooms than I have seen in any exhibition of its size. Notable, too, was the fact that some exhibitors who have exhibited sparingly before came out in strong force, and those who had never gained a prize before showed boxes that would not have disgraced older exhibitors. This must be encouraging to those who have so assiduously worked the Society, and who have oftentimes despaired because it was not supported as it ought to be in a place surrounded by so many who possess gardens and take pleasure in them. Let us hope that the success of to-day may lead to greater success in the future.

As this is especially an amateurs' Society, it will be better to take their classes first, reversing the ordinary rule, when the nurserymen have the precedence.

In class 1, for eighteen varieties, one truss of each, Mr. W. H. Wakeley of Rainham was first with one of the most even boxes of Roses I ever saw. There was not one flower in it to which a point less than the highest could be given; they were all even and well-coloured, and consisted of Marquise de Castellane, Marie Van Houtte, Marie Baumann, Jean Ducher, Thomas Mills, Baroness Rothschild, a lovely bloom; Innocente Pirola, Gloire de Bourg la Reine, Captain Christy, Maréchal Niel, Madame Caroline Kuster, A. K. Williams, a grand bloom; Hon. Edith Giffard, very lovely; Charles Lefebvre, Gabriel Luizet, Mrs. Baker, and Duchesse de Vallombrosa. Mr. R. E. West was second, and Mr. Warde of West Farleigh third. In class 2, for twelve, Mr. Warde was first with a very good box of blooms, containing Gabriel Luizet, François Michelon, Marie Van Houtte, Star of Waltham, Comtesse de Nadaillac, Duke of Teck, La France, Prince Arthur, Charles Lefebvre, Duke of Edinburgh, and Maréchal Niel. Mr. H. Foster of Ashford, inventor of the new tube and support for Roses, was second, and the Rev. H. B. Biron third. In class 3, for twelve Teas or Noisettes, the Rev. H. B. Biron, of Lymprie Vicarage, was first with Belle Lyonnaise, Rubens, Marie Van Houtte, Madame Willermoz, Bouquet d'Or, Innocente Pirola, a magnificent bloom, which also gained the bronze medal for the best bloom in the Show; Souvenir d'un Ami, Marchioness of Conyngham, a Rose raised at Bifrons, near Canterbury, but so like Catherine Mermet as to be undistinguishable from it, and Madame Cusin. When we consider the difficulties under which Mr. Biron labours in growing Roses on a cliff this was a most creditable exhibit. Mr. Warde was second, and Mr. W. H. Wakeley third. In class 4, for six trebles, Mr. Wakeley was first with a beautiful set of blooms, consisting of Princess of Wales, very beautiful; Etienne Levet, A. K. Williams, Jean Ducher, Monsieur Noman, a very beautiful treble; and Marie Baumann. Mr. John Hollingworth of Turkey Court, Maidstone, was a good second, and Mr. R. E. West third. In class 5, for twelve varieties, Mr. Peckam of Harbledown Court, was first with Baroness Rothschild, A. K. Williams, Maréchal Niel, Pierre Carot, Duke of Wellington, very fine; Marie Rady, La France, Marie Baumann, Etienne Levet, Marquise de Castellane, and Duke of Edinburgh. Mr. Cooper Wachar was second. In class 6, for nine blooms, Mr. Packham was again first with Gabriel Luizet, Etienne Levet, Marie Baumann, Charles Lefebvre, A. K. Williams, and E. Y. Teas. In class 7, for six Teas or Noisettes, Mr. Etonley was first with Madame Caroline Kuster, Marie Van Houtte, Catherine Mermet, Triomphe de Rennes, Souvenir d'Elise, and Maréchal Niel. The Rev. R. Buchanan of Herne was second. In class 8, for three varieties, three trusses of each, Miss Walters was first with Captain Christy, A. K. Williams, and La France. Mr. Parker was second, and the Rev. R. Buchanan was third. In class 9, Miss Hawksworth was first with one of the best boxes in the Show, consisting of Marie Van Houtte, A. K. Williams, a large and grand bloom; Catherine Mermet, very fine; Innocente Pirola, and Charles Lefebvre. In class 10, three varieties, three trusses of each, Miss Hawksworth was again first with Comtesse de Nadaillac, La France, and Madame Bravy. In class 11, for three Teas or Noisettes, Miss Hawksworth was first with Innocente Pirola, Comtesse de Nadaillac, and Catherine Mermet. In class 12, for six varieties, Mr. Darlington was first, Souvenir de Thérèse Levet, La France, Duke of Edinburgh, Captain Christy, Jules Finger, and Princess Mary of Cambridge. In class 14, for six blooms of any one variety, Mr. Wakeley was first with fine blooms of Maréchal Niel; Canon Hodgson was second with Innocente Pirola; and Mr. W. Mount third with Charles Lefebvre.

In class 18 for thirty-six varieties, Mr. B. R. Cant of Colchester was first with a box of good blooms, but not equal to his usual high standard, in fact he and some others were showing at Liverpool to-day, and their best blooms were probably there. They consisted of Madame Bravy, Maréchal Niel, Innocente Pirola, Charles Lefebvre, François Michelon, Etienne Levet, Gabriel Luizet, Lady Mary Fitzwilliam, Countess of Rosebery, Souvenir d'Elise, Dr. Andry, Violette Bouyer, Xavier Olibo, Comte de Paris, Constantiu Treitakoff, Devonienais, Comtesse d'Oxford, Madame Ducher, Annie Laxton, Souvenir de Paul Neyron, Duke of Edinburgh, La France, Marie Baumann, Souvenir d'un Ami, Camille de Rohan, Catherine Mermet, Marie Cointet, Maréchal Niel, Marquise de Castellane, Madame Cusin, Duchesse de Caylus, Général Jacqueminot, A. K. Williams, and Marie Van Houtte.

In class 29, for twelve Teas or Noisettes, Mr. Prince was first. Mr. Mount's box contained Comtesse de Nadaillac, Niphotos, Maréchal Niel, Madame

Cusin, Souvenir d'un Ami, Jean Ducher, Anna Ollivier, Perle des Jardins La Boule d'Or, and the Hon. E. Gifford; these were well worthy of the reputation of the Oxford Roses. In class 19, for twenty-four varieties, twelve Teas and twelve Hybrid Perpetuals, Mr. Prince and Mr. G. Mount were equal first; the box of the former contained Marie Baumann, Madame Lambard, Maréchal Niel, Jean Ducher, Niphotos, Catherine Mermet, Pride of Waltham, Anna Ollivier, Baroness Rothschild, Rubens, Gabriel Luizet, Grace Darling, a lovely Rose, Etienne Levet, Madame Cusin, Caroline Kuster, Perle des Jardins, Marie Cointet, Miss Hassard, Mons. Furtado, Souvenir d'Elise, Marie Van Houtte, La France, and Hon. Edith Gifford. Mr. G. Mount's was an excellent box, containing amongst others the highest coloured bloom of Maréchal Niel in the Show, a splendid Innocente Pirola, &c.

As usual at Canterbury the baskets and stands were large in number and excellent in quality. For the best basket similar to those used at the National Rose Society's shows Miss Carrie Hawke was first, and on the stands Miss Welby took the prize with a very beautifully arranged tall stand, and Miss Cooper Wachter was first for buttonholes. Mr. George Mount exhibited a box of lovely blooms of Innocente Pirola, certainly a most lovely Rose.

The room, although a good one, is not equal to that where the Show used to be held, the Corn Exchange, and there was a deficiency of ventilation, which told on the Roses. There was a good attendance, and all the arrangements were carried out with the utmost regularity. After the judging I had a great treat in visiting Captain Lambert's very pretty garden at Stanmore in the Dover Road. He has a small rosery, and what is a most charming addition to it, a perfect Sweetbriar hedge entirely surrounding it, about 3 feet high and 2 feet through, which, whether for appearance when in flower or fragrance, is very delightful, and it was very pleasant to sit under one of the trees in his garden and enjoy a chat about Roses with its genial and courteous owner.—D., Deal.

FARNINGHAM ROSE SHOW.

In the most delightful of weather, bright sun, and a cool breeze the annual gathering of Farningham and its neighbourhood took place on the 30th ult., in the old place besides the river Darent and in front of the well-known hotel of the Lion, known to and beloved by all followers of the gentle craft. It was delightful weather, I have said, but when one looked round on the fields languishing for water and Strawberry fields with their delicious fruit foreboding failure if rain did not come, one felt that there are two sides to all matters here; but on the principle that one cannot have all things as we wish, and that what is one man's meat is another man's poison, we were thankful for the meal and hoped the poison might be somehow neutralised.

Farningham, although it makes the Exhibition a somewhat general one, yet makes the Rose the grand feature of the Show. The table decorations and other floral ornamentations are always good here, and a small cottagers' Show is held, while groups of plants and a few stove and greenhouse plants are also contributed, but the Rose is the centre of attraction. The day itself is the day of the whole year; all the neighbourhood is interested and the village, which at other times only beholds a stray angler or two, is now filled with the carriages of the neighbouring gentry, and the whole place is in its holiday attire.

The Show while a good one was not equal in extent to that at Canterbury, nor to what it was last year. This was to be attributed in good measure to the absence of one or two of the leading nurserymen who were too busy elsewhere to send here, while both Mr. B. R. Cant and Mr. Prince exhibited at Canterbury. Messrs. George Bunyard & Co., Maidstone, were the principal exhibitors in the nurserymen's class of thirty-six, and exhibited a very good stand, consisting of Marguerite de St. Amand, Star of Waltham, Duchess of Valombrosa, Ulrich Brunner, Marie Rady, Alphonse Souper, a beautiful bloom; Mlle. Gabriel Luizet, Alfred Colomb, Comtesse de Sereni, Sultan of Zanzibar, Charles Lefebvre, Comtesse d'Oxford, Beauty of Reigate, curious (but pretty?); Beauty of Waltham, Duchesse Mathilde, Tea (unknown to me); Senateur Vaiese, Madame Hippolyte Jamain, Prince Camille de Rohan, Maréchal Niel, Richard Laxton, Egria, Madame Charles Wood, Captain Christy, Madame Ferdinand Jamain, Ferdinand de Lesseps, Lady Mary Fitzwilliam, La France, Marie Baumann, Innocente Pirola, A. K. Williams, Mons. E. Y. Teas, Prince Arthur, Barthelemy Joubert, a good Rose; Jean Ducher, Charles Darwin.

Mr. Longley of Rainham was second, and Mr. Seale, Sevenoaks, third. In class 2, for twelve Teas or Noisettes, Rev. F. A. Burnside was first with an excellent box which he had brought all the way from the Cotswold Hills, and I am sure many of his old friends (for he used to be the indefatigable Secretary of the Farningham Society) were delighted to see him placed as he was with such a fine start. He had Anna Ollivier, Maréchal Niel, Madame Cusin, Souvenir d'Elise, Jean Ducher, Rubens, La Boule d'Or, Madame Bravy, Souvenir d'un Ami, Innocente Pirola, Jules Finger, and Caroline Kuster. Messrs. Bunyard were second, and Mr. Langley third.

In the class for twenty-four there were some of the best Roses in the Show. The box by which Mr. Wakley of Rainham gained the first prize, the bronze medal of N.R.S. for the best box in the principal divisions, and the silver-gilt medal for the best box in the amateurs' classes, was equal to that he showed at Canterbury, and being in a tent showed to greater advantage, the soft subdued light of the canvas being the most favourable for Roses, and owing to the cool breeze the flowers did not go off so rapidly as usual. Mr. Wakley's stand included Duchess of Bedford, Merveille de Lyon, Marie Baumann, Capitaine Christy, Jean Ducher, A. K. Williams, Caroline Kuster, Marquise de Castellane, Princess of Wales, Gabriel Luizet, Maréchal Niel, Mons. Noman, Innocente Pirola, Duke of Edinburgh, Madame Hippolyte Jamain, Souvenir de Thérèse Levet (a very dark red Tea), Hon. Edith Gifford, La France, Countess of Rosebery, Laurette (a pretty Tea, not generally grown), Alfred Colomb, Violette Bouyer, and Marie Van Houtte. Mr. R. E. West of Reigate was second with an excellent stand, and Earl Stanhope third. In class 4, for twelve varieties, strange to say, only one stand, and that only worthy a second prize, was entered. In class for nine Teas there were some stands of beautiful flowers, Earl Stanhope obtaining the first prize with good and fine blooms of Souvenir d'Elise, Maréchal Niel, Madame Bravy, Madame Bérard, Anna Ollivier, Madame Willeroz, Jean Ducher, Princess of Wales, Francis Kruger. Rev. F. Burnside was second, and Mr. John Hollingworth and Mr. W. H. Wakley

equal third. In class 6, for six of any one variety, dark, Mr. F. Burnaby Atkins was first with excellent blooms of A. K. Williams, though small; Mr. Wakley second with Alfred Colomb; and Earl Stanhope third with Charles Lefebvre. In class 7, for six of any light Rose, Mr. J. M. Fuller was first with clean and good blooms of Captain Christy; Mr. F. Burnaby Atkins second with Gabriel Luizet, and Mr. W. H. Wakley third with Gabriel Luizet. In the local classes there were some excellent blooms staged. Dr. Ashurst was first in class 8 for eighteen varieties with Mrs. Baker, Madame Sophie Tropot, Souvenir de Spa, Baroness Rothschild, Duchess of Valombrosa, Reynolds Hole, Jean Ducher, A. K. Williams, Marie Cointet, Marie Baumann, La France, Charles Lefebvre, Madame Thérèse Levet, Violette Bouyer, La Rosière, Senateur Vaiese (a remarkably bright bloom), and Annie Laxton. In class 9, for twelve varieties, Mr. J. W. Fuller was first with clean and bright blooms of Marie Finger, Xavier Oltho, Captain Christy, Henri Schultheis, Prince Arthur, Violette Bouyer, Horace Vernet, Merveille de Lyon, Marquise de Castellane, Charles Lefebvre, Gabriel Luizet, and Mrs. Baker. In class 10, for nine varieties, James Dalton, Esq., was first with Barthelemy Joubert, Mrs. James Dickson, Duc d'Ossuna, Gloire de Bourg la Reine (very bright), Thomas Mills, Merveille de Lyon, Magna Charta, Duke of Edinburgh, and François Michelin. In class 11, for six varieties, Mr. C. E. Rashleigh was first with Homère, Henri Ledechaux, Duke of Wellington, François Michelin, Duchesse de Valombrosa, and Gloire de Dijon. Mr. H. Waring was second. In class 12 for six Teas and Noisettes, Mr. A. Walker was first with Madame Bravy, Madame Margottin, Souvenir d'un Ami, Catherine Mermet, Madame Hippolyte Jamain, and Marie Van Houtte.

Farningham has always been distinguished for its table decorations, &c., and has had in its neighbourhood one of the most successful of decorators in the person of Mrs. Seale of Sevenoaks, and on this occasion Miss Dalton exhibited three vases which were in admirable taste, the chief subjects used being the three varieties of the Iceland Poppy, white, yellow, and orange with blue Cornbottles. The first prize for a table set out for dinner was awarded to Mrs. Sydney Spalding for a very beautiful arrangement of yellow flowers. Although the vases were somewhat high for present taste the side decorations were of the new-fashioned rough glass, with night lights in them surrounded by foliage. The taste seems to be more than questionable. Amongst the other prizetakers in these decorative classes were Mrs. Seale, Miss Hodson, and Miss Moggenden, &c., and altogether the combined efforts of Secretaries, Committee, and exhibitors a very successful Show was held.—D., Deal.

REIGATE.—JULY 1ST.

THIS Show was held on July 1st in the beautiful grounds of A. J. Waterlow, Esq., who was unhappily incapacitated by severe sickness from being present. His Roses as shown by Mr. Brown met with their usual success. The Show was small but very excellent in quality, the competition in the Tea classes being especially good. As stated in the Society's last report, "It having been found that competition is most keen amongst the smaller growers the schedule had been enlarged, the number of prizes increased, and also a few of the open classes abolished." The active Secretary, Mr. F. C. Pawle, is to be congratulated on the success of the change.

The Judges were Mr. Geo. Paul, Mr. Francis, and Rev. A. Cheales for the larger classes and decorations; and Mr. John Pawle and Mr. Sargent for the smaller. At the conclusion of the judging the Judges, Committee, and other friends were hospitably entertained at Woodhatch, by T. B. Haywood, Esq., President of the Association, who also afterwards inspected his Orchids and magnificent collection of Rose plants. Subjoined is a list of the principal prizetakers:—

Class 1, thirty-six varieties.—First, Mr. T. B. Haywood; second, Mr. A. J. Waterlow. Class 2, twenty-four varieties.—First, Mr. T. B. Haywood, second, Mr. F. C. Pawle. Class 4, eight varieties, three trusses of each.—First, Mr. A. J. Waterlow; second, Mr. T. B. Haywood. Class 5, eighteen Teas or Noisettes.—First, Mr. A. J. Waterlow; second, Mr. T. B. Haywood; commended, Mr. T. W. Girdlestone. Class 6, twelve Teas or Noisettes.—First, Mr. F. C. Pawle. Class 7, twelve varieties, N.R.S. gold medal.—First, Mr. W. H. Trego; second, Miss Baker; commended, Mr. A. Slaughter. Class 8, nine varieties, N.R.S. silver medal.—First, Mr. E. B. Lindsell; second, Rev. A. Cheales; commended, Mr. E. Horne. Class 9, six varieties.—First, Mrs. Langton; second, Mrs. Ponsford; commended, Mr. C. E. Cuthell. Class 10, six varieties, three trusses of each.—First, Rev. A. Cheales; second, Mr. R. E. West; commended, Miss Baker. Class 11, nine any one kind.—First, Mr. W. H. Trego; second, Mr. E. Horne; commended, Mr. A. Slaughter. Class 12, nine Teas or Noisettes.—First, Mr. E. Horne; equal second, Mr. E. M. Bethune, Mr. W. H. Trego; commended, Rev. A. Cheales, Mr. C. E. Cuthell, Miss Baker. Class 13, six Teas or Noisettes.—First, Mr. W. D. Freshfield; second, Mr. A. Slaughter; commended, Mr. F. C. Pawle, Rev. A. Cheales. Class 14, table decoration for six persons, consisting of any kind of flowers and foliage, fruit may be added.—First, Miss F. Steele; second, Miss G. Waterlow. Class 15, device, consisting of Roses, with Ferns or other foliage.—First, Mrs. Harding; second, Miss G. Waterlow. Class 16, device, consisting of any kind of flowers and foliage.—First, Miss F. Steele; second, Miss G. Waterlow. Class 17, bouquet for buttonhole, consisting of one or more Roses or Rosebuds combined with foliage or other flowers.—First, Mrs. Harding; second, Mrs. Langton.

REINWARDTIA TETRAGYNE.

THOUGH not claiming to be a novelty in the strict sense of the term this plant has so long disappeared from cultivation that its re-introduction is especially welcome. It resembles the well-known *Linum trigynum*, but differs from that useful plant in the darker yellow colour of the flowers, which are produced in terminal and axillary racemes. The individual flowers do not last very long, but to compensate for that they are produced in succession during several weeks at a time when they are most valued—namely, in the winter, and that fact alone will be a strong recommendation to many gardeners who have to provide floral displays in the dull period of the year. Like the *Linum*, it succeeds in a stove

temperature or in a warm conservatory, growing and flowering freely in any good loamy soil and requiring very little special attention.

Reinwardtia tetragynae is a native of Nepal and Sylhet, and was known some years ago under the name of *Linum tetragynum*, by which it is described in the "Botanical Register" by Lindley in the matter accompanying a plate [t. 1826, vol. 16] representing *Linum mexicanum*. *L. trigynum*, and *L. repens*, also East Indian species, are referred to as distinct from other *Linums* in their shrubby stems and characters of the leaves and capsules, and Lindley remarks that "they might form a good section, though there do not appear to be characters sufficient to distinguish them as a genus." Since then, however, a different opinion has obtained favour, and the species illustrated in the woodcut, fig. 5, page 26, (kindly lent by Messrs. J. Veitch & Sons, Chelsea, by whom the plant has been brought into notice) is now referred to the genus *Reinwardtia*.

ROYAL HORTICULTURAL SOCIETY.

THE LIVERPOOL SHOW.

THE weather continued exceptionally fine the whole time this Show was held, and it is satisfactory to be able to record a substantial horticultural success as far as the Exhibition itself is concerned, though unfortunately the attendance was not so good as had been expected.

Wednesday was a busy day with the Council and officials, for in the morning the Fruit and Floral Committees assembled and several certificates were awarded. The Orchid conference was also held at about 11 A.M., Sir Trevor Laurence, Bart., M.P., in the chair, but although there was some discussion and several proposals were made, nothing was determined, and the subject generally is reserved for further consideration. In the evening a dinner was held in the Liverpool International Exhibition, at which the Hon. and Rev. J. T. Boscawen presided, the following gentlemen with many others being present:—Sir David Radcliffe (Mayor of Liverpool), Major Mason, Dr. Robert Hogg, and Messrs. W. Lee, Gaskell, W. Haughton, Holbrook, Richardson, J. Van Volxem, E. Pynaert, and C. Van Geert.

COMMITTEES—The chief exhibit before the Fruit Committee was a number of seedling Melons, none of which was, however, found to be sufficiently distinct to merit special awards. Mr. J. Muir, Margam Park Gardens, showed fruits of a new Tomato, a seedling obtained by crossing Dedham Favourite with Trophy, the fruits very even, of good size, and excellent colour. The variety was commended. A first-class certificate was awarded to Mr. T. Laxton, Bedford, for Strawberry Noble, a very handsome conical fruit of great size and good flavour but somewhat soft.

Messrs. James Carter & Co. offered prizes for the best fifty pods each of the following Peas:—Telephone, Stratagem, Pride of the Market, and Telegraph. The awards in this class (130) owing to the Judges confounding the four dishes put up in competition for the above prizes with those that were staged for the Society's prize for three dishes, were not made until the second day of the Show, when Mr. H. W. Ward, Longford Castle (who also took the Society's prize for the three dishes), was accorded first prize.

The Floral Committee awarded first-class certificates for the following plants, most of which have been previously described:—To Messrs. J. Veitch and Sons, Chelsea, for *Gymnogramma schizophylla gloriosa*, *Philodendron grandidentatum*, *Nepholpis rufescens triplinata*, *Pteris tremula foliosa*, *Rhododendron Aurora*, and *Protea cynaroides* (botanical certificate). To W. and J. Birkenhead for *Nephrodium Sangwelli*, *Lastrea montana coronans*, *Adiantum digitatum* (to be seen again). To Messrs. K. Iway & Son, Langport, Some set, for *Gaillardia Ormonde*. To Messrs. R. P. Ker & Sons, Aigburth, Liverpool, for *Crotons Newmanni* and *Aigburthensis*. To Mr. B. S. Williams, Upper Holloway, for *Araucaria excelsa Vervaeiana*. To Messrs. Backhouse & Son, York, for *Polypodium vulgare trichomanoides*, *Asplenium marinum plumosum*, *Chrysanthemum leucanthemum Puy de Dome*, *Hymenophyllum pectinatum*, and *Trichomanes meifolium*. To Messrs. H. Canuell & Sons, Swanley, for *Lobelia King of the Blues*, a very pretty variety dark blue with a white eye.

IMPLEMENTS.

In addition to the exhibits we noted in our report last week, the following received special awards in the several classes:—

HOT-WATER HEATING.—In the class for hot-water piping, modes of fixing and fitting the same, valves, &c., Messrs. Foster & Pearson were deservedly awarded the Society's silver medal. The valves were particularly good, and varied in size from 6 to 2 inch. The throttle valves are specially worthy of notice, for they are so made that they can be taken out and cleaned or renewed as occasion may require. This is a great advantage over the old valve, and may lead to this form of valve being more generally used. The method of fixing the joints of piping by this firm is also worthy of special note, and which allows of a pipe being removed at any time by loosening the next pipe. The joint is particularly neat, but need not be fully detailed, for only a short time ago it was figured and described in these pages. Messrs. Messenger & Co., Loughborough, were awarded the bronze medal in this class for their valves, which were particularly good, especially the H valve. Messrs. W. Richardson & Co., Darlington, showed capital valves in this class. The same may be said in favour of those of Mr. James Gray, Chelsea, London. Messrs. F. & C. Mee, Wood Street, Liverpool, Messrs. B. Harlow, Macclesfield, also had examples of a good joint fitted with lamp and patent putty and indiarubber rings, and then bolted together. The socket had a small groove, into which the ring was pressed, and thus fear of leaking was prevented.

IMPROVEMENTS IN GLAZING.—In the class provided for improvements in glazing, several competitors entered for the silver and bronze medals offered. Messrs. Foster & Pearson's examples were of the old system of putty glazing which has been generally adopted. Mr. S. Deard, Harlow, showed examples of his Victoria dry glazing, in which are employed brass screws and strips of copper or zinc, with a groove down the centre for the glass,

and which forms on each side of the zinc or copper used a letter C. The screws prevent the glass slipping, in fact this is impossible with the clip of zinc at the base. This is a good easy lasting system of glazing, and the Judges awarded Mr. Deard the silver medal. The bronze medal was adjudged to Hunt's patent automatic ventilator, which is worked by air, and can be so arranged that a rise or fall in the temperature will open or close the lights. Messrs. Halliday & Co. showed examples of dry lead glazing, which was praiseworthy, also their system of imperishable glazing with putty, and a lead cup to protect it from the action of the weather. This is undoubtedly an improvement of the old lead system. A system of dry glazing with hollow bars and cups grooved to prevent drip was shown, and the patent diagonal dry glazing was on view, but did not meet with much approval. Messrs. W. Richardson & Co., Darlington, displayed their system of glazing wall cases for the protection of fruit trees, in which the glass can be removed from the top without the use of a tool; their system of glazing vineries and other structures is also very commendable. The bars are grooved, and the lower portion of the bar being wider than the top, which allows of the glass being put in and out without breaking the wood. The glass rests upon putty, and a groove above is filled with the same material, and thus protected from the weather. Messrs. Messenger & Co. displayed examples of a large form of the old system of lead and putty glazing.

BOILERS.—In the class for boilers capable of heating 500 feet of 4-inch piping no awards were made, the Judges seeing nothing sufficiently distinct or worthy except the well-known forms, which were in nearly the whole of the collections staged on the Exhibition ground. For boilers capable of heating 2000 feet of piping the greatest difficulty was experienced in making the awards, as there were boilers of equal merit. The silver medal was, however, awarded to Messrs. Bennet Brothers, Liverpool, for a terminal end saddle (a very cheap one for its size) and their collection of boilers.

Mr. Joseph Bramham, 104, Dale Street, Liverpool, exhibited his improved saddle boiler with waterway back, a very powerful boiler with a large direct heating surface, and which is known in the neighbourhood of Liverpool to be one of the most powerful boilers in the market. There was no class in which his large "Allerton Priory boiler" could be entered, for it is capable of heating 5000 feet of piping and upwards. This is a flued saddle with waterway back and cap in front instead of brick arch, and is a very powerful boiler. The patent liner front was attached to this boiler and was without exception the best front in the Exhibition. Mr. Bramham may well claim credit for having perhaps the best front in the market for his well-known large boiler. Messrs. F. & C. Mee displayed a large collection of boilers of various shapes, which included his combination saddle boiler with hot-water bars. This boiler is the ordinary saddle with waterway back, with a smaller saddle arranged on the top and a half-saddle on each side. Messrs. Weeks & Co. had on view two of their world-famed large tubular boilers; Messrs. Halliday & Co., Trentham, the climax and other forms of boilers; Messrs. Foster & Pearson, Messrs. T. Green & Sons, Smithfield, Leeds, Messrs. B. Harlow, Mr. J. G. Wagstaff, Dukinfield, also staged large exhibits of boilers.

MOWING MACHINES.—Class 9 was for horse mowing machines to cut not less than 30 inches. The Chadborn and Coldwell Manufacturing Company, 223, Upper Thames Street, London, E.C. (manager, Mr. Thomas Clarke), exhibited their patent "Excelsior" horse mowing machine, which cuts and collects the grass, and can be fitted with shafts, seat, and castors if desired. This machine was tested, and proved to be very powerful and satisfactory in action on both short and long grass: it is readily thrown in or out of gear by a mechanism at the side, and the addition of rollers behind the cutter enables the machine to travel safely when not in action. The silver medal was awarded to the firm for this machine. The same exhibitors obtained an award of equal importance in the hand mower class for their patent Excelsior hand-power lawn mowers, which are constructed in various sizes, all being light, clean, and efficient in work, and fitted with several improvements. A silver medal was adjudged to Messrs. Barford and Perkins, Pete borough for the "Godiva" lawn mower, a chain machine, silent in action, quick and clean in cutting, and very light.

GARDEN POTTERY.—There was an extensive display of pottery, edging tiles, window boxes, &c., Mr. J. Matthews, Weston-super-Mare, having a particularly large and handsome collection. His red terra cotta vases in various sizes were greatly admired, the ordinary well-known pots, Strawberry tiles, ornamented window boxes, &c., constituting an important exhibit well worth the silver medal awarded. Mr. J. Crute, 14, Knight rider Street, London, E.C., also gained a silver medal for specimens of concave-bottomed pots, vases, flower-boxes, &c., executed in a brown earthenware.

GARDEN TOOLS.—A bronze medal was awarded to Messrs. W. Glass and Co., 64, Victoria Street, Liverpool, for a good representative collection of spades, rakes, hoes, harrows, and miscellaneous implements employed in gardens, all distinguished by strength and good finish. A patent turf-lifting machine from Mr. F. T. Drummond, Coran, Bridgenorth, Salop, was also commended. This ingenious machine was illustrated and fully described in this Journal, page 31, July 9th 1885. Dr. H. Swete, Baskerville House, Worcester, showed a "patent handy bedding and potting barrow," which is constructed with a moveable tray over the ordinary harrow, and which can be used as a potting bench, or for conveying plants in pots to or from the houses. The Judges awarded it a commendation.

Garden cutlery was well shown by the Standard Manufacturing Company, St and Arcade, Derby, who was awarded the bronze medal in that class for a varied exhibit of tree pruners, fruit-gatherers, pruning hooks, saws, hooks, and miscellaneous instruments of a similar kind admirably adapted for their particular purposes.

Wirework constituted an important portion of the implement exhibition, especially the collection from Mr. W. J. Bramham, 104, Dale Street, Liverpool (silver medal), in which were numerous elegant Rose-ries, Rose temples, arbours, archways, and flower-stands very tastefully designed. The bronze medal was secured by Messrs. Brookes & Co., 4, Cateaton Street, Manchester, for numerous handsome wire arches and flower stands.

Garden seats were admirably exhibited by Mr. H. Caesar, Knutsford, Cheshire, who obtained the silver medal for some handsome rustic chairs and sunnierous. Messrs. Wrench & Sons, Ipswich, were awarded the bronze medal also for a number of well-constructed chairs and garden seats in various designs, and with some ingeniously contrived methods of shading.

For an extensive series of meteorological instruments, Messrs. Joseph Davis & Co., Fitzroy Works, 6, Kennington Park Road, London, were awarded a silver medal. Their examples of barometers, thermometers, hygrometers, and many other instruments were excellent.

Garden engines, syringes, and rollers were well represented, Messrs. Barford & Perkins, Peterborough, being adjudged a bronze medal for their water ballast rollers, which are constructed at weights varying from 2 cwt. up to 2 tons. A patent syringe for watering plants on shelves, from Messrs. J. Crispin & Sons, 58, Milk Street, Bristol, was commended. Tubes curved at the end and of various lengths are employed for screwing on in the place of the ordinary roses, so that the water can be forced up to plants out of reach of the watering can.

In the decorations for conservatories class, Messrs. R. Halliday & Co., Middleton Works, Manchester, were awarded the bronze medal for samples of decorative glazing and ornamental flooring tiles. Messrs. W. Glassey and Co., J. Crute, and J. Matthews also contributed in this class. Garden tents and blinds were shown by Mr. J. Unite, 291 and 293, Edgware Road, in his usual style (silver medal). Similar exhibits from Messrs. W. Richardson & Co., Darlington, being commended. Mr. John Pinches, 27, Oxenden Street, London, S.W., had samples of his excellent and well-known metal labels, which were commended.

In the miscellaneous class the exhibits were very numerous and interesting. Mr. F. S. Trueman, Edgeley, Stockport, obtained a bronze medal for a collection of ornamental rockery stone, tufa, gravels, &c. A similar award was made to Messrs. Bennett Brothers, St. Thomas Buildings, Liverpool, for garden seats, implements, wirework, and other exhibits. Commendations were accorded to Mr. P. B. Harkin, 22, Dutton Street, Liverpool, for teak wood tubs, for plants, and teak for Orchid baskets; to Mr. S. W. Wood, 34, Moorfields, Liverpool, for fancy stationery goods: to the Horticultural and Agricultural Chemical Company, Tonbridge, Kent, for samples of a new insecticide and a syringing stand; to Messrs. W. Richardson and Co., Darlington, for glazed wall protectors, models of conservatories, boilers, &c.; to Mr. G. Bloxham, gardener to Sir Philip Dunscombe, Bart., Brickhill Manor, Bletchley, for a new fumigator well adapted for small houses; to Messrs. Blake & Mackenzie, School Lane, Liverpool, for postal flower and plant boxes, and samples of general horticultural printing. Amongst other exhibits of note were the "unique" folding postal boxes, from Mr. T. P. Bethell, 64, Stanley Street, Liverpool; capital samples of Orchid peat from Mr. H. G. Smyth, 21, Goldsmith Street, Drury Lane; specimens of the fish potash manure, from Messrs. J. Jensen & Co., 10, St. Helen's Place, London, E.C.; and a new and efficient beetle trap from Messrs. W. & J. Birkenhead, Sale, which has been found very useful.

THE BOILER CONTEST.

After an exhaustive trial of nine boilers for about eighteen hours, the temperature being periodically recorded and the quantity of fuel consumed accurately determined in each case, the prices of the boilers being also taken into account, the Judges unanimously decided to grant the silver medal to Messrs. F. & C. Mee, Wood Street, Liverpool, for their terminal saddle boiler with waterway bars, in Class 1, for heating 2000 feet of 4 inch piping. For heating 1000 feet of 4-inch piping the silver medal was awarded to Mr. Deards, Harlow, Essex, for his excellent spiral coil boiler; and the bronze medal to Mr. Witherspoon, Chester-le-Street, Durham, for his quick-acting Red Rose boiler. In the class for boilers heating 500 feet of piping the silver medal was awarded to Mr. Deards for a smaller form of the "spiral," bronze medals being granted to Mr. Wagstaffe, Dukinfield, for his tubular saddle boiler, and to Mr. Wood, Eastville, Bristol, for his horizontal tubular boiler. Further particulars will no doubt be given of these boilers, and of the trials to which they were subjected, in the "report" that we presume will be prepared by the Judges.

HORTICULTURAL AND BOTANICAL LITERATURE AND ART.

The section of the Exhibition devoted to literature was not a very full one, the contributions in the five classes being confined to few exhibitors. Concerning this the Judges reported to the Council as follows:—

"We have to report that the responses to the invitation for the exhibition of specimens of the literature of gardening at the Society's Provincial Show at Liverpool are less in number and importance than might have been expected. This is probably due in a large degree to the want of knowledge among those who could have made a good display of horticultural literature, and so have more fully carried out the objects of the Council. These objects are so excellent and important that we venture to suggest that before another provincial show be held detailed information be published in the horticultural journals, and further that the aid of amateurs be enlisted to make and exhibit collections of gardening books of present interest or of historical value. It would probably be a great help in this direction if the Council could secure the assistance of some competent authority to draw up a list of desirable works and to deal otherwise with the bibliography of horticultural literature. As many of the most important and valuable books are in public or town libraries, it would be possible, no doubt, to make arrangements with the authorities of such towns wherein future exhibitions are held to allow the exhibition of such works as they possess. We have made no award in Section A except in two cases, viz., 'high commendation' to the chromo-lithographer or printer of the Orchid plates illustrating 'Reichenbachia' on account of their merit as colour printing; and 2, a similar award to M. E. Pynaert for the illustrations to the 'Revue de l'Horticulture Belge' and the 'Bulletin d'Arboriculture.' We could find no common ground for comparison between the other exhibits in this section."

The section for botanical and decorative art was alluded to last week, but the following are also worth notice. A silver-gilt medal was awarded to Mrs. H. Turner, Langley, Slough, for a vase upon which was painted a beautiful wreath of Clematis. A silver Banksian medal was also awarded to Mrs. L. Petitgean, Great Crosby, for plaques representing Roses, Clematises, &c. A bronze Banksian medal was adjudged to Miss C. Goffey for a plaque representing Strawberries in flower and fruit. Other exhibitors were Mr. B. Gilbert Dyke Bourne, Lincolnshire, who showed a painting of a double scarlet Anemone; Mr. A. Foord Hughes, Wallington, who had some beautiful water colour paintings of Orchids; Mr. J. Udale, E'ford Hall Gardens, Tamworth, water colour paintings of Orchids and Cacti, very

faithful representations; Miss Buchanan, oil painting of Pansies, and painting of Passion Flowers on terra cotta; Miss Barron, Borrowash, panels of Richardias; R. G. Brook, Esq., St. Helen's, photographs of Orchids; Mrs. K. B. Cussons, Southport, photographs of Orchids, paintings of Roses, and large plaques of Roses.

RICHMOND SHOW.—JULY 7TH.

THIS Show was held as usual in the Old Deer Park, three marquees being there erected for the exhibits. Large as was the covered space provided, however, it was not too much, for the classes were numerous and competition was keen. Specimen plants and groups were, of course, a prominent feature, and fruit, vegetables, Roses, and table decorations were conspicuous in quantity and quality. Altogether the Show was an excellent one, admirably conducted.

The following is a brief list of awards in the principal classes; all could not be given:—Stove and greenhouse plants and groups filled the largest marquee most effectively, many handsome specimens and attractive groups being arranged. The first prize in the open classes for a group of plants fell to Messrs. Hooper & Sons, Twickenham, for a beautiful arrangement; Mr. Brown, St. Mary's Grove Nursery, being second, and Mr. James, Castle Nursery, Lower Norwood, third. Messrs. J. Jackson and Son, Kingston-on-Thames, were first for nine stove and greenhouse plants, showing very fine specimens, and Mr. James second. Mr. F. J. Hill, gardener to H. Little, Esq., The Barons, Twickenham, was the only exhibitor of six Pelargoniums and received first prize. Messrs. Jackson & Son were again to the fore in the class for six Orchids, showing nice pieces. Messrs. Hill and James were second and third. The other chief prizewinners for plants were—Exotic Ferns, E. D. Paul, Esq., Cambridge House; Fuchsias, Mrs. Welsh, Westcroft, Kingston; Zonal Pelargoniums, Mrs. Flack, Twickenham; and fine-foliage plants, Messrs. Hooper & Co. Some good plants were shown in the closed classes, and effective miscellaneous groups were arranged by Messrs. Laing & Co., Forest Hill; C. Lee & Son, Hammersmith; J. Veitch and Sons, Chelsea, and J. Jackson & Son.

Fruit was fairly well shown, Mr. H. Cakebread, gardener to Sir P. F. Rose, Bart., Rayners, Penn, Bucks, was first in the open class for six dishes, showing Foster's Seedling Grapes well, Black Hamburg fairly well, Peaches, Nectarines, Figs, and a Melon; Mrs. Meek, Poulett Lodge, Twickenham, being second; and Mr. J. Osman, gardener to L. J. Baker, Esq., Chertsey, third. For black Grapes the latter showed Black Hamburg well and won, Mr. Cakebread being second, and the awards were the same in the class for whites; Buckland Sweetwater, excellent bunches, being first. Mr. Coombs, Shen House Gardens, Mortlake, was first in the closed class for black Grapes; Mrs. Meek (Mr. Bates, gardener) being second; and Mr. J. W. Campin, gardener to T. Cave, Esq., Queensberry House, third. Messrs. Bates, Coombs, and Campin took the prizes for white Grapes. Other prizes for fruit were won by the exhibitors named and Messrs. Lamb, gardener to R. W. Starkey, Esq., Ham; E. Lake, gardener to Captain Boycott, Twickenham; W. Croker, gardener to W. Regester, Esq., Isleworth; and W. A. Older, Esq.

Vegetables were fairly good. In the open class for twelve dishes Mr. C. J. Waite, gardener to Col. the Hon. W. P. Talbot, Esher, was first, Mr. J. Coombs second, and Mr. H. E. Lambert third. Classes for local exhibitors and cottagers were also provided.

A few classes were provided for Roses in the open section, Messrs. Paul and Son, Old Nurseries, Cheshunt, taking first prize for thirty-six triplets with fresh blooms, no other entrants; and precisely the same remarks apply to the class for twenty-four singles. First, second and third prizes in the amateurs' classes for twenty-four blooms were won respectively by Messrs. Warwick, gardener to J. P. Kitchen, Esq., Hampton; R. E. West, Reigate; and Fanning, gardener to W. Clarke, Esq., Roehampton. Messrs. West and Warwick were first and second for twelve blooms; W. Truefitt, Esq., Teddington (Mr. Lambert, gardener), was third. The Roses and table decorations occupied one tent, and it was not the least admired, the arrangement of cut flowers in epergnes, baskets, on tables, &c., being most attractive.

STAGNANT WATER FOR TREES AND PLANTS.—I shall be glad to ask through the medium of the *Journal of Horticulture* how gardeners find their fruit trees and plants succeed when the supply of water they obtain is stagnant? Our main supply is from a stagnant pond, and I find plants or fruit trees watered with it when they have been in the same pots or borders a few months make very few roots and unsatisfactory growth.—W. J.



HARDY FRUIT GARDEN.

FIGS.—Good work may now be done for the fruit crop of next year by pinching the young growth to induce a free growth of sub-laterals, every one of which may afford some fruit. By this simple method we are able to obtain very abundant crops, and a glance at the way in which the fruit grows shows why we can do so. The fruit comes from the upper joints of the shoots, and therefore we see that within reasonable limits the quantity of fruit is very much in proportion to the number of shoots.

Thinning Fruit.—Pears, Apples, Peaches, Nectarines, and Apricots all require careful attention to the timely thinning of fruit if we would

have it really fine. Such thinning is of course only meant for the crop on trees, keep under close pruning, and so trained as to be comparatively dwarf trees. It is precisely on such trees that we ought to see fruit in full perfection of size, form, and colour, because they are so easily of manipulation. The branches are either short and stout or arc made secure to support, so that there is little if any risk of the fruit being shaken off by wind.

Watering.—The weather is our best guide in watering fruit trees. If we would have a full flow of sap we must at least water freely once a week, and this supply of liquid food comes best to our hand in the form of house sewage. Everyone having a fruit garden near a house can command a daily supply of it, and a little watchfulness and care will soon enable you to see how much is necessary. If the soil is porous and well drained there need be no fear of overdoing it while the fruit is swelling. Do not forget that moisture evaporates quickly from the soil in summer, and that to wait till it becomes dry and hard before watering is to run much risk of seriously checking the growth. When sewage cannot be had some plan or other will suggest itself for making liquid manure. We once found ourselves without sewage and without means of obtaining artificial manure; but necessity taught us to make a hole sufficiently large enough for our purpose in the soil itself. The bottom and sides were sufficiently puddled, plenty of sheep dung obtained from an adjacent pasture was thrown into it; it was then filled with water, and we had a liquid manure which, to judge from its effect upon the trees, could not well be surpassed. We used it to such good purpose through out a hot dry summer that it always comes to mind when we hear complaints of a want of means to overcome difficulties. "Where there's a will there's a way."

STRAWBERRIES.—The fruit is swelling fast, and means must be found to cover the soil so as to keep the fruit clean. A little clean litter is all that is required for an ordinary crop; but where fine fruit of such sorts as Dr. Hogg, Cockscorn, or Marguerite are grown we prefer wire supports with some litter over the soil to prevent splashing from heavy rain. Large fruit lying upon straw or litter soon spoils in a wet summer—become either musty or rotten and unfit for use. Pay close attention to time of ripening of each sort, and see if it is possible to improve your selection in any way. By having Black Prince upon a sunny bank, and Loxford Hall Seedling upon a north border as well as out in the full sunshine, with such intermediate sorts as Keens' Seedling, Sir Joseph Paxton, Lucas, James Veitch and Helena Gloede, you may extend the season by some weeks.

RASPBERRIES.—Reduce the number of suckers by judicious thinning to about as many as will be wanted for fruit-bearing next year. Do not be satisfied with either a small crop or small fruit. Raspberries require very rich well-drained soil, with plenty of sewage during the growing season.

FRUIT FORCING.

Late Grapes.—Examine these without delay for the final thinning, giving the berries ample room for swelling, which should be such that air can pass through the bunches and admit of a ready scrutiny for decayed berries. Keep the Vines free from all gross laterals, not allowing them to make strong entangled growth and have to remove it in great quantity. It only gives a check to the roots, and is one of the chief causes of shanking. Afford copious supplies of water or liquid manure, and mulch with light open material.

Young Vines.—Afford water liberally at the roots, mulching and keeping it moist so as to encourage surface roots, maintaining a moist atmosphere by frequent sprinklings of available surface, and syringe the Vines on fine afternoons, closing early to attain a heat of 90° or 95°. Ventilate early and freely through the early part of the day to insure a short-jointed thoroughly solidified growth, and allow the laterals above the wood the Vines are to be cut back to, to ramble at will. Do not allow any interference with the principal leaves that feed the buds at their base expected to fruit next season. They must have full exposure to light and air, and be kept clean and healthy as long as possible.

Pot Vines for Early Forcing.—The growth being completed, lessen the supplies of moisture; discontinue syringing, moderating the supply of water at the roots; admit air freely, and afford all the light practicable to the principal foliage. If the canes do not ripen well keep through the day at 85° to 95° by moderating the ventilation, and admit air freely at night.

PEACHES AND NECTARINES.—**Early Houses.**—The fruit being cleared off syringe forcibly to dislodge red spider. Cut away all shoots that have borne fruit, except extensions, and do not leave more shoots than will be required for next year's fruiting. Winter pruning should be abandoned. The roof lights not being moveable ventilate to the fullest extent possible, and give the inside borders thorough waterings with liquid manure, which will help the trees to plump the buds. If the roof lights are moveable take them off about the middle of the month. Rain has a peculiarly invigorating effect on forced trees, and the borders become thoroughly moistened in autumn.

Succession Houses.—With the fruit taking the last swelling syringe forcibly to keep down red spider; indeed, the trees must be cleansed of this pest if there be any before the fruit commences ripening, either by means of the syringe or the application of an insecticide. Supply liquid manure abundantly to inside borders, unless the trees are gross, when it will only aggravate the evil. Mulch inside and outside borders, keeping the material moist so as to have the roots active near the surface. Ventilate a little constantly, and increase it early in the morning with the advancing sun, keeping through the day at 80° to 85° with sun, and closing sufficiently early to rise to 90° or 95°, and admit a little air

before night. As the fruit approaches ripening ventilate more freely, and do not allow so great a range of temperature. Keep water from the fruit, but maintain a good moisture by damping available surfaces, especially on hot days. Tie and regulate the growths, having the fruits well exposed to the sun. Stop laterals to one or two joints of growth, and avoid overcrowding.

Late Houses.—Train the growths thinly, keep laterals closely pinched, and stop gross growths so as to cause an equal distribution of the sap and growth over the trees. If not restrainable by pinching remove them altogether. Reduce the fruits to the number that will be required for the crop, and keep the temperature steady by liberal ventilation on all favourable occasions. Syringe to keep down red spider, water and mulch inside borders, also outside if the weather be dry. Be guided in the use of liquid manure by the condition of the trees. If not too vigorous and carrying heavy crops liquid manure will be necessary, yet not so much as for weakly trees, but keep it from trees that make strong wood and have a tendency to become over-luxuriant.

CUCUMBERS.—A few seeds may now be sown for late summer and early autumn fruiting. The plants from this sowing will be fit to plant out in about a month. They do well in frames, and come in useful where plants, from having been in bearing some time, are exhausted. Plants in full bearing must have attention in thinning exhausted growths, removing bad foliage, stopping, tying, and regulating so as to keep up a succession of bearing wood. Add a little fresh soil to the surface from time to time, and light mulching of stimulating material. Syringe at closing time, and maintain a good moisture all day; it is infinitely better than shading. Avoid too much moisture in dull weather, it only makes the growths soft and the foliage more susceptible of injury on a bright period ensuing. Afford liquid manure copiously once or twice a week, according to circumstances. Close early or at 85°, and so as to gain 5° to 10°, and only employ fire heat to prevent the temperature falling below 60° at night. Avoid overcropping, especially with young plants, and do not allow the fruit to hang too long, as these exhaust the plants and prevent in a great measure a good and continuous supply.

THE BEE-KEEPER.

SECTION RACKS AND HOW TO MAKE THEM.

(Continued from page 15.)

To make six racks, each 15 inches by 14 inches by 4½ inches (inside measure), fitted with shutters and bars at the bottom, 17 feet 8 inches of 11-inch wood will be required, and when a board of half inch wood of this size is obtained it must be cut with the greatest care, for one little mistake may throw out all our calculations. A rack of 15 by 14 inside or 16 by 14 outside measure will require 60 inches of wood 4½ inches wide for four sides alone or 30 inches of 8½, but it will suit our purpose better to use wood 11 inches wide, as then not only shall we have the two sides and ends—and one end is loose to form the shutter—but also the permanent end of 2½ inches high to retain the glass and shutter as before explained, and in addition 2½ inches remaining after the 16-inch sides have been cut to form two strips for nailing along the base of the rack to sustain the sections, leaving only two others to be provided. To make six racks then 15 feet of 11 inch wide wood is required, and to this an addition of 32 inches to provide two more—1½ inch strips for each rack and also the small pieces required for filling in the spaces left between each of the strips must be made—so that in all 17 feet 8 inches of 11 inch wide wood must be procured, and from this can be cut all the material we require. Half-inch good white wood can easily be bought at 2½d. the running foot, a "width" of 11 inches being a carpenter's foot, of that the cost of the wood will be 3s. 8d., and if to this is added a day's wage at 5s. and 10d. for nails and extras, if any can be discovered, we get 9s. 6d.; thus the difference between purchase price and home manufacture is, taking the average, 10s. 6d. Two can be made for the price of one purchased, and 5s. be pocketed by the maker instead of being sent away and lost.

It may be well to give a few hints on how to proceed in cutting the wood in case any misapprehension has been occasioned. The wood being 11 inches wide will cut two sides of 4½ inches each, and leave 2½ inches, and from this width of 2½ inches two strips are cut for nailing along the bottom of such sides, these strips being planed down so as to leave any bee space the apiarian may prefer. Next two ends

of 14 inches long by $4\frac{1}{4}$ inches wide can be cut, and again a width of $2\frac{1}{2}$ inches will remain, and this will form the permanent end, one of the other ends being used as the loose shutter. These pieces may now be nailed together, the 16-inch sides being nailed outside the ends in order to give a 15-inch inside measure, when nothing will be wanting to complete the rack but two other strips of $1\frac{1}{4}$ inch each, and these must be cut from the other end of the board, and some pieces to fit in between each strip in order to keep all snug and warm, and prevent the egress of the bees from the rack. The whole is now complete, but I may add that in cutting these pieces the same end of the board must be used as the two last mentioned strips were cut from, and the other end must be cut in the manner first described. Each strip to be placed not more than 4 inches apart, so that the sections will stand firmly and not be liable to fall through and so cause trouble. If separators are used—and they are not desirable only but necessary—they will if the same width as the sections rest on the strips, but if it is preferred to have rather narrower separators, to leave more room for the bees, strips of wood of height sufficient to raise the separators—which will be cut to make a like space at the top—so as to leave the desired room, can be laid along the sides of the racks, and they will thus easily be maintained in position. No separator will be required for the outer side of the three extreme sections, the glass answering the purpose quite as well, and the sight is therefore not obstructed.

If from these directions any bee-keepers are enabled to make at home racks which they had intended to purchase my desire will have been attained, for knowing the great necessity for economy in appliances I cannot but regard a saving of 10s. 6d. per stock as most desirable, and if a like economy was practised in every department of the apiary less would be heard of decreasing profits and more of substantial benefits arising from bee-keeping.—FELIX.

PREPARING FOR NEXT YEAR.

ALTHOUGH the honey season is only commencing with us it is our greatest care about having everything arranged for the best for another year. The temperature, particularly during the night, has been by far too low to justify any manipulation on our part beyond adding supers. For about a week past the night temperature in many places has been as low as 32°. With us, in a rather sheltered situation, it has been so low as 36°, and for the most part of a week during the day 55°, with a strong dry wind, unpleasant and unfavourable to vegetation; consequently bad for bees, and not suitable for meddling with them. I will, however, now commence queen-rearing. As the season is and has been backward, I will form each nucleus from two combs of brood and bees. Each comb shall contain a royal cell from a choice queen, but the other comb shall be taken from another hive that shall have bred many drones, so that there shall be no sanguinity of blood between the drones and the young princesses, which shall, however, have been nearly matured in the old and populous hive before forming into nuclei. Then these shall be removed to a distance free from the influence of other drones.

Syrians shall be bred and kept at home for use during August, when the other drones are either slaughtered or at the Heather. The same care will be taken with these to have drones from an alien stock.

I am anxious to give these Syrians a trial to see if acclimatisation by breeding a time here will not make them hardier during winter, tenderness being a great drawback to these otherwise pretty, prolific, and good honey-gathering bees. Spiteful they are, but it is probable if they can be acclimatised they may become milder in temper.

The bees of pure queens crossed are while I am writing (28th June) busy filling their supers with comb. When other hives are comparatively idle, Carniolans excepted, these, as usual, are equally busy.

My main object is to get first a sufficient number of nuclei with fertilised queen. Immediately they commence laying I will begin and feed. When the young bees begin to appear I will extend the hive gradually with full-sheeted frames of comb foundation. By the time the bees cover four frames or so the hives that were at the Heather will be home. Each nucleus will get its hive filled with provisioned combs from the Heather hives, and if need be their bees, after their queens have been killed, will be joined to the nuclei. I will allow them to stand a few days unmolested, keeping a strict watch over their movements; therefore I will examine every one. If the brood of any are abnormal, or if any of the queens have a ragged wing or minus a foot, they will at once be killed. Mutilated queens, either by clipping the wings or any accident whatever, are doomed to destruction sooner or later by the bees, so nothing but perfect and healthy queens will be kept. After this final examination I will cover up thoroughly, particularly above, with porous material, and interfere no more with them till April or May. Last year I had a number of queens

more than was necessary for my own use, some of which I presented to bee-keepers in want of queens and anxious to have a trial of the foreign varieties. Four of these surplus ones I kept, and although the bees barely covered one frame in August they are now full strength and have their first cover of supers, which they are rapidly filling with comb.

It is only queens older than one year that I have any trouble with, either with swarming when not wanted or dying at a time during spring when the loss is irreparable. Every year convinces me more and more of this, and it shall only be imported queens that I shall attempt to keep more than one year; but I shall do my utmost to get the benefit of their full egg-laying power the first year. It is the only sensible and profitable way of doing, and the easiest way of marking the queens to know their age. It is not only advisable to reduce the ontlay and annoyance of having superfluous and unnecessary appliances, but to reduce the labour in marking, anxiety, and risk with old queens.

The position of the bees in the hive and where located is an important matter for the proper wintering of bees. I should be very glad to hear the opinion of your other correspondents upon this very important point.

It is the well wintering of bees that success in summer is to be looked for. Failing good wintering means failure throughout the year. What I have to say upon this matter will be held over for another paper, but shall be glad to hear the opinions of others.—A LANARKSHIRE BEE-KEEPER.



* * All correspondence should be directed either to "THE EDITOR" or to "THE PUBLISHER." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

TO CORRESPONDENTS.—We desire to assure those of our correspondents whose letters and communications are not promptly inserted that they are not the less appreciated on that account. Our pages are practically filled several days prior to publication, and letters arriving on Wednesday morning, except by special arrangement, are invariably too late for insertion. The delay in the publication of some of these is not of material importance, but reports of meetings and shows held a week previously lose much or all of their value if not received in time to appear in the current issue.

Goldfish in Pond (*Mrs. Brown*).—After puddling the sides of ponds they are lined with shells, tiles, or stones, to prevent the fish destroying the banks and making the water muddy. We do not know of any better remedy, but if any of our readers do we will readily publish it if particulars are forwarded for that purpose.

Ice Houses (*R. P.*).—We cannot give the requisite particulars this week, but will endeavour to do so in our next issue. Mr. Ward stated in this Journal last December (page 534) that though there is an excellent ice house at Longford Castle he found an outside ice rack answer his purpose, as it gave a supply of ice for sixteen months. Still, your employer may prefer a house, and in such a complete and well appointed establishment as his it should be a very good one. The subject shall have further attention.

Solanums not Fruiting (*A Subscriber*).—Assuming your plants are judiciously watered, we can only suggest that you give them more air. You say you give them "plenty," but we doubt if that is so. They should not be "shut up at night" during such weather as this, but the lights should be drawn off and the dews would benefit the plants. They set their fruit very well planted out or plunged in a warm border and properly watered. The soil in the pots should be quite firm.

Bertolonias (*Rosa*).—We expect your plants received a slight check in transit. They require close confined treatment, such as you appear to be giving them, but if they display signs of damping you must admit a little more air. It is a good plan after a very hot day to lift off the light, replacing it again in the morning; the drier atmosphere of the house during the day does not suit them. Your description of the white-flowering stove plant is insufficient to enable us to give the name. If you forward us a flower we may be able to do so.

Thrips on Vines (*A Constant Subscriber*).—You may safely fumigate the house the Grapes in which are changing colour, being careful to deliver the smoke cool, and not to give an overdose. It will be necessary to fumigate on two or three consecutive evenings, and in bad cases repeat in the course of a week or ten days, as no amount of smoke will destroy thrips' eggs, and as they hatch out they must be destroyed; therefore keep a sharp look out, and fumigate whenever an insect is seen. In the case of the later house it will be necessary to proceed very cautiously, as keeping the house close for fumigation is likely to injure the crop, the Grapes being in that condition when most likely to scald; therefore in fumigating admit air in the early part of the following day, so as to dissipate any accumulated moisture before or by the time the sun falls powerfully upon the house.

Cucumbers without Ventilation (*J. W. C.*).—Mr. Whittaker grows the whole of his Cucumbers without ventilation, and nearly all the Prescott growers follow the same practice. They find the afternoon sun the most

injurious to the plants, and therefore shade lightly on the west side of the structures. The shade usually employed is a little whitening and water, or milk mixed with it, sprinkled on with a whitewash brush. If air is admitted the plants are invariably attacked by red spider through the moisture of the house being evaporated. When the house is kept closed there is no escape for moisture, and the foliage of the plants remains healthy and clean, and there need be no fear of burning as long as plenty of moisture is maintained. If air is once admitted the practice must be continued, or the plants are certain to become burned. Abundance of water is essential, both at the roots and in the atmosphere, when growing the plants on the non-ventilating principle.

Palms in Boxes (Mrs. Lamb).—It is not possible to keep the plants to their present size, as they must make some growth to keep them furnished with foliage, but you need not increase the size of the boxes if you give liquid manure and surface the boxes with some short manure if there is space. The manure should be thoroughly decomposed. A slight dressing of fibrous loam with a half pint of Standen's or any of the advertised fertilizers to every peck of loam is a capital surface dressing, putting it on about an inch thick after removing any loose surface soil. It may not be practicable to apply the surface dressing, through there not being space in the boxes, in which cases strips of zinc may be placed all round so as to give the depth necessary, pushing them between the soil and wood. The liquid manure must not be given strong; soot water, half a peck to 30 gallons of water, or a tablespoonful to a quart of water, is a good liquid applied once or twice a week for keeping the foliage a deep green, which is so desirable. It will not answer to remove the soil and prune the roots. Could you not exchange the plants for others of smaller size?

Insects on Marechal Niel Rose (A Twelve-years Subscriber).—The insects enclosed in the box are scale, which we presume is only on the wood, the best remedy for which is to remove it with a brush, using a soft-soap solution 4 ozs. to the gallon of water. This being a tedious process, you may sponge with petroleum—a quarter pint to 4 gallons of water, in which half a pound of soft-soap and 1 oz. soda has been dissolved. The mixture should be stirred up briskly before and whilst being applied, so as to keep the petroleum thoroughly mixed with the solution, or alternate squirts should be made into the mixture and on the plant. If this is not done the petroleum will float, and some parts of the Rose will receive little of the oil, whilst others will receive it much stronger, and be seriously damaged, and on the other hand the insects will not be destroyed. The tree must be evenly and thoroughly wetted with the solution, which, if thoroughly mixed, is one of the most efficacious of insecticides. It should be applied in the evening not on the morning of a possible sunny day.

"Insects" on Fruit Trees (E. D. O.).—The wood you have sent this time is different from that submitted to us on a former occasion, which had foliage infested with aphides, and the appearance the leaves presented prompted the reply given on page 520 of last volume. Now you send old wood wrapped in cotton wool, the particles of which adhere so closely as to hide what it is desirable to properly examine. The wood is affected with "rust" and lichens, which are the effects in most cases of the roots being in wet soil. Imperfectly nourished and immature wood invites the growth of fungi and lichens, the remedy for which is thorough drainage and a good dressing of calcareous matter. Try the effect of a good dressing of lime in autumn at the rate of a bushel per rod (30½ square yards), and mix it with the top 6 inches of the surface soil, and afterwards mulch with short but fresh manure. This should be done not later than early December. Cut out all the dead wood, and dust the branches after rain with quicklime, which will destroy the lichen, but it will recur unless the cause is got rid of—viz., poverty of soil, and generally, though not always, through water lodging in the subsoil.

Grapes Scalded (Merchant).—It is caused by the sun acting upon them powerfully whilst wet or covered with moisture, whether it be in the shape of water from syringing, moisture resulting from condensation through the night, or from evaporation in the earlier part of the day, the berries not being beated so quickly the air moisture is condensed on them. The only remedy is to keep the house rather warm during the night so as to prevent the deposition of moisture, a little warmth in the pipes with a free circulation of air in the early part and through the day being necessary, with sufficient at night to cause a buoyant atmosphere. This will only be necessary for a fortnight or so, as when the Grapes change colour for ripening the danger of scalding is past. Discontinue the syringing, or if you must syringe to keep down red spider it will be necessary to shade the roof with tiffany or some other light material when the sun is powerful. Scorching is also very prevalent this season, the remedy for which is gentle warmth in the pipes so as to admit of a little night air, and induce a circulation, and free ventilation in the early part of the day, and not closing so early in the afternoon as usual under different circumstances. Scorching and scalding are most prevalent during bright weather succeeding a period of dull, moist, or cold weather.

Strawberry Runners (M. F.).—The first runner on the wire is selected because it is the strongest and has more time to get rooted, and so become an earlier, better rooted, stronger, and more fruitful plant; but the second runner is just as good as the first, only it from being later and not so well nourished as the first runner it is weaker and does not attain to such vigour as the first which shows fruit the following season, the second runner sometimes not doing so, or producing weak trusses. There is not a particle of difference between the first runner and the second in fruitfulness, and you have no reason to fear your runners not fruiting though they are taken from the plants which were second runners of fruitful plants last season, and from being late and weak have not fruited this season. The second and third runners are as fruitful as the first, only they require more time to become sufficiently strong for fruiting. Hence first runners are the best, the other being removed so as to concentrate as much strength as possible on them, and secure vigorous plants with well-developed heart buds for forcing or affording a full crop of fruit outdoors the first year. It is different taking runners from fruitful plants—whether it be first, second, or third runners all are fruitful—and taking runners from sterile plants, which are less likely to fruit on the first runners than on the more weakly second and third. Your second runner plants will, no doubt, fruit well another season, and the runners from them will certainly not be sterile.

Names of Plants.—We only undertake to name species of plants, not varieties that have originated from seed and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in firm boxes. Slightly damp moss or soft green leaves form the best packing, dry cotton wool the worst. Not more than six specimens can be named at once. (C. F. T.).—The name of your tree is, we believe, *Magnolia acuminata*. (L. M. W.).—It is the true Martagon Lily, which is occasionally found in a wild state in this country.

Bees (Amateur).—Letters of inquiry arriving just as we are going to press cannot be fully answered in the "next issue." If your bees swarm shake them into a hive. It is not necessary to use essence of peppermint or anything else. If you are timid and "dodge about" when attending to your bees you will get stung if not protected.

COVENT GARDEN MARKET.—JULY 7TH.

ALL sorts of outdoor fruit to hand in good supply. Trade falling off.

FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples ½ sieve	0	0 to 0	Oranges 100	4	0 to 6
Cobs, Kent .. per 100 lbs.	27	6 30	Peaches per doz.	4	0 10
Figs dozen	3	0 4	Pine Apples English .. lb.	2	0 3
Grapes lb.	1	0 3	Plums ½ sieve	0	0 0
Lemons case	10	0 15	St. Michael Pines .. each	4	0 6
Melon each	1	6 3	Strawberries .. per lb.	0	6 1
Cherries ½ sieve	5	0 10			

VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Artichokes dozen	1	0 to 0	Lettuce dozen	1	0 to 1
Asparagus bundle	2	0 5	Mushrooms punnet	0	6 1
Beans, Kidney .. lb.	0	6 0	Mustard and Cress punnet	0	2 0
Beet, Red dozen	1	0 2	Onions bunch	0	3 0
Broccoli bundle	0	0 0	Parsley .. dozen bunches	2	0 3
Brussels Sprouts .. ½ sieve	0	0 0	Parsnips dozen	1	0 2
Cabbage dozen	1	6 0	Potatoes cwt.	4	0 5
Capicums 100	1	6 2	„ Kidney .. cwt.	4	0 5
Carrots bunch	0	6 0	Rhubarb bundle	0	2 0
Cauliflowers dozen	4	0 6	Salsafy bundle	1	0 1
Celery bundle	1	6 2	Scorzonera bundle	1	6 0
Coleworts doz. bunches	2	0 4	Seakale per basket	0	0 0
Cucumbers each	0	8 6	Shallots lb.	0	3 0
Endive dozen	1	0 2	Spinach bushel	3	0 4
Herbs bunch	0	2 0	Tomatoes lb.	0	6 0
Leeks bunch	0	3 0	Turnips bunch	0	4 0

PLANTS IN POTS.

	s. d.	s. d.		s. d.	s. d.
Aralia Sieboldi .. dozen	9	0 to 18	Ficus elastica .. each	1	6 to 7
Arbor vitae (golden) dozen	0	0 0	Fuchsia per dozen	6	0 12
„ (common) dozen	6	0 12	Foliage Plants, var. each	2	0 10
Arum Lilies dozen	0	0 0	Genistas dozen	0	0 0
Azaleas dozen	0	0 0	Hydrangea .. per dozen	6	0 12
Bedding Plants, var. doz.	1	0 2	Ivy Geraniums per dozen	3	0 6
Begonias dozen	6	0 9	Lilies of the Valley, in pots, per doz.	0	0 0
Calceolarias .. per dozen	4	0 9	Lobelias per dozen	4	0 6
Cineraria dozen	0	0 0	Marguerite Daisy dozen	8	0 12
Cyclamen dozen	0	0 0	Mignonette .. per dozen	4	0 8
Cyperus dozen	4	0 12	Musk per dozen	2	0 4
Dracena terminalis, dozen	30	0 60	Myrtles dozen	6	0 12
„ viridis .. dozen	12	0 24	Palms, in var. .. each	2	6 21
Erica, various .. dozen	12	0 24	Pelargoniums, scarlet, doz.	3	0 6
Euonymus, in var. dozen	6	0 18	Pelargoniums per dozen	6	0 15
Evergreens, in var. dozen	6	0 24	Spiraea dozen	6	0 12
Ferns, in variety .. dozen	4	0 18			

CUT FLOWERS.

	s. d.	s. d.		s. d.	s. d.
Abutilons .. 12 bunches	2	0 to 4	Marguerites .. 12 bunches	3	0 to 6
Anemone .. doz. bunches	0	0 0	Mignonette .. 12 bunches	3	0 6
Arum Lilies .. 12 bunches	4	0 6	Pelargoniums, per 12 trusses	0	9 1
Azalea 12 sprays	0	0 0	„ scarlet, 12 trusses	0	4 0
Bouvardias .. per bunch	0	6 1	Paeonies, various 12 blooms	1	0 2
Camellias .. 12 blooms	0	0 0	Ranunculus .. 12 bunches	2	0 4
Carnations .. 12 blooms	1	0 3	Roses 12 bunches	4	0 9
Chrysanthemums 12 blooms	0	0 0	„ (indoor), per dozen	1	0 3
Cowslips .. doz. bunches	0	0 0	„ Tea dozen	0	9 2
Daffodils .. 12 bunches	0	0 0	„ red dozen	1	0 2
Epiphyllum .. doz. blooms	0	0 0	„ Moss .. 12 bunches	6	0 12
Eucharis .. per dozen	4	0 6	Primrose, Yellow, dozen	0	0 0
Gardenias .. 12 blooms	2	0 4	„ dozen bunches	0	0 0
Hellebore .. doz. blooms	0	0 0	Pyrethrum .. 12 bunches	4	0 9
Hyacinths, Roman, 12 sprays	0	0 0	Spiraea 12 sprays	0	6 1
Iris 12 bunches	9	0 18	Stephanotis .. 12 sprays	2	0 3
Lapageria, white, 12 blooms	0	0 0	Tropeolum .. 12 bunches	1	0 3
Lapageria, red .. 12 blooms	1	0 2	Tuberose .. 12 blooms	0	6 1
Lilac per bunch	0	0 0	Violets 12 bunches	0	0 0
Lilium longiflorum, 12 blms.	3	0 6	„ „ „ „ „ „ „ „	0	0 0
Lily of the Valley, 12 sprays	0	0 0			



THE HAY CROP.

GLORIOUS weather has come to us in the very nick of time for the haymaking, and while turning it to full account to "make hay while the sun shines," it will indeed be well with

our readers if they find no occasion to regret failures in the crop. A full even crop of Grass is by no means such a common thing as might be supposed. Many a meadow, which to the casual observer seems to be in a flourishing condition, will not bear the test of critical inspection. It is precisely when the Grass is in bloom and is ready for the mower that an inspection can be made most usefully, for then faults and failures are before us, and we are able to decide upon such subsequent improvements as may appear necessary. Experience has shown that a full crop of hay is not a mere thing of seasons upon a well-managed pasture, but that it may be reckoned upon with a greater degree of certainty than most farm crops, and that it is only the time of full development which depends upon the weather. This is a matter concerning which we would have no mistake, for it is one of considerable importance; may we not add that it is one not generally well understood?

At the time of writing this article we have got about half way through our own haymaking, and upon the home farm we have ample reason to feel dissatisfied with the crop—not with the hay, that is excellent both in colour and quantity, but it is sadly deficient in quantity. The cause of this unsatisfactory state of things is generally poverty of soil, and only in one instance is it owing to a want of drainage. This Grass land came into our hands about a year ago. So far we have only been able to effect a slight improvement in it by means of sheep-folding, but an effort will be made next February to begin a regular course of manure-dressing. No farmyard manure will be used, but the work of improvement will depend entirely upon sheep-folding and chemical manures. How well such treatment will answer was shown this season. A meadow upon which sheep were folded last autumn joins a piece of arable land under Oats without any dividing hedge. When the spring dressing of artificial manure was applied to the corn, enough of it was blown upon a strip of Grass to render it fully twice as vigorous as the remainder.

In the application of manure to Grass land we have in view its permanent improvement, and the benefit derived is not solely confined to the crop of hay, but is also visible in a strong and abundant aftermath. The improvement is gradual and progressive rather than a bound from poverty to plenty in a single season. We have found that an annual outlay of from 20s. to 25s. an acre in the best chemical manures is sufficient to reclaim the poorest pasture, provided the manure is applied in February, and the land is relieved of superfluous water by drainage. Without drainage the manure has very little effect, and we know nothing more tantalising than the sight of undrained Grass land in spring and early summer. Hardly any effect is produced upon it by genial weather; there it lies, sullen and inert, in spite of rain and sunshine, just as though the land was under a spell. Nothing can be more simple than the remedy, for we have only to put in enough drains to draw off and prevent any other accumulation of superfluous water, and a change is soon visible in the herbage. It is hardly possible that anybody having read the quotations upon drainage given last week, can fail to understand its wholesome effect upon such Grass land. It by no means follows that because land is water-logged that it is soft and boggy. It may be, and often is, as firm to the tread as other land, but it is also as cold and unproductive as any bog.

Pleasant indeed is it to turn from such neglected pastures to others in high condition, arising solely from judicious treatment. It has fallen to our lot to undertake the reclamation of neglected Grass land in two counties wide apart, and we have proved most conclusively that the poorest pasture well repays for careful culture. Some faith and steady perseverance must be brought to bear upon the work, and then success is bound to follow, our efforts in the end being crowned with success so full and abundant as renders the work very profitable. This, after all, is the only safe test. A fresh green sward is, no doubt, an agreeable sight, but we like it to precede and follow big hayricks. Let it be always remembered that a heavy crop of hay is somewhat exhaustive,

and that good Grass land soon deteriorates. We cannot avoid using manure for a single season with impunity; depend upon it a moderate annual dressing is the best course to follow in our treatment of pastures good and bad. The mistake made by many a farmer is in trusting solely to the excrement of animals turned out to graze upon pastures for manure. One of our tenants recently showed us a meadow in which he had a lot of bullocks cake-fed last season, yet the growth this spring was entirely unsatisfactory. Yet, could he reasonably expect a strong even growth from bullock-grazing? Gladly would we have told him something of our own experience of sheep-folding and chemical manures, but that is not easily done to a man whose evident egotism tells one plainly that he at any rate has nothing to learn. We may, perhaps, be pardoned for thinking it a little hard when such a man demanded a reduction of 25 per cent. upon his rent.

WORK ON THE HOME FARM.

Haymaking continues to be the chief business now. We never had more favourable weather for it. Not only has the work been done well and quickly, but the hay is excellent, alike good in colour and flavour. In such exceptionally fine weather there is some risk of overmaking the hay—of having it so much dried by the sun—as then there is insufficient fermentation in the rick to promote a full development of flavour. The second growth of Red Clover is growing freely, of which we are glad, as we intend folding sheep upon it later on. Excellent hay has been made from the first growth, as well as from that upon mixed layers. Fortunate indeed were we in getting the Mangolds thinned and well hoed before haymaking began. Swede-hoeing was begun, but it will probably remain unfinished till after the haymaking unless we notice too great an overgrowth of weeds. The plants are remarkably healthy and are growing fast now, all risk of fly attacks being over. Winter Oats have improved wonderfully during the past week, and the crop now bids fair to be a fine one. With such fine weather now we think this crop will be ready for harvest about the third week of July. When it is cleared we intend sowing some *Trifolium incarnatum* upon the land in view, securing a strong plant before cold autumnal rains set in. We have followed Winter Oats with a crop of White Turnips for sheep-folding upon the land. *Trifolium* we may add is much prized in spring to follow Rye; it also makes capital stover for horses. Both White and Red Wheat and Barley are coming well into ear; much straw will probably be short in length, but the ears give promise of a full crop of grain. Late-sown spring Oats upon light land are suffering from drought; a few hours' rain would do much good to them and the root crops. Evidence of a short supply of food is now seen in a crowded sheep market every week. Prices rule low so low that small or cull lambs are very cheap indeed. Old sheep, too, can be had at prices which are very tempting, and we have been buying a considerable number for folding. Sheep-dipping must now be done to destroy ticks and prevent attacks of fly. The shepherd should also have a bottle of Cuff's ointment in readiness for any attacks of fly which may occur, for it should not be forgotten that there is always more or less risk of this in very hot weather. Let cows and bullocks have free access to sheds from the extreme heat of the sun, and to avoid gad flies as much as possible. A supply of Tares should also be kept in the racks, especially if there is a tendency to bareness in the pastures.

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude, 111 feet.

DATE.		9 A.M.					IN THE DAY.				Rain
1886. June-July		Barometer at 32° and Sea Level	Hygrometer.		Direction of Wind.	Temp. of Soil at 1 foot.	Shade Temperature.		Radiation Temperature		
			Dry.	Wet.			Max.	Min.	In sun.	On grass.	
		Inches.	deg.	deg.		deg.	deg.	deg.	deg.	deg.	In.
Sunday	27	30.153	65.2	55.8	N.E.	69.0	76.6	54.4	125.4	49.0	—
Monday	28	30.206	67.9	56.6	E.	69.4	79.3	55.0	127.7	48.6	—
Tuesday	29	30.229	68.9	60.3	N.E.	61.2	80.2	51.1	121.3	44.8	—
Wednesday	30	30.259	67.6	59.2	N.	61.2	76.7	54.2	126.8	45.8	—
Thursday	1	30.288	63.8	55.7	N.E.	61.4	75.8	48.6	120.6	44.2	—
Friday	2	30.324	60.2	56.3	E.	61.7	81.8	52.8	120.2	47.4	—
Saturday	3	30.317	72.0	62.6	N.E.	62.5	86.3	53.6	121.2	49.4	—
		30.254	66.5	58.1		61.2	79.5	52.8	123.3	47.2	—

REMARKS.

27th.—Brilliant, and nearly cloudless till 5 P.M.

28th.—Fine and hot.

29th.—Bright hot morning, threatening in afternoon with spots of rain, fine evening.

30th.—Fine and bright throughout.

1st.—Almost cloudless, a pleasant breeze.

2nd.—Bright, hot, and calm.

3rd.—Fine and hot, occasional clouds.

A hot dry week, hotter than any week in 1832 or 1883, and only exceeded once or twice in 1884 or 1885.—G. J. SYMONS.



COMING EVENTS

15	TH	Chiswick Show; National Rose Society's Show, Birmingham.
16	F	
17	S	
18	SUN	4TH SUNDAY AFTER TRINITY.
19	M	
20	TU	Christleton Rose Show.
21	W	Newcastle-on-Tyne Show (three days).

ORCHID NOMENCLATURE.

THE Orchid Conference which was held at Liverpool recently by the Council and Committee of the Royal Horticultural Society terminated rather unsatisfactorily, and the special object of the meeting—the reformation of Orchid nomenclature—is still unaccomplished. It may, however, be hoped that something will result from the consideration given to the subject, and that further proceedings will be taken in the matter. The first point is to decide what the Committee really desire to effect, and this did not seem to be clearly understood at the meeting in question, as the speakers differed considerably in their views, though all agreed that some rules are needed. It is evident that the Committee cannot undertake the reformation of the whole system of Orchid names, nor would it be desirable, for it would only multiply synonyms that are already too numerous, and increase confusion. The species and varieties that have been correctly described by recognised authorities would be much better left untouched, and the reformers might confine their attention to new introductions and to varieties that have received names from horticulturists.

The next point is, What change is desirable in the present system? and here the difficulties commence. It has been proposed to form a dual system of nomenclature, botanical and horticultural, confining the former to species and varieties distinct enough for the botanist to accept, for which scientific names should be employed, and bestowing "fancy" or "popular" names on varieties of less consequence, but which come within the cognisance of horticulturists. This at first sight seems to be a very simple and efficient method of escaping the difficulties, but it does not bear a closer examination quite so well. What definition will fix the respective limits of "botanical" and "horticultural" varieties in Orchids, or must the botanist first decide whether he can recognise a variety before the horticulturist may deal with it? The characters derived from mere size and colour are not valued very highly by botanists, although to horticulturists they are of much importance. Is it proposed to restrict the "popular" names to the varieties differing only in these characters, and will those who give the latter titles examine the plants sufficiently to determine that there is no "botanical difference?"

The difficulties attending this suggested alteration are numerous, and there is one point that its advocates appear to overlook. They regard the varieties of introduced Orchids as of the same value as seedling varieties of other plants that have originated in gardens, whereas there is considerable difference in several respects. We have abundant evidence of the variability of Orchids in a natural state by the enormous number of varieties introduced in recent years, especially of some species. Experiments at home have also shown how readily many of them can be crossed, and how much the progeny differ amongst themselves. In several cases we have seen batches of seedlings from one pod of seed and one

cross, differing greatly within certain limits, though their relationship is clearly perceptible. The vegetative increase of Orchids is very slow as compared with many plants that advance rapidly by means of spreading roots, bulbils, &c., and in consequence a very large proportion of the Orchids introduced are probably "individual seedlings," and years (especially with Cattleyas) must elapse before we can count a dozen plants in cultivation from one particular variety. This is quite different from what occurs with most cultivated plants, which can usually be increased by cuttings, layers, or grafting, or varieties can sometimes be fixed so that they can be obtained true from seed, and in a few years a new variety of merit is often represented by thousands of plants. Then the value of a name is evident, but it is a serious task to undertake the naming of individuals only, and if it were encouraged we should soon have lists even more overloaded with names than they are at present.

It is already admitted by many orchidists that names are too freely given to Orchid varieties, and the Committee would be doing valuable service if they directed their attention more particularly to this part of the subject. Names are bestowed upon varieties in which "an extra spot can be discovered," because it is said it gives them "a commercial value," and the most trifling variation is thought sufficient to merit a designation. This is the chief evil in Orchid nomenclature and ought to be checked. The fact is that much disappointment has already been caused to many persons by the unrestricted indulgence in this practice, and its continuance will do more harm to the Orchid interest than some suppose. There are of course some well-marked varieties which do not vary materially under cultivation, but there are others that are by no means constant, and the slighter the variation the more likely is this to occur. I have seen forms of several different genera, that one year would have been ranked as of first-rate quality, and the next season would have been discarded as worthless, solely perhaps from weakness, and the next year recover their usual character, though this does not always happen. I have also seen the reverse take place under good culture, pseudo-bulbs, leaves, and flowers all showing the effects of their treatment. These facts are merely stated to show that names given to the minute differences some discern are practically worthless, and nurserymen are discovering that they do not advance their own interest by such means.

The object should be to simplify nomenclature as far as possible consistently with accuracy, but how the proposed dual system of "botanical" and "popular names" will effect this in the case of Orchids is by no means clear. The species must be named in the usual way, also the so-called "botanical" varieties, and what objection can there be to completing the system by going one step further, and naming the really distinct forms of these in accordance with the custom? Objections have been raised to the repetition of such names as "superbum," "magnificum," "giganteum," &c., but they are surely more euphonious and more explanatory than the majority of popular names. Beyond the third degree names are not needed, and if the variety is not distinct enough to merit a separate designation, and cannot readily be referred to any accepted form already named, it should retain the generic and specific name only, as, for example, *Odontoglossum crispum*, and then purchasers would know that it was one of a series of individuals agreeing in the essential characters with that species, differing slightly from others as all individuals do, but not sufficiently to deserve a distinct title.—L. C.

CULTIVATION OF THE STRAWBERRY.

(Continued from page 504.)

SUMMER TREATMENT.

IF planted in spring the hoe should be used freely up to the flowering time, for the plants being strong and carefully placed out will give some fruit the first year, when a mulching of some

kind should be given, nothing answering better than stable litter with the smaller parts and droppings shaken out, the latter coming in capitally for Mushroom beds. The litter if put on when the plants come into flower or soon after will get well washed, and form a bed for the fruit to lie on quite equal to straw, and better, as it will have some manurial value. Water will need to be given in dry weather; indeed, they must never become dry from the flowering time until the fruit has swelled. Runners, as they increase root-action, should not be removed before July. They do not take from the parent until the runner has formed a bud or joint, and is beginning to develop into a plant on its own account. If increase be wanted, the runners must not be removed, but it is not well to take them from spring plants.

July and later plants should have all the runners cut off as they appear. A light mulching of short manure or partially decayed leaves will much invigorate the plants by securing a greater uniformity of moisture and nutrition. Keep them free from weeds if not mulched, but we strongly advise the mulching in preference to the heavy autumn or early winter mulching that finds so much favour with many. If no summer mulch is used a light autumn one may be given. Avoid mulchings that are likely to bring an abundant crop of weeds.

THE SECOND SEASON.

In the spring of the season after planting the soil may be lightly pointed over between the rows and plants, prior to which a dressing may be given of soot, bonemeal, and native guano pulverised in equal proportions at the rate of a half-peck per rod. The advertised manures may be applied at the rate of 4 cwt. per acre, or 3 lbs. per rod. They should be distributed evenly and very lightly pointed in. Just before or about the time the flower scapes appear a mulching of stable litter may be given, the strawy portion separated from the fine, and the latter put on first evenly about the plants an inch thick, and then the strawy parts, so as to form a clean bed for the fruit to lie on fully an inch thick, so that it will require to be 2 inches thick, or 3 inches in the first instance altogether, to allow of its becoming closer by rains. This mulching should not be deferred longer than the plants are coming into flower. It is particularly valuable on light soils and good on all. If not washed clean by rains the waterings that will be necessary will render it clean by the time the fruit is ripening, and if not it is easy to add a little clean straw.

Many other plans of keeping the fruit clean have been devised. Tiles and slates are good in their way, but they get hot with the sun, slates much more so than tiles, and the flavour of the fruit is not good. It does not want roasting, but a free circulation of air. Wires I have used extensively, and they answer well, especially if a slight mulch is given to prevent dirt being washed on the fruit by heavy rains. They are, however, somewhat costly, yet they will last (no one knows how long) certainly a lifetime with care. Clean straw chopped up rather coarsely or in about inch lengths is a capital mulch, and slugs do not like it.

WATERING.

From the time the flowers appear until the fruit is swelled water must be given abundantly if the weather be dry. It will be required once a week at least, and after the fruit is swelling twice a week, and on light soils every alternate day, depending upon the weather. Liquid manure will not be necessary if the mulching with short manure has been given, but if the long is used applications after the fruit is set and again when it is about half-swelled are necessary. The mulching must be drawn on one side when the liquid is applied, or it will be spoiled as a bed for the fruit. Thorough soakings of water are the best, dribblers are of very little use. If the soil gets baked, dam up the sides and ends of the plantation or beds, and flood the ground until the soil is thoroughly moistened. Strawberries are poor when small, hard, and dry. A rod of well-swelled fruit is more satisfactory than a rod that cannot be attended to, and in a dry hot season have no value, which mulching and proper supplies of water would have made as satisfactory and profitable as the other.

SECURING FINE FRUITS.

When it is desired to have the fruit large, strong healthy plants of the previous July planting will give it as no others do. The plants are mulched and otherwise treated as above, only when the flower scapes appear choice is made of three or four of the strongest, if more is shown, and the others cut away. If very large fruit is wanted all the scapes may be retained, and only the "king" fruit on each peduncle reserved, all the others on the peduncle being clipped off. Those are invariably the largest fruit, and Strawberries of eight or a dozen to the pound are always appreciated at table and by the salesmen. The lowest

blossoms are always the strongest, and these give the largest, earliest, and best fruits. Three or four on a scape, or about a dozen fruits on a plant, will give very fine fruit, but if the big fruit is wanted it must be sought from the "king," the lowest centre one of the peduncle, and then all others must go. This, of course, is an extravagant plan—all excellence is had at the expense of number—but reduction is not necessarily loss of value. The salesman will any day give double the price for a pound of sixteen fruits than for a pound of thirty-two.

The fruit is best supported with forked twigs of hazel, the fruit depending clear of anything and as high above ground as the peduncle will allow, it being placed in the fork of the twig stuck in the ground and inclining outward at top so that the fruit hang clear. In wet weather I have found it necessary to cover the rows with frames which admit of a thorough current of air, the lights being tilted on both sides. I have also used hand-lights set on bricks for a similar purpose. The finer the fruit is the greater the difficulty in keeping it from spotting. The quality of such fruit is all that can be desired in flavour.

PROTECTING THE FRUIT.

Nets are necessary to protect the fruit. They should be placed over the plantation as soon as the fruit changes colour. It does not answer to delay this work until the thrushes and blackbirds have begun to peck at the fruit. The earliest to colour are the finest, and if pecked they are no good whatever; therefore net in time. The nets should be supported clear of the plants. This is readily done by driving stakes at about 6 feet apart or up every second or third row, and putting tarred string from each and crosswise, as well as with the line of stakes. The stakes should be a foot clear of the fruit all around, and the stakes being 3 feet out of the ground the birds will be completely foiled, only there are no holes in the net, and it is kept down at the sides and tight over the plants. Repaired herring nets can be had at a reasonable price, and if taken care of, will last many years.

GATHERING THE FRUITS.

The fruit should be gathered when dry, though of course this cannot always be done for dessert, but they must be dry when for preserving, and for that purpose always without the calyx. Strawberries for dessert must be gathered with the calyx and as much of the footstalk as is sufficient to hold it by. The morning is the best time to gather Strawberries when the dew is off, or before the fruit becomes heated by the sun. The fruit is in the best condition when ripe to the tip. It requires some little experience to tell exactly when a fruit is ripe, and it is a matter that should not be left to the inexperienced. One unripe, or over-ripe, or slug-eaten fruit, or a few under-sized often ensure an otherwise fine dish of fruit an undeserved condemnation, and which a little care in gathering would have avoided.

The plantations should have a thorough overhauling after the crop is cleared. Throw the nets off the ground to dry, and when dry looped and tied in as little room as possible and stored away in a dry place. The plants must be examined and all the old leaves cut off with a knife. By the old leaves I mean those that have become brown and are far advanced towards maturity, but the young leaves should be carefully preserved. This is readily effected by cutting around each plant, the old leaves being lowest and most spreading, and by taking the leaves in one hand and cutting with a knife in the other the work is quickly performed. Runners are removed by the process, and nothing is left but the centre of young leaves. The removal of the old leaves gives space and light for new ones, which are rapidly produced, and these become by September quite luxuriant; and as there are roots corresponding the plants are regenerated, form well-developed crowns through the fresh growth and increased light afforded by the removal of the old leaves, and the necessity of renewal is lessened.

The strawy portion of the mulching should be cleared off along with the old leaves, runners, and weeds, leaving, however, sufficient of the shorter parts to form a mulching, and the ground having become very close at the surface it may be lightly stirred with a fork, but not so as to bury the mulch or disturb the roots. It is a common practice not to remove the runners and old leaves until a late period in the season through pressure of other work, or from an idea that any time will do. Late removal of old leaves and a luxuriant crop of runners is so much taken from next year's crop, and is more exhaustive than a crop. It is a wonder they fruit at all, the spaces between the plants being a luxuriant mass of runners, and the plants having little beyond old leaves when the general clearance takes place from few buds in embryo. Some object to removing the old leaves. Perhaps they have cut off the foliage with a scythe and shaved off young as well as old leaves. This is not our plan, nor the

plan advised. Trimming off the old leaves is different from removing all indiscriminately. One is beneficial when done early and judiciously, the other is injurious at any time.

REMOVING RUNNERS.

Removing runners early has a tendency to induce a superabundance of foliage, but after the fruit is set and swelling there is no danger of the runners interfering with the foliage only injuriously by obstructing light, so that they should be removed, and the sap so liberated will be diverted toward the swelling of the fruits. No runners should be allowed to remain on a plant after it has formed a joint or bud. Cut off all at this stage up to the fruit setting, and afterwards through the season as soon as they show, never allowing them to pass the bud state of the runner plant. All beyond this is so much taken from the soil against the permanent plant, as the runner is fed entirely by the parent until after it has commenced forming roots, and the series of runners that follow are fed by the mother plant, so that they are a great strain upon the resources of the parent, especially when they are not in a medium favourable to their producing roots on their own account. We very often see plants with two or three joints of runners without a single root on any of them, and these take as much support from the soil as the parent and reduce its vigour proportionately.—G. ABBEY.

(To be continued.)

MULCHING.

PEAS and Beans will be considerably benefited by having a dressing of half-decayed manure 4 inches thick laid on as a means of conserving the moisture at the roots as well as stimulating growth. The mulching should be put on as soon as the rows of Peas and Beans are earthed up, and the former staked; after which, in the event of the weather being dry at the time, a good watering should be given. Fruit trees, such as Peaches, Cherries, Apricots, &c., will also yield better results by having a few inches thick of manure laid on the surface of the soil immediately over the roots—say to the extent of 4 or 5 feet from the base of the trees. Beds containing Pelargoniums, Calceolarias, Stocks, and Asters may, by the application of a few inches thick of short manure, be furnished in a little more than half the time the plants would otherwise require to cover the surface of the beds with flowering shoots. A good mulching of short dung laid on between ranks of Raspberries will also be productive of the most satisfactory results; more especially is this the case during a dry season.—H. W. WARD.

CHRYSANTHEMUMS AND THEIR CULTURE.

(Continued from page 505 last vol.)

ADVANTAGES OF RIPE WOOD.

MANY growers of Chrysanthemums fail in their desire to produce perfect blooms by not paying sufficient attention to ripening the wood of the plants. Undoubtedly the thorough maturation of the wood has a material effect on the development of the flowers. This is more apparent in the Incurved section than in the Japanese family, as in the former case depth and solidity of blooms are essential points, and they cannot be had from unripe wood, therefore let me impress upon the inexperienced cultivator the importance of this phase of Chrysanthemum culture. Ill-ripened branches will produce flowers large enough in diameter, but they lack depth and form. The greatest of all faults is not making the soil firm enough, particularly at the last potting. Under such conditions the roots ramble quickly into the soft soil, and the growths are soft correspondingly and devoid of that hard wood-like character that is so desirable. Using soil of too rich a nature, and the excessive application of stimulants, such as nitrate of soda, induce an undesirable luxuriance of growth. This may be pleasing to those who do not thoroughly understand its nature, but it is, nevertheless, deceptive, for the tissues are not solidified. Overcrowding the plants is another common source of badly ripened wood; the stems under such conditions grow weakly, and the leaves are imperfect. A free circulation of air amongst the plants, with their full exposure to the sun, all day if possible, contribute powerfully to substantial growth. If the plants are arranged and tied out as shown on page 460, the evil referred to will be averted. By the time the plants are in bloom the wood should cut almost as hard as a piece of Oak, and the colour of the bark should be rich brown in colour, with a rough uneven surface. The leaves of such plants assume toward September a bronzy appearance, though some varieties indicate this character more clearly than others. I repeat, then, that the difference between wood thoroughly ripened and that which is unripe is that blooms from plants (all other things considered) of the former designation are always much deeper in the growth of the florets and firmer in "build," as it is

called; while those from unripe growths are large in diameter, devoid of depth, and contain a number of ill-shapen florets—in some instances without any semblance of incurving in the proper manner. The way to have thoroughly ripened plants is to pot and arrange as has been previously advised. Pay regular attention to their summer treatment of watering and regulating the shoots, and feed them as I will direct in a future issue. There is no such thing as growing the plants very strong and ripening them suddenly, so to speak; the growths must be built up gradually as produced in all their stages from the time the cuttings are taken till the flowers expand.

NORTHERN AND SOUTHERN GROWERS.

It has often been said that gardeners in the southern counties of England cannot grow Chrysanthemums so well as those in the north, and misunderstanding has arisen in consequence. Many people aver that the climate is not so favourable in the south as it is in the north, but except in one respect it is a mistake. I will endeavour to point out the advantages and the disadvantages of both districts. Until quite recently Chrysanthemums have not been seen in perfection farther north than the neighbourhood of Liverpool. Growers in that district have held their own, and have been regarded as the champions of England. Certainly some of the finest blooms have been shown from gardens in that neighbourhood. The cause of the fame which has been so deservedly earned by Liverpool gardeners must be looked for in another direction—viz., the thorough mastering of all details connected with the growth of the plant. Fifteen years ago Chrysanthemums were well grown by Liverpool men, therefore successors to the gardeners of that date have been imbued with an ardent desire to emulate their predecessors and perpetuate the fame of the district. Still, attention has been given to all the requirements of the Chrysanthemum. This thorough study of the plant has placed the gardeners of Liverpool in their present position. It has been truly said that nowhere are specimen blooms grown with such a breadth of florets as the incurved blooms from that locality. The advantages they possess over their southern brethren are these—the season not being quite so early as in the south, consequently they are able to secure crown buds at a later period, and this is the only natural advantage they have. Until the last six years it cannot be said that growers around London and farther south stood any chance with the Liverpool men in general competition, but the fine blooms brought to Kingston by Mr. W. Tunnington and the late Mr. F. Faulkner induced London gardeners to emulate their northern brethren, and well have they benefited by the lesson taught them, for southern growers are now able to hold their own in friendly rivalry with their northern brethren. The disadvantages which southern gardeners labour under is the too early development of the growths in many instances, owing to the hot weather occurring during the months of April and May in some seasons. These premature growths do not produce the desired flower buds at the best time. Many times when the proper buds are retained which produce the largest and best flowers they are too early for the shows, and cannot be retarded so easily in the south as they can in the north; therefore, much to the disappointment of the cultivator, smaller blooms have to be staged which cannot possess a good chance of competing successfully with the larger ones produced from buds "taken" at a better time.—E. MOLYNEUX.

SUCCESSFUL TOMATO CULTURE.

THE best Tomatoes in pots I have yet seen are in the Peach house at Apsford, near Frome, the residence of A. G. Hayman, Esq. They are growing in 12-inch pots, and have received since commencing to crop heavily a liberal top-dressing of loam and manure. The roots are confined to the pots, and the remarkable crops borne by each plant afford strong proof that they have received the best attention with plenty of water, varied with occasional supplies of farmyard liquid manure. Each plant has two leading stems which have never been stopped, only the side shoots being closely rubbed out. Some are growing up the front trellis and the remainder among the young Peach trees on the back wall. In height or length of stem they range from 6 feet to 8 feet, and are bearing clusters of fruit nearly the whole length, some being fully ripe and others just set. The varieties are Reading Perfection, large and handsome; King Humbert and Trentham Fillbasket, both cropping closely and bearing medium-sized and rather solid fruit; Large Red, one of the heaviest of croppers and of good quality; and Stamfordian, rather coarse in this case. Judging from the size of the clusters of matured fruit, each plant will perfect from 16 lbs. to 20 lbs. weight of Tomatoes, and this, I think it will be conceded, is a remarkably good record, and very much to the credit of Mr. S. Andrews, the industrious gardener in charge of a generally pretty, and in summer especially most charming residence. I must not omit mentioning that the plants are syringed twice daily, or as often as the Peach trees, and this has largely contributed to the unusually perfect set of fruit. I may also add that I, too, have adopted this season for the first time the use of the syringe for setting the fruit, and also

as a preventive of cracking, with good results in each instance.—W. LGGULDEN.

ICE HOUSES.

WE almost invariably receive applications for building ice houses in winter; but obviously summer is the best time for making the necessary preparations, so that everything is in readiness for storing ice when it is produced. This has been suggested by a gardener who asks for a few hints on the subject, and the annexed plans and explanations by Mr. G. Abbey may possibly be of some service to him and others, who contemplate making structural provision for the storage of ice. The plan can, of course, be modified to suit local positions and circumstances.

Ice being now as much a necessity as a luxury, it is not remarkable that extravagant means are frequently adopted to secure a supply of it for the many domestic purposes both of summer and autumn. By digging a pit in the ground, not coolness is sought but freedom from the variable influence of the atmosphere, and uniformity of temperature around the ice. This plan, however, is not, I think, the best that can be devised, and I shall accordingly proceed to describe the one which might advantageously be substituted for it.

The essentials of keeping ice seem to me to be—1st, A perfectly dry site; 2nd, Dryness and non-conducting power in the surrounding substance; 3rd, Exclusion of air. The first will be secured by the perfect drainage of the ground forming the site, which should command a good fall and outlet for drains, as the top of a hill rather than a hollow.

Now, I propose to make the ice house a decent building; there is no need, therefore, to bury it in an out-of-the-way place, but a naturally dry site may be chosen in a commanding position, where it will either be visible at a distance, or afford a prospect, or combine both. It may be fully exposed to the sun instead of being in a shaded spot, sunk to the depth of 6 feet or less, but, if the drainage cannot be made very efficient, not sunk at all, made in the form a parallelogram with the ends running north and south, and the entrance at the north end. If an excavation be made it should be 36 feet long, 22 feet wide, 7 feet deep at the south end, and 5 feet at the north, the sides being 1 foot lower than the centre, so that the excavation falls 2 feet from north to south, and 1 foot from centre to sides. If no excavation be made, then merely take out the soil to make a firm bottom, giving the inclines above named—i.e., from the north to the south end 2 feet, and from the centre to the sides 1 foot.

Fig. 6 is the ground plan of such a structure; *a* is the ice house within which the ground has been excavated to a firm bottom. The drain *b* is brought to a small cesspool within the ice house, which must be covered with a stone into which is let a 9-inch ordinary stench-trap. The stone should have a dish from the sides to the trap of 4 inches, and channels cut for drains to deliver water on the trap, so that the water from the melting ice may always pass it before going to the drain *b*. *c*, The trap, will require a stone 2 feet square and 8 or 9 inches thick, and should have a dish of 4 inches, and channels made for drains that are to convey the water of the melting ice. The stone to cover the cesspool need not be more than 1 foot square and deep in side measurement, and should be surrounded by bricks laid in cement. It should be laid on the cesspool in a bed of cement, and when set should rise 3 inches above the level of the excavation. The trap being in the centre of the house or midway at one end, it follows that it would, were we not to lower the excavation, be 1 foot higher than the side drains *d, d*; let the excavation, therefore, be made 15 inches deeper at that point, and slope to that depth, beginning 6 feet from the trap in the interior and falling to the trap evenly. In this case the side drains will have 3 inches fall from the sides to the trap.

Let the floor be formed of bricks, beginning with a brick-on-edge all round, and next to this 3-inch drain tiles, which should be laid about 1 inch in the ground, or so that they are level with the bricks on the other side laid on the flat. The whole of the space within the drains should be laid with bricks on the flat, and when this is done a floor should be made sloping from the centre to the sides, and from the interior to the trap, having the bricks level with the drain tiles and trap. Into this will fall all water originating within the house, and thence into the main drain *b*. The side drain will come to the trap by the channels made in the stone. The floor should now be run with cement, removing the drain tiles and putting a board to keep the bricks in the proper position until the process is complete and the cement set, then the tiles should be relaid, and those on the trap should be run in cement and cut so as to suit the stone. When this is done no water can escape but to the sides, and thence away by the drains, but as bricks are porous it is well to brush the floor thrice over with cement brought to the consistency of paint. After this is thoroughly set place bricks on the flat, each brick isolated, with 3 inches between each course, and the same between the ends, which

will leave spaces of 3 inches between each course, both lengthwise and crosswise. The light spaces are the isolated bricks on the flat, and the shaded parts the spaces. These bricks should be laid in cement, and be bevel-pointed round to keep them firm. These bricks will keep the ice off the floor, and will allow the water to run off.

e, e, e, Are 9-inch walls, which should have foundations below the floor of the ice house, and a course below asphalted, and one above the asphalted course laid in cement. Along the spaces *f, f*, a drain should be laid, and join the drain *b* where that crosses the spaces. Outside the spaces is *h*, another drain, that is intended to keep away all water from the enclosed space, and is the only drain, except *b*, that is to be below the excavations. It should have a syphon just clear of the house to keep back any air that may find its way up *b*, and keep it from the drains in the spaces *f, f*, which should have syphons at their junction with *b*. *i, i*, is an area which will require a wall, *j, j*, all round to keep up the soil—4½ inches thick if an excavation be made not more than 2 feet, and 9 inches thick if one deeper than 2 feet. *k, k, k, k*, are 6-inch iron pipes that have one end opening in the space *f* at the bottom, and the other brought to the external air, and should there be provided with a screw valve that is driven on an indiarubber washer, and so as to exclude air or admit it at will. *l, l, l*, are tongued and grooved doors made of sound well-seasoned oak or elm. They should have oaken frames, with an indiarubber band all round, so that there will be little possibility of air passing. The fastenings of the doors ought to be brass, as iron corrodes and gets out of order. *m* is a porch having a stone floor or other hard material that will do for breaking ice on when filling, and as a storage of any straw or straw shutters that may be required for stopping up the spaces between the doors *l, l, l*; *m* is also provided with a door in halves. With the exception of the outer door of the porch the door should neither be painted nor varnished.

Fig. 7 is section through A B, and shows *n*, the ice house, *o*, 9-inch space between the two 9-inch walls. It is provided with a 12-inch iron pipe, *p*, with two branches, each 6 inches in diameter, the ends of which are brought to the external air 6 inches clear of all substances, and closed or opened at will with air-proof valves. The pipes at the bottom of the space are drain tiles, and those immediately above them are those named in fig. 6, *k* (they not occurring in the section A B, are introduced to show their utility). The space *o* is, of course, filled with air, and therefore at the period when ice forms the external air will be considerably below freezing-point, whilst that of the space *o* will be above it. From the structure being 6 feet below the surface it derives considerable heat from it, and will not be influenced readily by atmospheric changes. In the memorable winter of 1860 61 the temperature of the earth at 1 foot was never lower than 36°, that of the atmosphere falling to 3°. In a space of this kind we shall have a temperature at midwinter of not less than 43° to 45°; and as the ice in *n* will melt according to the temperature of the air it is surrounded by, and as it must derive its heat from *o*, we can by displacing the air in it by opening the valves of *p* let out air at 43°, and by those of *k* replace it with that at, it may be, 20°. In any case, at the time of filling the ice house, *n*, we should have in *o* a temperature below freezing, the parts surrounding being thoroughly frozen by the coldness of the air of *o*. Were *o* earth it would have a temperature of 40° to 43°, and the ice in *n* would be melted by the air heated by the higher-temperated surrounding material, of which the heat will keep increasing, until in July it will be from 55° to 60°, afterwards gradually declining to the winter minimum of 43° to 45°. In our case, *o*, or the air in it, can also be warmed by the temperature of the surrounding substance; hence arises the necessity of enclosing it with a non-conductor. I propose, therefore, that we fill *q, q*, with very dry sawdust (kiln-dried, if possible, but not browned very much), and put in hard, it not being possible to make it too tight. The sawdust should be isolated from the ground at the bottom of *q*, making over the drain a half circle of "culvert" tiles to keep damp from rising and wetting the sawdust.

Above the ground line it will be seen that our arrangements as regards the exterior are of wood; in fact, we construct over the ice a summer-house, only we fill the interior with ice, and have seats, *r, r*, all round outside under cover of the roof; *s, s* is lined with deal battens, 4 inches by 3 inches, and covered with half-inch boards doubled; first one thickness close, and then the other upon them, so that the last boards will cover the joints of the first. The sides and roof are done alike, and to give a neat appearance the sides may have fixed on the outside larch poles sawn up the middle, from which the bark is removed, and when dry varnished. The seats may be formed of like material, also the floor *t* over open area *u*. The supports for the projecting roof are larch poles barked and varnished, the bases of which are slightly elevated on stones and dowed in. The roof should be thatched with heather a foot to 18 inches thick, and if this be done neatly we have a structure anything but unornamental, and invaluable for shelter from storm or heat and as a resting place.

But let us return to the interior. The roof of the ice well is of

bricks disposed as a semicircle, the ends being also arched to meet the quarter circle of the sides. We do not place earth against the outer wall of the space, *a*, but sawdust, to bear the weight of the bricks composing the semicircle, the weight of which tends to cause the upright 9-inch walls to bulge out. One course below the striking of the arches is some strong angle iron, 3 inches on each side of the angle, and half an inch thick, one side of the angle to be placed on the wall and covered with a row of headers, and the other side close on the face of the course of bricks on which it is laid. At every

bolt being screwed 2 inches, a 1½-inch socket pipe is screwed on, and its other end let into a stone, *v*, that must be on hard ground, which if not naturally so must be rammed until it is like iron. These provisions must be made on both sides, and at both ends, so far as doorways will admit. To keep the internal arch firm we place every alternate brick in the course of the outer arch wall on which the angle iron is placed through far enough to reach the bricks of the other arch. The outside of the last arch, or that face next the sawdust should be plastered with cement, and the internal one also, but inside

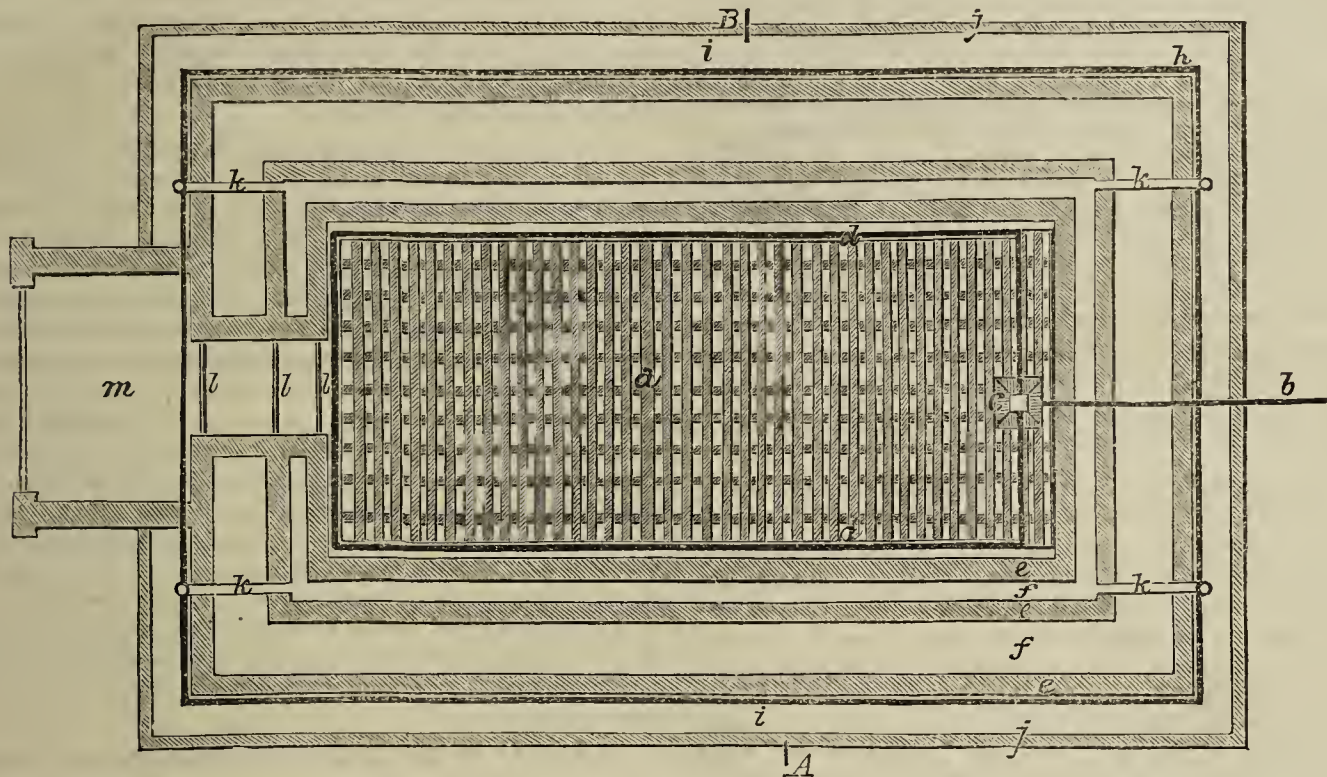


Fig. 6.—SCALE 8 FEET TO 1 INCH.

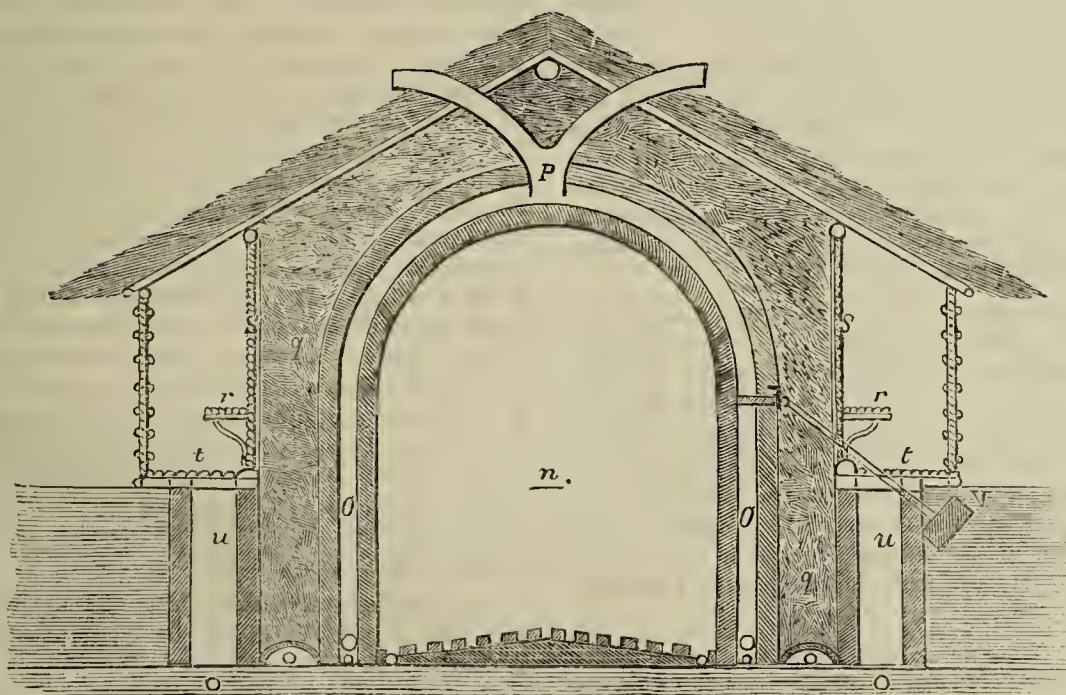


Fig. 7.

3 feet along the angle iron, and on its exposed face, should be made a hole for an inch bolt, whose outer end must have a 2-inch solid socket, for which a 1½-inch wrought pipe is prepared to screw on 2 inches. We have in building to put in clamps or straps of 3 inches by half an inch bar iron, with an inch hole 3 inches from the upper end, and the lower to pass through the wall at a foot above the foundation, and to turn up 3 inches in the space *a*. We put straps in, of course, as the wall is built, and when the angle iron is put on we introduce the bolts through the holes in the straps and also through the angle iron, securing them with nuts. The head of the

The house as described will hold 172 cubic yards of ice when thoroughly filled, and will preserve it for a long time, though in order to effect this the doors must be closed, and the spaces between each stopped tightly up with dry straw or straw shutters, placing one against the other, when it is as safe for keeping as if it were hermetically sealed. It is surrounded with air at a temperature as low as that of the ice, and can derive no heat except through the 2 feet thickness of sawdust. The valves are to remain closed, for it is necessary that the air in o be kept still, and to open them would only admit air of a higher temperature. If, however, after filling the

house with ice the weather should be mild for a time, and then be followed by a severe time of frost, it will be judicious to open the valves, and displacing the air in it, replace it with that at a lower temperature. The valves should be closed when a minimum has been secured, and should not be opened again until the return of frost the following autumn, when air at a temperature below freezing should be admitted.

Nothing is so detrimental to ice-keeping as constantly opening the doors. It should only be occasioned by necessity, and the doors should be closed after the person visiting the ice chamber, so that as little as possible of the outer air may be allowed to enter, and on coming out the like care should be bestowed on closing the door.



At a general meeting of the ROYAL HORTICULTURAL SOCIETY, Maurice Young, Esq., in the chair, the following candidates were unanimously elected—viz., Robert Berridge, M.R.I.C.E., Domingo De Ybarando, George Haigh, James Terry, William J. Thomson, and Reginald Young.

— THE ROYAL BOTANIC SOCIETY'S SECOND EVENING FETE this year was held on Wednesday the 7th inst., and being favoured with fine weather proved like the first, very successful, a large number of visitors assembling during the evening. The gardens were most brilliantly and tastefully lighted by coloured glass lamps of a new and very elegant pattern. Floral decorations for tables and rooms were shown in the large marquee, and an excellent selection of vocal and instrumental music furnished additional attractions in the grounds. The principal exhibitors of floral decorations were Mr. Chard, Miss Williams, and Messrs. Dick Radcliffe & Co.; Messrs. Hooper & Co. showing bouquets. Mr. B. S. Williams, Upper Holloway, contributed a very handsome group of Orchids and choice plants; Messrs. Paul & Son, Waltham Cross, having a large group of Rosa blooms. During the evening the Duchess of Teck and daughter, with numerous friends, visited the gardens.

— "S. C." writes that "So far the IVY-LEAF PELARGONIUM MADAME THIBAUT by far exceeds the description given when it was sent out. My stock plant in a 48-pot, with a dozen trusses of bloom in various stages, is very beautiful. It is particularly free-blooming, for in a thumb pot I have a head of bloom larger than the pot it is in, and two other trusses showing. Another character is the dwarf growth of the plant, and so far I have not a tie or a stick to support it; the individual blooms being large and useful for buttonholes."

— THE same correspondent observes that "A bed of SELF-SOWN MIGNONETTE has been for a fortnight a grand sight. In this locality the general cry is 'How badly my Mignonette is doing,' or 'I cannot get it to grow,' yet here it is magnificent. I believe the secret lies in the land not being either forked or dug, simply raked and slightly top-dressed with a rich soil in the autumn, and a little lime at the same time. I measured a spike of bloom 6 inches long with no seeds. Sowing itself it comes up rather thickly, but I leave it alone. I have every reason to believe that Mignonette sown in the autumn, or as soon as the seed is ripe, is the most successful. My bed, about 30 feet long by 3 feet wide, is a treat for the bees."

— MESSRS. VICCARS, COLLYER, & Co., Leicester, inform us that the WILSON JUNIOR BLACKBERRY is now bearing a fine crop of ripe fruit on plants in pots, and invite an inspection. They were potted in the spring of last year and grown outside until two or three months ago, then placed in a cool house. Fruit from one of these plants was exhibited at South Kensington on Tuesday last.

— WE are informed that the Duchess of Teck has graciously consented to open a LARGE PEOPLE'S FLOWER SHOW AND INDUSTRIAL EXHIBITION in the parish of All Saints, South Lambeth. The Exhibition is to be held at the Manor House, Priory Road, Wandsworth Road, S.W., and the promoters are desirous that it shall be in every way a success. Its object is to encourage the poor of this overcrowded neighbourhood to grow flowers, and to teach them to cultivate that industry in which they take a special interest. About 200 money prizes are offered, amongst which

are special prizes given by well-known philanthropists as the Duke of Westminster, K.G., Lady Emily Cavendish, Sir Donald Currie, K.C.M.G., M.P., and others, many of whom have promised to support the Princess at the opening ceremony on July 19th. The entrance money is very small, and all competitors receive a free ticket for the distribution of prizes on Wednesday, the 21st July, at which the Lieut.-General Sir Frederick Fitzwygram, Bart., M.P., has promised to preside.

— GARDEN IRRIGATION.—Messrs. Merryweather & Sons, Long Acre, the well-known manufacturers of garden hose, have recently introduced a lawn fountain, and this being uickle-plated, combines elegance with utility. Much labour is saved in watering lawns, &c., where there is a pressure of water in pipes, as the fountain only needs occasional moving for its regular distribution.

— MESSRS. J. CARTER & Co., High Holborn, have now an extensive show of TEN-WEEK STOCKS AT THE PERRY HILL NURSERY, about 7000 plants being in flower. They are arranged on stages out of doors facing the south, and covered at the top with a sloping roof to protect them from excessive rain. For several years Messrs. Carter & Co. have been growing plants for seed in this way instead of relying exclusively upon continental seed, and by close attention and rigid selection the strain has been considerably improved. From Germany these Stocks are received in twenty-six colours, but several of these are either dull shades or not distinct; they have therefore been reduced to twelve, and it is probable that some of these will be discarded. Those now represented are—Crimson Roses Chamois, Blood Red, Yellow, White, Light Blue, Purple, Brick Red, Chestnut Brown, Pale Rose, and Aurora (pale salmon). They are in four types—Dwarf German, very compact-growing and free; Large-flowering, with very fine double flowers; Pyramidal, taller in habit; and Wallflower-leaved, with bright green smooth leaves. All are remarkable for the large proportion of doubles included—a satisfactory indication of the merit of the strain, though the yield of seed will be smaller. The Petunias, for which this firm is noted, are also coming on well, a large number being already in flower.

— THE BIRMINGHAM GARDENERS' MUTUAL IMPROVEMENT SOCIETY.—This Society, which was started about four months since, now numbers about 200 members, and so warm an interest is taken in it by many gentlemen of the town that donations to the amount of £60 7s. 6d. have been given towards a library fund, chiefly through the exertions of Mr. Hughes, the Secretary. Mr. J. Crook, a well-known gardener in Birmingham, has accepted the position of librarian. One hundred volumes of the best modern as well as rare old gardening works have been purchased at a cost of about £40, and fifty-two books have been presented by various gentlemen and ladies interested in horticulture. The library was opened recently, upwards of 100 members attending, and a number of books were lent to members. By an arrangement with the Birmingham Botanical and Horticultural Society, the annual subscription of £5 5s. will be paid by the Gardeners' Society, which will secure from the Botanical Garden the following privileges:—Free admission on all ordinary days and Sundays to all members on presenting their cards of membership; ten tickets for exhibition days and reserved days to be sent to the Secretary for distribution amongst the members; the free use of the Botanical Society's library for reference only, subject to the supervision of Mr. W. B. Latham, Curator to the Society. A course of essays and papers, followed by discussions, will be proceeded with through the autumn, winter, and spring, with lectures occasionally. Mr. W. B. Latham is the Chairman of the Committee.

— THE monthly meeting of the BELGIAN HORTICULTURISTS was held on the 5th inst. in Ghent. Those present were—MM. P. Blancquaert, V. Cuvelier, Arth. Desmet, Desmet-Duvivier, B. Spae, Em. Decock and Vervae, and M. Alex. Dallièrè, who presided; M. Jules Hye acting as Secretary. Certificates of merit were awarded for *Pernettya lilacina nigra* major, from M. Alex. Dallièrè; *Pernettya lilacina* (ruca) albo, from the same; *Hoplophyton robustum* variegatum, from M. Aug. Van Geert; *Anthurium Schertzerianum* var. sanguineum, from M. Desmet-Duvivier; *Coelogyne Massangeana*, from MM. Vervae & Co.; *Alocasia Augustiana*, *Alocasia marmorata*, *Phrynium variegatum*, *Alocasia nigricans*, *Sagenia mammillosa*, *Alocasia gigas*, and *Amayllis Bonguerothi*, from the Continental Horticultural Company (Director, M. J. Linden). A cultural certificate was awarded for *Cypripedium superbiens*, from M. J. Hye-Leysen. Honourable mention was accorded to the following for their novelty:—*Anthurium Schertzerianum* Brillant, from M. Desmet-Duvivier; *Odontoglossum Alexandrae* var. fastuosum, from MM. Vervae & Co.; *Dracæna*

Mad. Lucien Linden; *Dracæna* Comte de Grunne, *Alocasia* Macedoana, *Pandanus* Kerchovet, and *Dracæna* Mr. James Bray, from M. J. Linden. Honourable mention for their culture was accorded to *Todea* superba from M. Alex. Dallièrè; and *Darlingtonia californica*, from M. Linden. Upon the same day the Société Royale d'Agriculture et de Botanique of Ghent held an exhibition of cut Roses, at which the Judges were MM. Dugnolle, Professor at the University, President; Chevalier Hynderick Peters (of Brussels), Closson (of Liège), Charron (of Paris), E. Claus, Ferdinand Van Hoecke, A. Rosseel, and J. Puls, who acted as Secretary. Diplomas of merit were accorded to M. Tihérghien for his collection of Roses, to M. Louis Van Houtte for his collection of Tea Roses, and to M. Jean de Kneef for a collection of Roses. Second-class awards were granted to MM. Dugnolle, Ferdinand Van Hoecke, and Kerkvoorde, of Wetterton; and honourable mention to MM. Fernand Vanderhaegen, Léon Halkin of Brussels, and Mad. Ad. D'Haene.

— A SERIES of twenty-six beautiful hand-coloured paintings of AUSTRALIAN WILD FLOWERS by Miss Hammond is exhibited in the Victorian Court of the Indian and Colonial Exhibition at South Kensington. They represent fifty-five species of plants, all admirably executed, and those who wish to obtain an idea of the numerous beautiful Australian plants, comparatively few of which are seen in British gardens, should look for this exhibit.

— THE July number of the *Botanical Magazine* has illustrations of the following plants:—T. 6883, *MYRMECODIA BECCARI*, a native of tropical Australia, which Sir J. D. Hooker says is "One of the most singular plants ever imported in a living state into this country, and it belongs to a genus, or rather to one of a group of genera of epiphytic Rubiaceæ, which have been long known from their singular habit of forming often spinous tubers of great size, the interior of which is galled by ants of various species, and of which insects these are the native homes." Several genera, such as *Myrmephytum*, *Myrmedma*, and *Hydnophytum* belong to the same family and possess a similar habit, while of *Myrmecodia* eighteen species have been described, M. Beccari having being sent to Kew by Messrs. Veitch & Sons in January of the present year.

— IN t. 6884 is shown *ARISTOLOCHIA LONGIFOLIA* from Hong-Kong, where it was discovered by Col. Champion in 1847. It was sent to Kew by Mr. E. Ford in 1882, and flowered in March this year. The perianth-tube is yellowish, expanding into a "maroon brown" limb. T. 6885 is *Galtonia clavata*, a third species of the genus, with greenish flowers. The bulbs were received at Kew from Cape Town in 1879, and it flowered in 1881. In t. 6886 is represented a curious little tropical American Orchid, *Pleurothallis Barberiana*, a minute tufted plant, with racemes of pretty flowers, the sepals white or greenish spotted with purple, the petals similar but smaller, and lip like a *Cypripedium*, but solid and bright purple. T. 6887, *Tulipa Kaufmanniana*, is a Central Asian species found by Dr. Albert Regel. It is nearly allied to *T. Gesneriana*, and has variable flowers, yellow and orange, rose and white, and white and purple.

PROFITABLE GARDENING.

(Continued from page 373, last vol.)

BOUVARDIAS.—As a rule those who are called upon to maintain a constant supply of cut flowers, whether for private use or for sale, rely principally upon such kinds as are more or less continuous-flowering for several months in the year. There may be a few kinds that only yield one crop of flowers, some of which I shall again allude to, but the majority of such are rarely sufficiently profitable, for the simple reason that they may be in bloom just when there is least demand for flowers, or if they are sold the prices are not often commensurate to the cost of production. Now *Bouvardias* bloom freely throughout the winter, and with good management nearly till Easter, and what is very much to the purpose no difficulty, as far as my experience goes, is experienced in procuring a ready sale. For wreaths and bouquets the white varieties are eminently suitable. It is true a great many gardeners fail to grow *Bouvardias* satisfactorily, but this is largely owing to the haphazard treatment they receive. They are not suitable for mixed plant houses, and cannot be said to be happy either under stove or greenhouse treatment, being most thriving in an intermediate temperature.

It is rather late in the year to dwell at length on the best methods of propagation, and I will merely mention that we obtain our best young plants from stout root cuttings, these being taken off in February or March, and near the surface of the soil. This

can be done without either resting or shaking out the plants as many prefer to do, and being obtained early is a decided advantage as late-struck plants especially are of little service the first winter after, and under any circumstances I find strong plants two years old and upwards much the most profitable. The root cuttings may be either placed at once singly in small pots, or thinly in pans of light or peaty soil, burying them slightly below the surface. In a brisk heat they soon start into growth, and if shifted gradually into larger pots and pinched back a few times will grow into useful plants. Cuttings of young top growth taken off with a heel and dibbled thinly in pans or pots of fine sandy, will, if placed in a brisk bottom heat and kept close and shaded, strike root readily, and may be subsequently treated similarly to the root cuttings. These young plants are best kept in pots in size according to their vigour, or say either 5-inch or 6-inch pots, being grown in a gentle heat up till the end of May, after which well-ventilated cold frames and pits are suitable for them. Pinching back the young shoots of these or older plants should cease by the end of July or early in August, according to the locality, and in any case this stopping should not be overdone, as when the growth is rather spindly the first burst of bloom may be the only gathering of any value.

When I commenced growing *Bouvardias* extensively I purchased a quantity of stocky little plants at a cheap rate, these travelling nearly 200 miles by goods train at a comparatively trifling cost. They were tightly packed in a long shallow box and were fully exposed. Railway officials are bound to handle plants thus sent in a careful manner; at any rate they did in our case, and there was no charge for packing. There is no reason why nurserymen should be disheartened at the state of trade, but they must endeavour to re-model their practice so as to meet the requirements of the new order of things prevailing.

After this digression I will briefly detail the treatment given to the old plants. Some, and good growers too, consider these require a brief season of rest, and their plants are transferred to a light position in a cool house and given less water accordingly, the plants being eventually pruned, restarted, repotted, and finally planted out in pits and frames early in June. Our plants being kept in a light airy position in a well-heated but unfortunately "naturally" well-ventilated house, the old growth is well ripened long before pruning time, and all we find necessary is to withhold water for a few days, or about a week, when they are freely cut back. In this manner we secure flowers up to the last, and at a time, too, when most in demand. They are watered a few days later on, and with occasional syringings they soon break strongly. Before the shoots are a quarter of an inch in length the plants are shaken clear of the soil, have their roots shortened somewhat, and are then repotted into as small pots as they will comfortably go into. We have tried shaking out and planting directly into a pit, but when first repotted they eventually lift more safely from the soil in the autumn. They are kept in an intermediate temperature till well established in the pots, when they are planted in a pit previously prepared for them. This pit, it should be added, is filled with Violets during the winter, these being turned out in time to admit of a few thousand *Alternantheras* being struck in it, and then it is entirely given up to *Bouvardias*. The soil has to be lowered considerably to suit the latter, being when finished off about 15 inches from the glass. No bottom heat is necessary, the bottom of the bed consisting of any common rubbish or soil, the surface compost to a depth of 9 inches consisting of two parts good loam to one of leaf soil with a free addition of sharp sand or grit. Failing a pit, good substitutes are spent hotbeds and frames. The *Bouvardias* are planted out about 15 inches apart each way, or more or less according to their size, are kept rather close and syringed daily when closed early in the afternoon. When growing strongly more air is given, and eventually the lights are taken clean off in order that the strong growth now being formed may also be sufficiently hard. As before stated, pinching back should be discontinued early, as those late-formed sucker-like growths will, if well ripened, yield the best and most blooms during the winter. Early in September, or before cold wet weather injures them, they should be carefully potted. The compost in the pit, to which may be added a little old Mushroom-bed manure, will suit them, and clean well-drained pots varying in size according to the balls of soil and roots secured with each, ought to be used. Our pots vary from 8-inch to 10-inch in size, and into these they are firmly potted. If the weather is favourable they may be stood under a north wall or other shady position for a few days, or if the weather is wet and cold they ought at once to be housed.

They commence flowering directly after they are lifted, and if kept in a light airy position in a house in which the temperature ranges from about 50° at night to 60° in the daytime they are, if properly tended, bound to flower abundantly. At no time ought they to suffer from want of water, and both when planted out and

potted up they are benefited by occasional supplies of weak liquid manure of any kind. At the same time they may be easily over-watered. All kinds of insect pests are troublesome, but mealy bug is the worst enemy to *Bouvardias*. Petroleum is the best remedy for bug, this being applied at the rate of 2 ozs. to a gallon of hot water. This should be kept well stirred as it is being used, and those who are at all nervous about its injurious effects on the plants may syringe it off in the course of an hour. Syringings will keep down red spider, and occasional fumigations destroy green and black fly.

The most useful variety is *Vreelandii*, and at least half the stock may well be of this valuable white sort. *Hogarth* and *Elegans* are good scarlets, and the pink *Delicatissima* is very free but not in much demand. *Humboldtii corymbiflora*, *jasminiflora*, and *jasminiflora longipetala* are handsome white varieties, useful for bouquets, but are not so durable or profitable as *Vreelandii*. *Alfred Neuner*, white, double, is of good service, but I do not much care for the pink double *President Garfield*.—I. M., *Somerset*.

CUTTING ASPARAGUS.

OPINIONS are invited by "A Thinker" on cutting the weak growths of Asparagus. Here is mine—rather Mr. "Thinker" shall do it himself. Did you ever have "twitch" in Asparagus beds, or somewhere where it could not be forked out? or Bindweed and Bishop's-weed in bush fruit plantations and beds of Lily of the Valley respectively? If so, how did you kill it? You pulled up the twitch every time it got large enough to lay hold of, and the other weeds were served the same. Just so. The weeds got weaker and weaker, until at last they died. Keep on cutting Asparagus until late in the season, and you will find it also gets weaker every year. Late cutting gives late growths; the growths have not time to store up sufficient nutriment in a strong bud or buds at the base, and singularly these come late the following spring; and, more remarkable still, they are mostly without flowers and without fruit—i.e., berries. The young weak growths allowed to grow away in May transmit nutrition to the buds at the base in such quantity and over so long a period that they become stout and thoroughly solidified, store sufficient nutriment to insure early and good heads the following spring large enough for cutting. I will have a "cut in" on the greater subject of the formation of fruit buds and ripe wood another day.—G. ABBEY.

SHRUBBERIES AS SCREENS.

"Do print something about evergreens. They once made my garden cosy and private, but it long ago ceased to be so owing to the shrubs losing their leaves, and we are now overlooked from a public thoroughfare, as about all that is left of the evergreens is above the line of vision." In answer to that letter of a "Suburbanist," we print a communication from an experienced gardener, who has had precisely the same subject under his consideration, and who writes:—A few days ago I called upon a gentleman residing in a villa, with pleasure grounds of some extent, formed by himself some twenty years ago. In speaking of the bounding shrubbery, which he said he had planted to screen his garden from the public view, he lamented most pathetically the gradual death of the evergreen shrubs which were originally planted, not half a dozen of which were alive, and even those were dying by inches, or I might say feet, every year. "What can be the cause," asked he, "that whilst the Elms, Poplars, Sycaures, &c., have become good sized trees as you see, the Laurels, Bays, Hollies, Box, &c., have nearly all perished? It must be the soil or the blight that has destroyed them." After a moment's thought I said "No, it is neither the soil nor the blight that has done the mischief; it is owing to planting forest trees amongst the shrubs, and allowing them, which they were sure to do, to choke the evergreens by overshadowing them, and taking up the nutriment for their support which the shrubs ought to have had. The consequence is, as you see, what was intended for a permanent living screen is no screen at all; the forest trees have not only destroyed the shrubs, but have also lost their lower branches, so that there is nothing to keep out the prying eyes of the public excepting the naked stems, or protect our garden from the rude blast of cold winter or hurricanes of summer winds." "In such cases what is to be done. I do not like walls, they give my place the appearance of a prison or union yard. What should have been done at the outset?"

These queries, and the patent fact that the shrubs had nearly departed and the trees become useless as a screen, have led me to observe many places since in some cases in quite as bad a plight, and many more rapidly approaching to it. I purpose in this paper to give my ideas on the subject, both prospective and retrospective; or, in other words, to plant so as to avoid the evil, and where it exists to adopt the best means to cure it.

First, then, how to avoid committing the error in planting

that has led to such an objectionable effect as in the case in question. There are two methods of doing this—either to plant no forest trees at all, or to prune them in severely, so as not to shade the evergreens; and, when these latter have attained a height sufficient to answer the purpose, either to cut down the trees or remove them. I know in villa gardens near large towns, where privacy is desired as soon as possible, the owner is anxious to do so by planting trees, Limes or Elms, from 8 to 10 feet high at once, with evergreens in front. Hence many nurserymen near London, Manchester, Liverpool, &c., find a market for their overgrown forest trees, that would otherwise have been cut down for stakes or other purposes years before; but even this desire of privacy might be indulged and a permanent screen secured by obtaining tall evergreens from the same nurseries, and these have the advantage of being a dense screen both winter and summer, and have an immediate effect, and an increasing one from year to year.

Many nurserymen, to oblige their customers, and no doubt to their own advantage, keep by them a considerable stock of large Hollies, Arbor Vitæ, Yews, Red and White Cedars, &c., and even Spruce and Scotch Firs for this very purpose; and in order to insure a safe removal they have them transplanted every second, or, at the farthest, third year. Such plants, so removed at stated seasons, produce a dense mass of fibrous roots, which, when carefully taken up and as carefully planted, will be almost certain to grow. They have also this advantage, that they may be transplanted at almost any season of the year, excepting, perhaps—and it is perhaps only—during the hot summer months, when they are in full growth.

Where immediate effect is not eagerly desired, then in planting a new shrubbery as a screen I would recommend the ground to be well drained if necessary, and afterwards trenched as deep as there may be tolerably good soil. This should be done, if possible, during summer, and finished by September. Then in October procure evergreens from 2 feet to 3 feet in height, and plant them rather thickly—that is, about a yard apart. The reason for planting them so closely is that they may shelter each other and sooner cover the ground. This thick planting, however, must be done with this proviso—that as soon as they touch each other and begin to interlace their branches every other one must be taken up. They will either serve to plant in some other part of the grounds, or they may be parted with to a nurseryman, who would gladly purchase or exchange for them at a considerable profit to the owner. The rest that are left in the plantation will now have space and air to extend their branches sideways, and if a quantity of fresh rich soil is put on the ground to replace that which was probably taken away with the shrubs parted with, the others would quickly send their fibres into the fresh soil, and draw large supplies of nutriment therefrom, which would cause them to grow astonishingly. This thinning might be repeated, if necessary, again in three or four years with great advantage.

I have thus, I trust, proved how a dense screen of evergreens might be obtained most effectually. If, however, the objects sought to be concealed should be houses or unsightly buildings of any kind, I would then advise the back row of the shrubbery to be, where they would grow, Spruce or Scotch Firs, intermixed with compact-growing deciduous trees, such as Limes or Lombardy Poplars; but where the Firs would not grow, owing to the smoke of a large town, then I would plant Lombardy Poplars only, with the evergreens in front.

The last branch of my subject is, What is to be done with a place in the condition I described on opening this subject? The most effectual method would be, of course, to cut down the overgrown naked trees, stub up their roots, give the ground a deep trenching, adding fresh soil and dung to renew its strength and power of nourishing a fresh plantation. Then go to the nearest nursery, and procure at least one row of large, ready-grown, evergreen shrubs or trees, and thus obtain a screen at once; or take a medium course—cut down half or two-thirds of the old trees, and prune in severely the straggling branches of the remainder; then do as before advised, trench the ground, and obtain evergreens to fill up the naked void. This latter plan of preserving some of the best trees, and pruning them so that the evergreens would find support, air, and light, I have seen done very successfully in a plantation that had been thinned of many naked straggling forest trees. Every evergreen was planted in a puddle, and very few failed. I saw the plantation ten years afterwards, and it was so dense and complete a screen that I could not see through it. The trees that were left formed a dense canopy overhead when in leaf that sheltered me, and no doubt the evergreens, too, from a blazing summer's sun. I can only say that whoever has a naked plantation, planted originally to render his grounds private, but now letting in every wind that

blows, and exposing all parts of the grounds to the gaze of every passer-by, let him follow out the advice I have given in any or either of the methods described, and I will warrant that in a very few years he will have as complete a screen as he need desire.—A. T.

LONDON'S LESSER OPEN SPACES—THEIR TREES AND PLANTS.—No. 9.

WESTMINSTER, some localities in which I have already described, has but poor fragments left of its fine open spaces, which even down to the reign of George III made it, though a city, certainly an example of a semi-rural one. If not very venerable myself, I can yet remember the fine avenue of trees that extended from old Brewer's Green across the Park, which was early in this century the residence of Elliot the brewer, and near the expanse used as a place for military exercise called the Artillery Ground there was, I believe, a Willow Walk. Tothill Fields furnished employment to the botanists and herbalists of last century, and the vendors of Watercresses along London streets were able to supply themselves with a stock gratis from the many ditches of the neighbourhood. Broad, too, was the space between Millbank and Chelsea, where some of London's earlier market gardeners reared choice fruits and vegetables on the manor of Heyts, or Heat, but that was before land became so valuable in the suburbs, when there was no railway transit from distant places, and it might be added, when little of such produce came into England from the Continent.

However, if Westminster lost gardens it once possessed, it has acquired others. Witness the Victoria Embankment, which extends from Northumberland Avenue to Blackfriars, and though small in size compared to the west end parks, this has about ten acres of land rescued from the river, where trees and shrubs offer a more pleasing prospect than the banks of mud which dwellers in the streets beside the Thames used to survey. It is curious to stand here and survey the water-gates of the old mansion of the Buckingham and of Somerset House, showing where the tide once washed inland, and was convenient, doubtless, to the gardeners along the Strand—named apparently from the sandy nature of the soil—for the nobles' residences there had their lawns, their flower beds, and tree clumps, with a variety of statuary, Inigo Jones' gate alone remaining as a specimen of his work hereabout; the many figures in Arundel House gardens, after resting awhile in Cuper's gardens, Surrey, seem mostly to have been broken up. What a curious exhibition might be made of the garden statuary of our ancestors. There are more examples surviving than might be supposed. But from the demesnes of Arundel, which were extensive, old cuts show that there were fine prospects of Middlesex and Surrey. So also from the grounds of Somerset House, which stood rather higher, and had shady recesses as well as a bowling green and lawns. Not a solitary tree can be discovered now which would take us back to the Tudor days in or about Westminster. The fact is, folks planted here few Oaks, Yews, or Chestnuts, and the venerable Elms, Poplars, and Willows either died naturally or yielded to insect attacks. On the Victoria Embankment is one corner westward which does possess trees which must have flourished before it was formed, and near enough together to make that part rather grove-like. These are Elms, Limes, and Poplars, but I question whether the largest is a hundred years old. A few straggling Elder bushes also, that skirt the edge of the ground, remind us of the time when this shrub was greatly favoured by the planters of London gardens. It could hardly have been for its beauty, nor for the sake of its flowers and fruit, rather for a relic of the old regard that belonged to it through popular tradition. There has not been time yet for the trees placed in the gardens at the time of their laying out to make much wood, and the Planes in particular, of which, as usual, there is a predominance, do not appear to have made the average growth, though they look healthy. Limes and Poplars are part of the minority. There are a few Hornbeams, this being a species seldom planted about London. It is not attractive, but grows fairly well. I advocate, what to some persons may seem ridiculous, the introduction of some fruit trees, suitably protected from the London gamin, on such open places as the Embankment. That several kinds of Apple, Pear, and Plum could be chosen which might thrive and bear I am sure, and the sight of them would certainly be pleasant to many.

Some Rhododendrons were in bloom here when I paid my visit, but it could not be said there was a display of this May flower; and, although distributed about were numerous Hollies of varied size, these had no flowers. The species seldom puts forth any in the London atmosphere, nor does the Laurustinus. No doubt many of the readers of this Journal have noticed how this plant has suffered in most places from the prolonged winter. It is usual for it to flower partially during the autumn, but most of the buds remain closed through the winter, and the Laurustinus makes a show as one of the pioneers of spring. This year the blossoms suffered from the continued frosts, and when the weather broke their expansion was checked by the rough winds. Of miscellaneous evergreens there is a good assortment in these gardens, and they are well distributed, with a sprinkling of Lilacs, Laburnums, and familiar deciduous shrubs. As formerly, the Camellia was found to flourish at Vauxhall, near the banks of the Thames. I should like to see it tried on the spot, where I believe it would succeed. Some banks of Ferns would be an improvement, and at present there are very few Chrysanthemums, though several varieties stand the London air without protection, as is evidenced by the Temple Gardens adjacent. On the Embankment are sundry spaces enclosed by walls connected with the District Railway, and these have been covered

with Ivy, or partially, but they afford opportunity for the cultivation of other hardy creepers. Here, as elsewhere, are also some of those Ivy edgings which are the fashion in public gardens. They are rather objectionable, as already remarked; specially so when narrow, yet edgings of plants less tough are apt to suffer from the occasional trampling they get. An edging of Periwinkle (*Vinca minor*) would probably please many visitors, and grow as well in town as elsewhere—that is to say, put along the borders of those beds planted with shrubs, not flower beds. I noticed attempts to grow annuals amongst the bushes where spaces occurred, but the circles in which these had been sown showed great irregularity, and seeds are almost wasted when thus used. After the spring bulbs have flowered the smaller beds are planted out in the customary manner with cheap half-hardy species, the arrangement being geometrical for the most part.

Not far from Lambeth Bridge, and in the direction of what is commonly called Millbank (where in the seventeenth century was the mansion and gardens of the rather notorious Lord Peterborough) there is an open space where now we should not expect to find one. It is probably seldom visited by any explorer of London's greeneries. Its extent is about an acre, and for 120 years it was the cemetery of St. John's, Horseferry Road. The Duke of Westminster opened this as a public recreation ground last year, and commented on the fact that more than 40,000 persons were living in its neighbourhood, expressing the hope that it would prove a place of health and strength to generation after generation. I trust it will be all the Duke hoped; at present the space does not look particularly lively, nor does full credit to the sum of money spent upon it. On the four edges of the ground there are lines of old trees; the Poplars on the north and south are of goodly proportions, and surpass the Planes on the east and west. Sundry tombstones, which have been suffered to remain along two sides, do not communicate an air of cheerfulness to the place. The plan of laying out is this. An outer path all round, from which eight paths diverge to meet in a central space laid with asphalt. Each of the irregular-shaped figures into which the ground is thus divided contains a flower bed which is surrounded by a grass plot. Visitors, therefore, cannot approach the flowers and shrubs, nor are they permitted to walk on the grass. A few additional trees scattered over this space would improve it, and might not the children for part of the year be allowed the privilege of a roll upon the grass?

Apropos of grass, the fortress-like prison at Millbank is surrounded by a grassy circle, which must have been surveyed by many a prisoner with sad remembrances of early days. Near Vauxhall Bridge there yet remain sundry old-fashioned gardens laid out on the plans of a bygone era, but they are not open to the public. One of these has a hedge of Larch, and flourishing too, which we do not often notice about London, and another contains some remarkably fine Laburnums and Beeches. Passing still westward we come upon Thames Bank, so called, where at the river end of the now shortened Grosvenor Canal we have also some shady gardens yet surviving, and an avenue of Limes of middle age, and even a space devoted to the culture of vegetables.—J. R. S. C.

VIOLETS IN FRAMES.

(Continued from page 512.)

MANURES.—*Leaf Soil.*—Matter of a slow, gradual decomposing nitrogenous nature is the most suitable for Violets. Decaying leaves from the moisture, the gases evolved, and the humus formed afford the essential stimulus of root-action and food supplies in an acceptable form. Violets thrive admirably in leaf soil alone, attaining a surprising luxuriance and perfection of bloom. Leaf soil, or leaves about half reduced, may be used as manure to the extent of one-third that of the soil; a dressing 3 inches thick being mixed with the top 6 inches of the soil in which Violets are to be planted for making and completing their growth, is suitable for ground needing liberal enrichment, less for soils that are in good heart. For plants in pots it may be used to the extent of half in mixture with lumpy loam, and the addition of a sixth part of rather lumpy charcoal, but abundant supplies of water are then necessary.

Farmyard Manure.—This must be used with care and judgment. Too rich soil favours an excessive luxuriance and prevents the free formation of roots so necessary to a well-sustained growth. A fifth of well-decayed manure is a sufficient dressing to mix with soil, whether for plants outdoors or in pots, and should be thoroughly incorporated with the top spit, or 9 or 10 inches of the surface for strong-growing varieties and 6 to 9 inches for the small or medium growers respectively. Avoid manure in a fresh state, especially if saturated with urine, as that from loose boxes on which horses have stood, and from covered sheds used for cattle. Such must only be used in moderate quantity in the decayed state, as it is rich in potash; and though Violets like a small quantity it is so abundant in fresh and somewhat reduced manure of the nature indicated as to be positively injurious through destroying and preventing the formation of roots.

Soot.—A capital manure and at the command of everyone. Half a peck per rod is sufficient at a time as a surface dressing, and is best given during growth. Soils that need enrichment may have a peck per rod scattered evenly on the surface and pointed-in before planting. In a liquid form it may be applied at the rate of a tablespoonful to a quart of water, the soot being brought to a cream with a little water and stirring, then adding the water. A peck of soot to a hog-head of water may be used for general watering purposes.

Dissolved Bones or Superphosphate of Lime.—A powerful manure. It should be mixed with half its weight of charcoal dust, and applied at the rate of 8 lbs. per rod. Violets are equally fond of the charcoal or of

the dissolved bones or superphosphate. Half an ounce per gallon, or 1 lb. to 30 gallons of water, is a proper quantity to use as liquid manure.

Night Soil.—Dried, pulverised, and mixed with an equal weight of charcoal an inoffensive fertiliser is obtained. A hundredweight per rod is suitable dressing.

VIOLET ENEMIES.—*Slugs.*—These are very fond of the tender growths and flowers. Ground infested with the pests should have a dressing of nitrate of soda, 1 lb. to a rod, scattered evenly over the surface, and during mild weather in March or a little time before planting the Violets. Lime is also good, a bushel per rod applied fresh or newly slaked, and pointed in lightly. Half a peck of salt per rod a little prior to planting is also good against slugs and worms, and soot at a similar rate is a good slug assailant. During growth dusting with quicklime or dry soot in the evening or early morning are destructive of slugs. They may also be sought for after rain, in the evening after dark with a lantern, and destroyed. Worms are troublesome in moist weather, drawing the leaves of the plants into their holes, and sometimes drawing the plants out of the ground. They are readily disposed of by using the same means as advised for slugs. Mice are very destructive of the seeds. They are best trapped. In the case of choice varieties the seed vessels should be enclosed in wire gauze net. Seed beds must be protected in a similar manner.

Insects.—Red spider is the great enemy of Violets. It is a consequence of insufficient moisture in the soil and atmosphere, and not infrequently of poverty. Dustings with soot are good and useful as manure; but the best remedy, or rather preventive, is abundant moisture at the roots and rich surface mulchings, accompanied by watering or syringing in dry weather. Attacks should be promptly met by syringing forcibly with a soft-soap solution, 2 ozs. to the gallon, and as the pests assail the under side of the leaves it should be directed against those parts as much as possible. Plants in pots may be dipped in the soapy solution. The chief thing is to keep a sharp look out and assail it on its first appearance, for if once it obtains a footing it is difficult to eradicate.

Aphides sometimes attack the plants. They may be destroyed by syringing with tobacco juice diluted with six times the quantity of water, or the soapy solutions may be used. Plants in frames or pots attacked by aphides should be fumigated with tobacco paper or rag on two or three consecutive calm evenings, having the foliage dry, and being careful to deliver the smoke cool. The smell will soon pass off, and the flowers are not stained as they would be were tobacco water used. Thrips attack only in very dry weather, and are readily subdued by the same means as red spider.

Mildew and Mould.—Mildew occasionally infests the foliage and destroys the centres of the plants, the leaves having a stunted skeleton-like appearance, little but the midrib remaining. It is a consequence of drought at the roots more than anything. The best remedy is to apply water and a mulching. It sometimes, however, appears in other circumstances, and the best remedy is sulphur water. It is made by placing 1½ lb. of sulphur vivum, and 1 lb. unslaked lime in 2 gallons of water, boiling half an hour; let it stand until cold, then bottle the clear liquid. A wineglassful to 3 gallons of water syringed over the plants so as to thoroughly wet them, will prove efficacious. Dry sulphur is innocuous. The mildew is fortunately of rare occurrence, never appearing on well-fed plants.

Mould.—This is a consequence of damp—a close, moist, vitiated atmosphere. The only real remedy is plenty of air, and allowing the plants room so that it can have free access. Overcrowding is a great cause of mould, and equally pernicious is keeping them close. Air is most important in arresting damp. Remove all decayed leaves and blooms, and every trace of mould, and dust with charcoal. An occasional sprinkling between the plants will do much to prevent and arrest damp.

ARRANGING VIOLETS.—Flowers are unquestionably best displayed with their own foliage. A few blooms tastily put together, three to five, and inserted in a Violet leaf so as to show a little margin of green all around, the flowers secured to the leaf so as to maintain them in the given position, are appreciated by all lovers of sweet flowers. If the flowers are added to in number, making the bouquet wider and deeper, forming it with lobes in imitation of the Violet leaf or heart inverted, and backed with leaves so as to form a margin of greenery, and secured neatly with binding wire, the stem about 2 inches long, we get a button-hole bouquet of the modern type, but whether they are so much appreciated as the smaller is matter of taste. No form of displaying Violets is so appropriate as placing each individual bloom in the centre of a leaf only just large enough to admit of a margin of green showing round the flower. Fine stem wire doubled so as to hook the flower stem, passed through the midrib of the leaf, and brought down the petiole of the leaf, and bound with fine binding wire, will admit of as many flowers being put together as is wished, and by bending the stem they can be given most any shape required.

For sprays thin-forked twigs of Privet will much facilitate operations, the flowers being first mounted on leaves in the manner previously advocated, similar remarks applying to tiaras, wreaths, &c.

Violet leaves are not always available of the requisite persistence. It is only in autumn that matured leaves can be had. The young leaves are soft, and soon droop if not kept in water. This spoils the appearance of an otherwise very pleasing bouquet. A good substitute is found in Ivy leaves. The leaves may be green or variegated, and of various sizes, so as to suit the upper side and lower part of the bouquet, and, being wired, they can be made to fit any position and give the exact form desired. Being more persistent than Violet leaves they are highly

appropriate for a back to Violet bouquets. Sprays of Ivy decked with Violet blooms, one or more on the leaves of the Ivy, are charming for dresses and many other purposes.

By artificial light blue and purple Violets are not very effective, especially as buttonholes, but they are much esteemed all the same both by the fair and sterner sex. White and pink are very telling under artificial light, white showing well on dress coats, and pink is heightened, becoming brilliant on white dresses. The finest effect of all is found in a neatly arranged buttonhole bouquet of blue or purple Violets on the scarlet of Nimrod's devotees.

Bouquets of Violets are best made in parts. All the longest-stemmed blooms should be formed into a round bunch. This for the crown or centre. Four other bunches with flat tops and all the blooms facing one way should then be formed and tied at the bottom of the stems. The central bunch is mounted on and secured to a stem of Privet or other twig, and a little clean wet moss placed around the base of the stems and tucked in amongst them, and the other bunches are placed around with some wet moss tucked in amongst them, and so arranged as to form a rather flat half ball. The moss will add to the endurance of the flowers, and are useful in opening out the flowers, which, however, should be so close as to just touch, but they are better rather thin than too crowded. Flowers may be added to give the required roundness. Violet leaves mounted form the best upholding or surrounding of the bouquet, and then the bouquet paper and holder.

Very large bouquets are made by doing the blooms up in little bunches, and tying them at the base of the stems so that the flowers hang rather loosely, or just touching each other. Each bunch to have a little wet moss wrapped round the base of the stems and mounted on a twig of Privet. The bouquets can be made in this way to any size required, either with or without foliage interspersed, and they may be quartered with white or pink blooms as taste may dictate. The greenery may be either of Violet or Ivy leaves, and the margin should be massive in proportion to the size of the bouquet.—VIOLETA.

ROSE SHOWS.

ELTHAM.

I HAVE had the privilege of assisting, as our neighbours say, at many Rose shows during the past few years, held in all sorts of places—some pretty, some very much the other way, but I have never assisted at one held in so lovely and interesting a place as that on Saturday held in the grounds of Eltham Court, an old Crown residence, at present tenanted by a very earnest rosarian, Mr. R. Bloxam. Indeed, there are few more interesting places in the neighbourhood of London. Eltham was once a Royal residence, and the round banqueting hall which still remains is not the only indication of its former splendour. The moat which surrounds, the evident traces under the greensward where the foundations of walls and portions of the palace once existed, also tell their tale. It dates back to the Conquest, when it formed part of the possessions of Odo, Bishop of Bayeux. Afterwards it passed into the hands of the Crown. Here Edward II. of unhappy memory resided, and here one of his sons, John of Eltham, was born; here Edward III. twice held his Parliament, and entertained in grand style King John of France. Other kings resided here. Henry VIII. preferred Greenwich, and although he sometimes resided here yet Eltham became comparatively neglected. In Eltham, too, lived Vandyck, and in our time it has been well known by the celebrated horse-breeding establishment of Mr. Blenkison at Middle Park, and here his two horses, Gladiator and Blair Athol were sold for £20,000. But there is too much to tell of the past history of Eltham Court, and I can only say now that the garden is kept up in admirable style by Mr. Bloxam; that the moat is transformed into a Rose garden, and that although the palace grounds have in times past witnessed many a gay pageant, they never witnessed a more pleasing scene than when on Saturday under a brilliant July sun gentle and simple, the gentlefolks of the neighbourhood and the cottagers, met together to do honour to the queen of flowers, and to compete for the various productions of their gardens. It is often placed at the disposal of parties for charitable and benevolent objects. Lately there was a party of eighty old women from London, and one of them said to the lady of the house, "Well, ma'am, I have always heard tell that heaven is a beautiful place, but surely it can't be more beautiful than this."

As the Show is held on the same day as the Crystal Palace Exhibition is of necessity a small one, and is most confined to growers of the neighbourhood. There are six classes confined to amateurs in the neighbourhood, and three open to all. In the class for eighteen Mrs. Fuller of Bexley Vicarage was first with a good box containing Marguerite de St. Amand, Charles Lefehvre (this Rose obtained the National Rose Society's prize medal for the best Rose in the Show), A. K. Williams, Marie Finger, Horace Vernet, François Michelin, Madame Hippolyte Jamain, Dupuy Jamain, Prince Arthur, La France, Baron de Bonstettin, Marquise de Castellane, Violette Bouyer, Charles Darvin, La Boule d'Or, Camille Bernardin, and Duchesse de Valombrosa. Mr. Bloxam was second, and Mr. A. Harris third. In the class for twelve Mr. Ongley was first with A. K. Williams, Marquise de Castellane, Captain Christy, Countess of Rosebery, Louis Van Houtte, La France, Duchesse de Valombrosa, Camille Bernardin, Marie Van Houtte, Ferdinand de Lesseps, and Madame G. Luizet. In class for four trebles Mrs. Fuller was again first with A. K. Williams, Madame G. Luizet, Marie Finger, Camille Bernardin; Mr. Bloxam second, and Mr. Harris third. In the class for six of any one variety Mr. Bloxam was first with La France; Mrs. Fuller second with Captain Christy; and Mr. Harris third with Madame G. Luizet. In the class for six varieties Mr. Grove was first with Alfred Colomb, Captain Christy, Marie Baumann, Madame H. Jamain, and two others. Mr. K. Halloway was second, and Mr. Ongley third. In the class for six Teas Mrs. Fuller was again first with Hon. Edith Gifford, Jules Finger, Jean Ducher, Madame Lambard, Innocente Pirola, and Marie Van Houtte. Mr. Ongley second and Mr. K. Halloway third.

In the open class for twenty-four the first prize was awarded to Messrs. George Bunyard & Co., Maidstone, for a box containing Madame Charles Crapelet, Captain Christy, La France, Comtesse d'Oxford, Marie Baumann, Ulrich Brunner, Violette Bouyer, Mons. Noman, François Michelin, Lady Mary Fitzwilliam, Marie Rady, Egeria, Beauty of Waltham, Elie Morel, Charles Lefebvre, Madame Lacharme, Marquise de Castellane, Duchesse de Vallombrosa, Star of Waltham, Madame Ferdinand Jamain, and Sir Garnet Wolseley. In the class for twelve Dr. Ashurst of Farningham was first with Baroness Rothschild, Le Havre, Violette Bouyer, Duchesse de Vallombrosa, La Rosière, La France, A. K. Williams, Baron Bonstettin, Mons. Noman, and Marquise de Castellane. In the class for twelve Teas Dr. Ashurst, was again first with Madame Welsh, Catherine Mermet, Rubens, Souvenir de Paul Neyron, La Boule d'Or, Marie Van Houtte, Anna Ollivier, Bouquet d'Or, Jean Ducher, and Alba Rosea. Messrs. Bunyard & Co. were second. There was the usual assortment of decorations, which seemed to be very good, and an excellent display of cottagers' productions, and as we surveyed the quiet and pleasant scene we could hardly realise that only eight miles away lay the big city, whose spires and towers can be plainly seen from the grounds. I hope it may be long ere the inevitable speculator comes to spoil this pretty place.—D., Deal.

CARDIFF.

THE sixth annual Show of the Cardiff Rose Society was held in the Drill Hall, Cardiff, on July 7th. The exhibits were about the same in numbers as in former years, but altogether the Show was a good one. Mr. Pettigrew of the Castle Gardens again acted as Secretary. Local exhibitors showed remarkably well, but all were complaining of the havoc severe drought and intense sun had caused amongst their blooms.

In class 1, forty-eight distinct varieties, Messrs. Cranston & Co., Hereford, were first with what appeared to us the third exhibit in the section, the majority of the blooms being below the average in size and many of them tarnished. The best were Lady Mary Fitzwilliam, Constantin Tretiakoff, Fisher Holmes, Le Havre, Prince Arthur, Mons. E. Y. Teas, A. K. Williams, Maréchal Niel, Duke of Wellington, and La France. Mr. Stephen Treseder, Ely Road nurseries, Cardiff, came second with blooms notable for their good size, fine form, and perfect colour, amongst which were grand blooms of Edward Morren, Belle Lyonnaise, Countess of Oxford, Annie Laxton, Countess of Rosebery, Boieldieu, Madame Nachury, and Marquise de Castellane. Mr. Crossling, Penarth Nurseries, South Wales, was third, and followed very close upon the second stand. The following varieties were especially fine:—Merveille de Lyon, Star of Waltham, Dupuy Jamain, A. K. Williams, and Marie Baumann. Mr. William Treseder of Cardiff exhibited well in this class. Mr. Thomas Griffiths, Tillington Nurseries, Hereford, also exhibited well, but through a mistake in showing two blooms of one sort he was disqualified. In the twenty-four distinct varieties, three trusses of each, Messrs. Cranston were first with fair blooms, amongst which were Comtesse de Serenye, Abel Carrière, and Beauty of Waltham. Mr. Stephen Treseder was a close second, showing a fine uniform collection, with extra fine blooms of Prince Arthur, Queen of Queens, Merveille de Lyon, and Bessie Johnson. Mr. William Treseder came third with a very good selection.

For eighteen single trusses, Teas, Messrs. Cranston were first, some of their blooms being very good and others poor. The best were La Boule d'Or, Princess of Wales, and Jean Ducher. Mr. Crossling was placed second with a good box, in which the following were exceedingly fine:—Maréchal Niel, Madame Berard, Niphotos, Caroline Kuster, Jean Ducher, Gloire de Dijon, Homère, and Etoile de Lyon. For twenty-four blooms, one variety, Hybrid Perpetuals, first Mr. Stephen Treseder, with Merveille de Lyon, very large blooms, fresh, and pure. Second, Messrs. Cranston, with Mons. Noman. Third, Mr. Thomas Griffiths, Hereford, with Lady Mary Fitzwilliam, very large, but too open.

In the class for thirty-six varieties, open to nurserymen in South Wales, Mr. Crossling was first with one of the finest collections in the Show, in which we noted grand blooms of Duke of Edinburgh, Masterpiece, Reynolds Hole, La France, Alfred Colomb, and A. K. Williams. Mr. William Treseder was second, his blooms being large, especially those of Mrs. Baker, Baroness Rothschild, Louis Van Houtte, Duke of Teck, and A. K. Williams, but some of the others had opened too much. Third, Mr. Stephen Treseder with small fresh blooms. In the class for twelve, all one variety, Teas, only one box was staged, the first prize going to Mr. C. Thompson, Preswylfa, Cardiff, for Gloire de Dijon.

In the amateur section, open to the United Kingdom, the class for twenty-four distinct varieties brought out some good competition, as the winner of the first prize here secures the gold medal of the National Rose Society, and this was awarded to Mr. S. P. Budd, Bath, for a fine group. Here A. K. Williams, Pierre Notting, Marshal P. Wilder, Alfred Colomb, Brightness of Cheshunt, and Duke of Teck were the leading blooms. Mr. Hobbs, Bristol, came second with very fine flowers of John Stuart Mill, Charles Lefebvre, Earl of Pembroke, Xavier Olibo, Lady Mary Fitzwilliam, and Madame M. Verdier. Mr. James Davies, Leominster, was third. For twelve distinct varieties, three blooms of each, Messrs. Budd, Hobbs, and Davies secured the prizes in the order named. In twelve distinct varieties, single blooms, Mr. Pettigrew, the Castle Gardens, was an easy first, his blooms being large and fine, the best being Countess of Oxford, Captain Christy, La France, Madame Lacharme, and A. K. Williams. Mr. Budd was second and Mr. Davies third. In twelve Teas Mr. Hobbs was first with a good stand, the extra fine blooms being Princess Vera, Anna Ollivier, Jean Ducher, and Belle Lyonnaise. Mr. Budd and Mr. Davies came second and third, and in the twelve single blooms, Hybrid Perpetuals, the same gentlemen had it all their own way, and with the exception of Mr. Pettigrew's one prize, they secured the whole of the prizes in the open amateur classes.

In the South Wales and Monmouthshire class there were some good stands from local growers. For twenty-four distinct varieties the silver medal of the National Rose Society went to the winner of the first prize—namely, the Misses Rous, Courtyralla, Cardiff, with a fine collection, in which Madame Lacharme, Ferdinand de Lesseps, and Charles Darwin were particularly well shown. Mr. Moor, Coedriglan, Cardiff, was second, and Mr. C. Thompson third, both showing well.

For six Teas and six Hybrids Mr. Moor was first, the Misses Rous second, and Mr. C. Thompson third. In the class of twelve Colonel Page, Cardiff, was first, Mr. Thompson second with Magna Charta, and the Misses Rous

third. Numerous special prizes were offered by local nurserymen and others, and these were well competed for. The Marquis of Bute gave his usual magnificent prizes for the best box of cut blooms of the York-and-Lancaster Rose, and Mr. Pettigrew secured the first prize with a grand box; General Lee, The Mount, Dynas Powis, being second, and Mr. Moor third. For twelve blooms of Captain Christy, Mr. Pettigrew was first, General Lee second, and Colonel Page third. Mr. Pettigrew was also first for six of Duke of Edinburgh and six of Captain Christy, first for twelve of Baroness Rothschild, and first in other three classes, the majority of the blooms shown in them being very fine. Bouquets of Roses and other flowers were numerous exhibited, Mr. Phelps, Cardiff, and Mr. Crossling showing the best.

Several prizes were offered for Strawberries. For one dish Mr. Case, a Cardiff fruiterer, was first with President, Colonel Page second with the same variety, and for three dishes Mr. Moor was first with Sir Joseph Paxton, Dr. Hogg, and President. Mr. Pettigrew was second with the same varieties, all the fruit being very good indeed.

Considering that the borough election clashed with the Show, the attendance was considerable, and we trust the results have been so satisfactory that the Society may be able to continue on in its useful course.

OXFORD.—JULY 7TH.

THE thirty-fifth annual Exhibition of the Oxford Rose Society was held, by the kind permission of the Warden and Fellows, in the delightful gardens of New College. The exhibits, we remarked, were not as numerous as on some previous occasions, but the quality of blooms staged in many of the amateurs' stands, as well as in the classes open to all England, was especially noteworthy.

In the open classes the first for forty-eight varieties, three trusses of each, Mr. Charles Turner, Slough, was awarded the first prize for a well-arranged stand of fresh-looking blooms with clean healthy foliage, amongst the finest being Ville de Lyon, Reynolds Hole, François Louvat, Prince Arthur, Queen of Queens, Alfred Colomb, Ferdinand de Lesseps, Lord Macaulay, Marquise de Castellane, Countess of Oxford, Madame Alfred Dumesnil, La Duchesse de Morny, Madame Marie Verdier, Marie Louise Pernet, Comtesse de Serenye, Merveille de Lyon, Beauty of Waltham, Marie Baumann, Prince Camille de Rohan, Abel Carrière, Duke of Edinburgh, Alba Rosea, Souvenir d'Elise Vardon, Catherine Mermet, Madame Caroline Kuster, Comtesse Panesse, Madame Willermoz, Madame Margottin, Etoile de Lyon, Souvenir d'un Ami, and Souvenir de Mons. Paul Neyron. Mr. John Mattock, New Headington, Oxford, was second, his best blooms being Countess of Rosebery, Mdle. Marie Rady, Capt. Christy, Mons. Noman, Madame Marie Verdier, Marie Baumann, La France, Mons. E. Y. Teas, Nardy Frères, Lady Mary Fitzwilliam, Jean Ducher, Niphotos, Madame Caroline Kuster, and Madame Berard.

In Class 2, for forty-eight distinct, single trusses, the above mentioned exhibitors succeeded in securing the prizes in the same order, many of the finest flowers staged in this class in both cases being those already enumerated. There were, however, in Mr. Turner's exhibit, in addition to those named, fine blooms of Mdle. Marguerite D'Ombraïn, Villaret de Joyeuse, Jean Liabaud, Madame J. Periere, Louis Van Houtte, Pride of Waltham, Black Prince, Maréchal Niel, Devonensis, Niphotos, La Boule d'Or, and Jean Ducher, and in that of Mr. Mattock, Reynolds Hole, Duke of Edinburgh, A. K. Williams, Pierre Notting, Alfred Colomb, Madame G. Luizet, Thomas Mills, Amazon, Souvenir d'Elise Vardon, and Etoile de Lyon.

In Class 3, for thirty-six distinct, single trusses, the first prize was awarded to Mr. John Walker, Thame, who staged some very fine blooms, particularly those of Sultan of Zanzibar, Louis Van Houtte, Reynolds Hole, Abel Carrière, Abel Grand, Auguste Rigotard, François Michelin, Lord Macaulay, Madame Eugène Verdier, Madame Gabriel Luizet, Madame Marie Verdier, Marie Baumann, and Marquise de Castellane. The second position was taken by Mr. J. Mattock and the third by Mr. C. Turner.

In class 4, for twenty-four distinct, single trusses, Mr. J. Walker was again first; Mr. G. Humphries, Kingston Langley, Chippenham, second; and Mr. Charles Taylor, Headington, Oxford, third. In class 5, twelve single trusses, one variety dark H.P., the first prize was awarded to Jno. Bywater Ward, Esq., M.D., Warneford Asylum, Oxford, for a stand of Marie Baumann; Miss Watson Taylor, Headington, Oxford, being second with Mdle. Marie Rady. In that for twelve trusses of one light variety J. B. Ward, Esq., M.D., was again first with a beautiful stand of Madame Gabrielle Luizet; Mr. J. Mattock was second with Mdle. Marie Cointet; and Mr. A. Evans, Marston, Oxford, third with the variety that was placed first.

In class 7, for twelve varieties Tea or Noisette, Mr. Charles Turner was first, his stand containing very fine blooms of Alba Rosea, Innocente Pirola, Archimede, Madame Caroline Kuster, Madame Margottin, Madame Lamhard, and Souvenir d'Elise Vardon. Mr. Jno. Mattock was second, and Mr. G. Humphries third.

In the classes open to all except "growers for sale," that of 8, for thirty-six distinct varieties, single trusses, the premier position was won by Miss Watson Taylor, the second prize going to the Rev. Charles Eddy, Bramley Rectory, Hants. In class 9, for twenty-four varieties, J. B. Ward, Esq., M.D., was first; Miss Watson Taylor second, and Mr. A. Evans third. In class 10, for twelve distinct varieties, Mr. E. Thorne was first, Mr. C. Collcutt second, and Mr. W. Narrowway third, each of the prizes in this class, as in the succeeding one, being taken by local growers. In class 11, for twelve distinct varieties, Tea or Noisette, the prizes were awarded to Miss Watson Taylor, Mr. Alfred Evans, and W. Wootten-Wootten, Esq., in the order named.

In the division for amateurs, members of the Society only, there were some very meritorious exhibits. In class 12, for eighteen distinct varieties, single trusses, Mr. Alfred Evans was placed first, Mr. W. Narrowway second, Mr. C. Taylor third. In class 13, for twelve varieties, the competition was keen, the first prize being awarded to a remarkably fine stand of blooms exhibited by Mr. F. Freeman, Oxford; Mr. E. Thorne was second; and Mr. Charles Collcutt third. In class 14, for nine varieties, Messrs. Collcutt and Collins were placed respectively first and second. In class 15, for twelve triplets, the Rev. Chas. Eddy was first, Mr. A. Evans second, and the Rev. E. Penworne Wellings, Stanford, Farringdon, third.

In class 16, for six triplets, Mr. F. Freeman was first; R. Ramsdell

Esq., Chadwick Manor, Knowle, second; Mr. Chas. Colcutt third; and Mr. H. Poulter, Oxford, fourth. For six trusses of any H.P. Mr. E. Thorne and Mr. W. Narrowway were first and second, each staging Mdle. Marie Rady; Mr. C. Colcutt third with Charles Lefevre; and the Rev. E. Penwarne-Wellings, fourth with La France. For six distinct Tea or Noisette the successful competitors were Mr. F. Freeman, R. Ramsden, Esq., and Mr. E. Collins, the prizes being awarded in the order named. For a specimen H.P. bloom Mr. E. Thorne was first with A. K. Williams; Mr. A. Evans second with the same variety; and Mr. Chas. Colcutt third with Marie Baumann; while for a specimen Tea or Noisette bloom Mr. Freeman was first with a high-coloured Maréchal Niel; Mr. E. Thorne second with Niphotos; and Mr. W. Narrowway third with Devoniensis. A noticeable feature was the larger proportion of Teas staged as compared with previous exhibitions of this Society.—I. B. E.

BATH.—JULY 8TH.

ALTHOUGH the exceptionally hot and dry weather recently experienced proved highly detrimental to the Roses grown by local exhibitors especially, there was no appreciable falling off in the number of exhibits generally, and on the whole a very excellent display was made. The trade growers were strongly represented, but many impartial judges were disposed to consider the amateurs were in better form, and they certainly had a fine fresh lot of blooms. All the best-known varieties were included in several of the leading exhibits, and such popular favourites as Merveille de Lyon, C. Lefevre, A. K. Williams, La France, Horace Vernet, Dupuy Jamain, Marie Baumann, Marquise de Castellane, E. Y. Teas, Maréchal Niel, Catherine Mermet, J. an Ducher, Marie Van Houtte, Niphotos, Souvenir d'un Ami, and Comtesse de Nadaillac were largely shown.

NURSERYMEN'S CLASSES.—The competition here was close and good, the Judges eventually awarding the first prize for seventy-two single trusses, distinct, to Mr. B. R. Cant, Colchester; Mr. F. Cant, Colchester, being a good second; and Messrs. Paul & Son, Cheshunt, third. In the next class, that for thirty-six varieties, three trusses of a h., the first prize was deservedly awarded to Mr. George Prince, Oxford; the second prize going to Mr. B. R. Cant, and the third to Messrs. Keynes, Williams, & Co., Salisbury, each lot including many fine blooms. With eighteen varieties, single trusses, Messrs. Curtis, Sanford, & Co., Torquay, were first, and Messrs. J. Jeffries & Sons, Cirencester, second; and in the next class, that for thirty-six single trusses, distinct, Messrs. Curtis & Sanford were first, Messrs. J. Jeffries & Sons second, and Mr. J. Mattock, Oxford, third, all staging very creditable blooms. Mr. G. Prince had the best collection of Teas, Mr. F. Cant being second, and Mr. B. R. Cant third.

AMATEURS' CLASSES.—The Rev. J. H. Pemberton, Romford, was a good first for thirty-six single trusses, distinct; Mr. W. J. Grant, Ledbury, second, and Mr. T. W. Girdlestone a creditable third. With twenty-four single trusses, distinct, Captain Christy, Sidmouth, was first, Mr. W. Narrowway second, and the Rev. C. C. Layard third, all having good blooms. The best twelve single trusses, distinct, were shown by Mr. W. J. Grant, Mr. T. B. Hall, Rock Ferry, being a good second, and Mr. T. W. Girdlestone third; and with six varieties Mrs. Mary A. Weston was first, Mr. J. Smith second, and Mr. W. T. Ball third. The Rev. J. W. Pemberton had the best twelve Teas, single trusses, distinct; Mr. W. J. Grant being a good second, and Captain Christy third; while with six varieties Mr. S. P. Budd, Bath, was first, Mr. Narrowway second, and Mr. J. Smith third.

OPEN CLASSES.—Messrs. Keynes, Williams & Co. were first for twelve trusses of any Rose. Messrs. Curtis, Sanford & Co., second, and Mr. Cant third. For a like number of any yellow Rose the prize-winners were Messrs. F. Cant, B. R. Cant, and W. J. Grant. Any crimson Rose, Messrs. G. Prince, Keynes, Williams & Co., and Curtis, Sanford & Co. La France, Messrs. W. J. Grant, F. Cant, and Curtis, Sanford & Co., the prizes going in the order the names are given for very creditable exhibits in each instance. Mr. B. R. Cant was first for any new Rose of 1884 or 1885, Messrs. Curtis, Sanford & Co. second, and Messrs. G. Cooling & Sons, Bath, third. Mr. J. Mattock had the best basket of Roses, Messrs. G. Cooling & Son being a good second, and Mr. G. L. Hobbs third. Mr. Mattock was also first for nine bouquets of Roses though many preferred the second prize lot exhibited by Messrs. G. Cooling & Son.

The most successful of the local exhibitors were Messrs. S. P. Budd, Jolly, H. James, the Rev. G. E. Gardiner, Messrs. J. S. Pope, G. Horsell, F. Clerk, and H. J. Walker.

The silver medal of the National Rose Society offered for the best Hybrid Perpetual Rose in the Show was awarded to the Rev. J. H. Pemberton, for a grand bloom of Horace Vernet, and another medal for the best Tea Rose went to Mr. F. Cant for a beautiful example of Souvenir d'Elise.

Among the miscellaneous exhibits the most attractive was a display of Japanese Roses (*Rosa polyantha*) and for which Messrs. G. Cooling & Son more than deserved the award of a certificate of merit. Messrs. Cooling had also several other interesting exhibits not for competition.

CALANTHE WILLIAMSII.

IN Mr. B. S. Williams' handsome publication, the "Orchid Album," an excellent illustration of the above-named Calanthe is given, and represents the distinguishing characters faithfully. It is of the *C. vestita* habit with exceptionally large flowers frequently over 2 inches in diameter, the sepals white with the two lateral ones bright rose on the margin; the petals are also white bordered with rose, the lip being an intensely rich rosy crimson. The plant was introduced by Mr. B. S. Williams from Eastern Asia, and flowers freely in the winter months rather later than some of the other forms.

Referring to the culture of these and allied Calanthes in the work above noticed, the author remarks, "These Calanthes are very accommodating, since they will thrive well in baskets suspended from the roof, as well as in pots suspended by wire in the same way as the baskets; they

will also thrive in pots standing on the tables, where room is not an object. If grown in baskets, they will require more room in the growing season. We prefer them in this manner where there is room, as they look so pleasing with the spikes hanging gracefully from the roof. Their flowering season follows that of the completion of the growth of the bulbs, and their growing season commences when they have finished blooming. When this is observed, let them be fresh potted. We have found it best to do this every year, as they lose all their old roots annually. We shake the soil away and cut off the roots and repot them, when, as soon as they begin to grow, they will send out their new roots into fresh soil. The material we use for potting is good rough fibrous loam and leaf mould, with a layer of rough peat and moss on the top of it. In potting, fill the pot with the soil and place the pseudo-hub on the top, just making it firm; it will soon root and support itself. If planted in baskets, it is necessary to place some rough fibrous peat round the sides and at the bottom to keep the soil from being washed out; fill the basket with the same kind of compost as that recommended for the pots, with drainage at the bottom; place the bulbs upright in the basket, about three in number, on the top of the soil, and finish by giving a little water. After the plants have commenced growth and are making roots freely, they should be kept constantly moist, but after growth is finished less water will be required, and after flowering a good rest can be given. When the plants are in vigorous growth a little liquid manure once or twice a week, but it must be well diluted before being used."

The woodcut has been kindly lent by Mr. B. S. Williams.

NOTES FROM MY GARDEN IN 1885.—No. 4.

AURICULAS.

YES, I will venture to say something about these, although I have no very startling experience to record nor any very great novelty either of sorts or of culture to make known; nor, happily, had I the same misfortune to announce as overtook me in 1884, when my plants got such a roasting. I am every now and then reminded of my loss by noticing the appearance of some plant which had been hardly hit, which had made a fight to recover its position, but at last had succumbed; and I may briefly say that, although my collection is not in extent what it was, that I have never had it more healthy or the plants more vigorous. And now with regard to management, I have not made any change in the respect which I may briefly recapitulate.

I am confirmed in the opinion that the practice of repotting in May or the early part of June is the most suitable time, for I do not think that the prevention of autumn blooming is attained by late potting. This autumn flowering is a puzzle: some sorts are more given to it than others, and in some seasons it is more prevalent. Where it does not occur so much, it is probably owing to situation more than to anything else. Where they can enjoy a cool breezy position and not be stimulated by too much sun it is less likely to occur; and I should imagine that it is more prevalent with us in the south of England than in the north or in Scotland, and certainly during very warm seasons there is a much greater tendency to this than in cooler years. That it is detrimental to the spring flowering of the plant there can be no doubt, and those who have been looking for some "crack" to give them a good flower at exhibition time are grievously disappointed to see it throwing up its autumn bloom. Where these varieties are grown by the score it does not so much matter, but the small grower who has only two or three to depend upon is proportionately disappointed.

The woolly aphid plague has not yet disappeared, but we can, I think, regard it with more equanimity than we used to do. When I had repotted my plants in 1885 I saw but very little of it, yet when I examined them a few months afterwards I found several plants on which they were flourishing. So long as it is confined to the roots it does not seem to do much harm, although it may do more than we imagine, but when it attacks the neck of the plants and punctures it about there, extracting their juices, it seems to me impossible that it is not injurious; and yet this was not the opinion held when it first appeared. Many well-known and experienced Auricula growers promised it to be a death-dealing plague, and probably if left unmolested it would, like its first cousin the American hight, be most destructive. But the Auricula is so frequently handled that they get disturbed and have not time to complete their work of destruction. Where they appeared round the neck of the plant they were of course rubbed off, and the pot was turned out on the hand to see if they were in any quantity, and if so, they were treated in the same manner and returned to the pots.

I am often asked about compost, and my opinion is that if you can get good fibrous loam it does not much matter about the rest. One part of decayed cow manure some leaf mould and charcoal to three parts of the loam, placing some of the rougher parts of the compost over the drainage and potting firmly, is about all that is required. The loam that I have used lately has been the top spit of rather light land which had been turned up for the making of our new railway, and although it has not the strength of some of our Kentish loam it seems to have answered very well, for not only Auriculas but other things for which I have used it. Supposing that the loam is sweet and has plenty of fibre, I think that we may be indifferent on the point of strength.

I did not last year top-dress my plants, as it was always considered necessary; indeed, it used to be one of the most important points in its culture. Where plants are wanting in vigour it may be done; but I have found that where they are healthy it is unnecessary, except where the soil may have receded from the plants, and the pots require filling up. It has been questioned whether the size of the blooms might not be affected by the neglect of this operation, but I have had as large and fine blooms without it as ever I had when I assiduously top-dressed. The last two years have been somewhat remarkable for the lateness at which Auriculas bloomed, not only in my own garden which, although so far south, is late,

so thoroughly an alpine flower as the Auricula, notwithstanding the change that has been made in it by the efforts of the florist.

With regard to new varieties I have but little to say. It suits one exhibitor to give 15s. or £1 for a new variety, but it does not suit me, and, therefore, I must be content to wait for them until the market comes down. I am perforce contented with such green edges as Booth's Freedom and Trail's Prince of Greens; with such grey edges as Geo. Lightbody and Lancashire Hero; with Read's Acme and Smiling Beauty amongst whites; with Pizarro, Blackbird, Charles Perry amongst selfs, and am content to admire the newer varieties when I see them with others, and after all it is,



Fig. 8.—*CALANTHE VESTITA WILLIAMSII*.

but generally through the country, affecting, as it did, exhibitors more or less. To myself this is a matter of comparative indifference, as I do not exhibit, at the same time the lateness did not affect the quality of the blooms. The winter of 1885 was a mild one, that of 1886 long, cold, and dreary, and yet I have not seen any difference in the quality of the blooms or the vigour of the plants; indeed I am not sure whether a severe winter is not better for them, provided they are kept free from frost. They do not get stimulated into bloom too early, and then have to endure perhaps a cold wave for some time which checks them. Those who employ heat are not, of course, subject to these vicissitudes, but I do not envy them. It may be necessary for the exigencies of exhibitors, but I hardly think there is a grower who, if he had to grow them simply for his own enjoyment, would make use of it. There can be little question that it tends to ruin both plants and flower stems, and cannot be good for

perhaps, questionable whether such kinds are really heated. As I am no judge my opinion goes for nothing, but some of my northern friends, who keep very rigidly to old rules, are very sceptical on the point; they consider there is a want of taste in the south for correctness, and a greater regard for showiness. It may be so, but still there are some of the new flowers which seem to be very good.

Writing of my Auriculas reminds me that we have just lost a great admirer and successful cultivator in the person of Mr. J. K. Penson Denham House, Ludlow. For a little while he appeared as an exhibitor, and was most successful, and the plants which he exhibited, sturdy and healthy, were the perfection of Auricula-growing; but the task of exhibiting did not suit him. It broke up for a time the symmetry of his collection at home, and the turmoil of the exhibition and other circumstances determined him not to venture upon it again. My acquaintance with

him was but slight, but it is one of which I retain a most pleasing memory. He was a true artist, and a most kind and gentle man, and in his charming old house and grounds at Ludlow delighted to surround himself with all that was lovely and loveable; no one who ever visited him there is likely to forget it.

The fine collection of Auriculas formed by the late Mr. Alexander Meiklejohn of Raplock by Stirling passed into the hands of his son, and thence into those of Mr. Young of Bridge of Allan. It was a most extensive and complete one, and one from which some of those in my collection came, and very probably many of them will find their way south. The last two seasons have not been favourable for the exhibition of these flowers, but they who, like myself, grow for home gratification have not had much to complain of.—D., Deal.

HORTICULTURAL SHOWS.

LEE, BLACKHEATH, AND LEWISHAM.

THIS old-established Society held their annual Exhibition of fruit, flowers, and vegetables on July 7th and 8th, in the beautiful and very appropriate grounds of The Cedars, Lee, kindly lent for the occasion by Mrs. Penn. The primary conditions so essential to the success of societies of this kind were certainly not wanting this year, as in addition to an attractive site for the Show there were excellent exhibits, charming weather, and an abundance of visitors. Everything, therefore, augurs well for the future prospects of the Society.

The schedule contains a greater number of classes than those of previous years, and though in a few instances the respective entries were not so numerous as might have been expected, the deficiency was fully made up in the cultural excellence of the exhibits.

The Secretary, Mr. C. Helmer, Treasurer, F. H. Hart, Esq., and Acting Vice-President, F. J. Turner, Esq., strove to their utmost to render the Show a success, and their services were unanimously and fully appreciated by the visitors who thronged the tents and grounds on both of the days.

PLANTS.—The first division of the schedule is devoted to classes open to gentlemen's gardeners and members only. The various classes were on the whole fairly well represented, and the exhibits of high quality. Mr. Reece, gardener to R. Whyte, Esq., Pentland House, Lee, secured the premier prize again this year for six stove and greenhouse plants in flower with admirably grown and flowered examples of *Dipladenia profusa*, *Dracophyllum gracile*, *Ixora Williamsi*, *Dipladenia boliviensis*, *Allamanda Hendersoni*, &c.; and Mr. Hudd, gardener to F. W. Prior, Esq., Gordon House, Blackheath, second. For six plants of ornamental foliage, Mr. S. Reece again carried off the first prize with splendid specimens of *Croton Disraeli* and *Warreni*, *Phyllotænium Lindenii*, &c.; and Mr. Hudd second. There were only two entries in the foregoing classes. In the class for six exotic Ferns, Mr. Luff, gardener to J. Hyatt, Esq., Streatham, was awarded a first for beautifully grown plants; Mr. Reece second, and Mr. Hudd third. For four *Lycopodiums* Mr. J. Rhoden first, J. Hudd second, and J. Lambert third. *Caladiums* were not shown in such strong force this year, there being but two entries in the class for six. The first prize was awarded to Mr. H. Martin, gardener to A. English, Esq.; and the second to Mr. J. Clark, gardener to — Woolfann, Esq., Manor House. In the class for a specimen plant (stove or greenhouse) in flower, Mr. S. Reece first with a well-bloomed plant of *Dipladenia amabilis*, Mr. J. Hudd second with *Allamanda Hendersoni*, Mr. J. Rhoden third, and Mr. Barker fourth. For the best specimen plant out of flower, Messrs. S. Reece, T. Lambert, and — Balcombe were the respective winners.

In the class for six Cape Heaths there was only one competitor, Mr. S. Reece, and the Judges unanimously awarded him a first for his well-grown and flowered specimens. The first for six *Fuchsias* went to Mr. A. Luff for really handsome plants, J. Hudd being second, W. Jeffery third, and J. R. Smith fourth; and for the best standard, J. Hudd first, J. R. Smith second, and E. Smith third. Some admirable examples of *Gloxinias* were shown in the class for six, two exhibitors, Mr. Sholdice and Miss Hookey, being placed equal firsts, and Mr. Rhoden third. *Dracænas* were well shown, the principal winners being Messrs. Luff, Reece, and Jeffery respectively. In the *Pelargonium* classes there was a brisk competition, the following being the leading prizewinners—Messrs. S. Reece, H. Martin, C. Nunn, and J. Lambert. Special prizes were offered for groups of plants, Mr. A. Luff, gardener to J. Hyatt, Esq., Streatham, being placed first for the best group of plants arranged for decorative effect—an exceedingly light and pleasing arrangement—Mr. G. Barker coming in second with a more novel but less tastefully arranged group, and Mr. G. Spong third. For a smaller group, arranged for effect, Mr. Balcombe, gardener to J. S. Rivolta, Esq., won the only prize offered, a handsome copy of the Revised Edition of the Bible, offered by a lady. Special prizes were offered by Messrs. Laing & Co. for Tuberous *Begonias*, the winners being Messrs. Garland, Sergott, and Hooker respectively; also by others for collections of miscellaneous plants—first, Mr. Reece; second, Mr. Hudd; and for twelve plants in flower the winners were Messrs. Jeffery, Rhoden, and Martin.

In the division for gardeners and amateurs the classes are smaller and more numerous than in the first division. For four stove and greenhouse plants in flower, first, Mr. W. Jeffery, gardener to J. Young, Esq., and Mr. A. Luff second; and for four ornamental foliage, Mr. Lambert, first; W. Jeffery, second; and C. Nunn, third—some remarkably good specimens. In the class for four Orchids Mr. Noakes, gardener to Dr. Duke, The Glen, Lewisham, was first with a fine example of *Cattleya Mossiæ*, *Lælia purpurata*, *Anguloa Clowesi*, and *Odontoglossum Alexandræ* variety; Mr. A. Luff coming in second with a fine plant of *Oncidium macranthum* of a superior type, the remaining plants being not quite up to such good form; and Mr. G. Barker, gardener to J. G. L. Hemmerde, Esq., third. Mr. Noakes was again in the front rank for the best single specimen Orchid, a well and richly flowered *Oncidium crispum*; Mr. A. Luff second with *Aerides Lobbi*; and Mr. Barker third. For four *Caladiums*, Mr. Balcombe was first, R. Jeffery second, and J. Smith, third; for four exotic Ferns, Mr. Reece first, Rhoden second, and Jeffery third; for six *Palmæ*, Mr. Reece first and J. Hudd second. In the remaining classes for Zonal *Pelargoniums*, *Petunias*, *Gloxinias*, *Begonias*, &c., the principal prizewinners

were Messrs. P. Wright, R. Sholdice, J. Balcombe, C. Nunn, G. Barker, J. Lambert, C. Davis, Stockwell, Rhoden, &c.

Groups of choice plants were contributed, not for competition, by Messrs. J. Laing & Co., Mr. H. J. Jones, part of whose group consisted of that effective Zonal Queen of the Belgians, and an interesting group of choice Orchids by Dr. Duke.

CUT FLOWERS.—Roses were not shown in such numbers as in previous years, probably owing to many exhibitions coming on at or about the same date. There were two entries in the class for forty-eight single blooms, the first going to Messrs. Bunyard & Co., Maidstone, for a really splendid box of blooms. Mr. A. Luff was second, whose blooms, with a few exceptions, were nearly equal in form and colour to the first. Messrs. E. Bunyard and Co. came in first, too, in the twenty-fours; and Mr. A. Harris second. Messrs. A. Harris, P. Spurling, and G. Barber were the winners in the twelves and the sixes respectively. The winners for the stands of cut flowers were Messrs. J. Lambert and C. Nunn, and for hand bouquets C. Nunn and R. Fullerton.

FRUIT AND VEGETABLES.—Grapes were shown in better form this year, the bunches being not only larger but the berries well coloured. For three bunches of black, Mr. Howe first, Mr. Holden second, and Jeffery third. For three bunches of white, J. Hudd first, Mr. Howe second, and Jeffery third. Mr. Howe secured first for one bunch of black, and Mr. Holden second. For a scarlet-flesh Melon, Mr. Howe first, and Mr. Holden second. For six dishes of fruit, Mr. Jeffery first, Hudd second, and Luff third. In the classes for Peaches, Strawberries, and Apples, the winners were Messrs. Holden, Garland, and Balcombe. A silver medal, showing him to have been the chief winner for that year, again fell into the hands of Mr. S. Reece, he having won it for four consecutive years.

WIMBLEDON.

THE annual Exhibition of this excellent suburban Society is held in the grounds of some gentleman's residence which are kindly granted for the occasion. This year the Committee was indebted to A. Schlusser, Esq., and the Show was held on his estate, Belvidere, of which Mr. Lyne is the able manager, and who contributed materially to the attractiveness of the display by his exhibits of healthy plants not for competition. The Exhibition was not quite so large as on some former occasions, the heat and draught having a tendency to restrict competition, yet very much highly creditable produce was staged in all divisions—plants, flowers, fruit, and vegetables.

The most successful of exhibitors of stove and greenhouse plants were Mr. A. Methven, Fernwood, Wimbledon; Mr. J. Bentley, gardener to Sir J. Gabriel, Bart.; Mr. H. Alderman, gardener to G. Hatfield, Esq., Morden Hall; and of groups Messrs. Smith (gardener to J. Schwanu, Esq.), Northover, Ware, and Bentley. Messrs. D. S. Thompson & Son, Wimbledon; Laing & Co., Forest Hill; and Veitch & Sons, Chelsea, also sent valuable collections not for competition.

Tuberous *Begonias* were a bright feature of the plant tent, wonderfully well grown examples being staged by Mr. Newell, gardener to Sir E. Saunders, Parkside, Bentley, and Casswell, who were worthily awarded the chief prizes. The plants were not large, about 18 inches in diameter, but their vigour and the high quality of the flowers were very noteworthy. Mr. H. Alderman staged the best Ferns, and Messrs. Smith and Bentley shared the honours for table plants, that are always good at the Society's shows.

The cut flower tent was a great source of attraction. Messrs. Cbeal and Son, Crawley, Sussex, were the premier exhibitors of Roses, securing the chief prizes with very fresh blooms admirably arranged. Mr. Gibson, gardener to J. Wormald, Esq., Morden Park, was second in the twenty-four class, his stand including a magnificent *Maréchal Niel*; Mr. Northover being a close second with twelve Roses with a very creditable stand. Mr. Northover was first in the any variety class with fresh blooms of *Marquise de Castellane*, Mr. J. W. Wright being second with *Marie Banmann*. A special class appears to be provided for the "best Rose," and the prize was awarded to Mr. Calloway for *La France*, but it was not nearly so good as the *Maréchal Niel* above referred to. Stands of *Gloxinia* flowers with Ferns were admirably represented by Messrs. Newell, H. Alderman, and McFarlan, who were adjudged the prizes in the order named. The Hon. Mrs. Peek's prize for hardy border flowers was won by Mr. Curtis, and splendid collections were exhibited by Messrs. D. S. Thomson and Cheal and Son that were accorded special marks of approval by the Judges.

Mr. Gibson was adjudged the first prize for an excellent collection of six dishes of fruit. For Grapes the prizes went to Messrs. Casswell, and Gibson, and Bentley.

Vegetables were plentiful and good, Mr. Smith securing the first prize with good dishes of Cauliflowers, Best, Vegetable Marrows, Artichokes, Broad Beans, Cucumbers, Peas, Onions, Kidney Beans, and Tomatoes, followed by Messrs. A. Alderman and Gibson, Mr. Newell being awarded the first prize for salads. The Show was held on the 7th inst., and Mr. H. A. Rolt is the indefatigable Secretary of the Society.

THE EALING, ACTON, AND HANWELL HORTICULTURAL SOCIETY

THE twenty-second annual Exhibition of this Society was held on the 7th inst. in the grounds of Hanger Hill House, the seat of E. M. Nelson, Esq., J.P., five spacious tents being filled, and the general arrangements excellent.

Messrs. Charles Lee & Son contributed, not for competition, a group quite 60 feet in length by 6 feet in width, made up of choice and rare hardy trees and shrubs, standard and other Ivies, a fine lot of *Hydrangea paniculata grandiflora*, Palms, a beautiful lot of Roses in pots, a group of *Statice floribunda*, Yuccas, *Arancaria Cookii*, and other trees and plants for which this firm is so famous. Mr. Roberts, of the Gunnersbury gardens, sent, not for competition, a handsome group of plants, consisting of Orchids, Palms, beautiful small *Ixoras*, and other plants—a tastefully set-up group. Mr. Roberts also contributed a basket of handsome *Gloxinias*. Mr. Hudson, gardener to H. J. Atkinson, Esq., M.P., Gunnersbury House, set up an artistically arranged group, bright in colour, in which were fine *Crotons*, *Dracænas*, *Pandanuses*, Palms, and other plants. Messrs. Fromow & Sons also contributed, not for competition, a charming group of plants well set up, which was deservedly admired. The centre of the principal large-plant tent was occupied by a very large group of plants, contributed by Mr

Chadwick, gardener to E. M. Nelson, Esq., not for competition. These consisted chiefly of specimen plants, such as *Alocasia Lowii*, *Statice profusa*, *Erythrina crista-galli*, *Asparagus plumosus*, *Vinea alba*, *Sobralia macrantha*, and many others, in which good culture was general throughout. If many of these plants had been exhibited in the classes they would have taken high honours. Two classes of groups arranged for effect were well filled. In the class for the larger groups, five exhibitors entered and took the prizes in the following order:—E. M. Nelson, Esq. (Mr. Chadwick, gardener), Mr. A. Wood, Cbiswick; H. J. Atkinson, Esq., M.P., Thomas Nye, Esq. (Mr. Smith, gardener), Miss Wood. All these groups reflected considerable credit on the exhibitors. In the class for smaller groups the five prizes offered were awarded in the following order—Mr. Williams, Ealing; C. A. Daw, Esq., Ealing; W. J. Amberst, Esq.; Mr. George Weedon, Ealing; W. Williams, Esq., Ealing. Some excellent Ferns were staged both in the classes for six and four. Miss Wood was placed first; Thomas Nye, Esq., second; and Mr. A. Wright third for six plants, and for four Ferns, H. G. Lake, Esq., was first, and G. P. Greenfield, Esq., second. For six stove and greenhouse plants, H. G. Lake, Esq., Farlawn House, was first with a capital lot, especially his *Clerodendron Thompsonii* and *Allamanda grandiflora*. Mr. A. Wright, The Gardens, Doverhurst, Chiswick, was first for four plants, an excellent quartette, consisting of a fine *Rhynchospermum*, *Plumbago capensis*, admirably done; *Clerodendron Balfourianum*, and a fine *Stephanotis*. Ornamental plants are always good at Ealing, and in the class for six H. G. Lake, Esq., was first, and H. Nye, Esq., second. For four, first C. A. Daw, Esq., Ealing; second, H. G. Lake, Esq. Four good lots of well-grown *Coleuses* were set up, and a few good *Fuchsias*; the first prize lot of six from Thomas Nye, Esq., being well grown in small pots, and the plants even in size, and from 5 to 6 feet in height; second, G. P. Greenfield, Esq. Six Mosses, grown as pyramids, which took the first prize, exhibited by Mr. A. Wright, Chiswick, were much admired, clean, healthy, and well done, and good varieties.

Roses were plentiful, and in many respects fine. Messrs. James Veitch and Sons staged six boxes of grand blooms not for competition, and Messrs. Charles Lee & Son also staged a large collection of very fine blooms. In the class for twenty-four trebles, Mr. Charles Turner took the first prize with very fine blooms, and Mr. William Rumsey second. In Teas, Mr. Charles Turner was first, and Joseph Moon, Esq., Ealing, second. For twelve Roses, first prize, the gold medal of the National Rose Society, Mr. W. Langdon, Ealing. The other classes were also well filled. In the class for twelve cut blooms of stove and greenhouse plants, G. Tanlez, Esq., took the first prize for a stand which included ten Orchids. Some excellent bouquets and epergnes were staged. Mrs. H. B. Smith, florist, Ealing, sent two very handsome bouquets, one of Carnations, the other of Orchids and *Lilium lancifolium roseum*, also handsome sprays, to all of which certificates were awarded. In the class for one bouquet, Mr. A. J. Morris, florist, Acton, took the first prize with an excellent arrangement of Roses, *Stephanotis*, Tuberoses, and blush Carnations, and second prize for two bouquets of Roses, Mr. J. Weedon being placed first. Leopold de Rothschild, Esq., gave prizes for a stand or vase of wild flowers and grasses, which brought out a pretty display, Miss Slade, Ealing, taking the first prize with an exquisitely arranged epergne. Miss S. Hogg, Ealing, took the first prize in another class for a nicely arranged epergne of yellow *Marguerites*, blue *Cornflowers*, Grasses, and Ferns. The class for the stands of flowers brought out a spirited competition, Mrs. Hudson, the Gardens, Gunnersbury House, taking the first prize; Mr. Chadwick, The Gardens, Hanger Hill, second; and Miss Jessie Dean third. Light and tasteful arrangements prevailed throughout.

In the fruit classes, Mr. Wilkinson, Ealing, was first in white Grapes with Muscats; and W. Tindell, Esq., Drayton Green, first in two classes for black Grapes. Mr. Lockie exhibited two seedling Melons, one a green flesh of much excellence, the other a scarlet flesh named *Beauty of Windsor*, of so much excellence that a certificate was awarded to it. Other fruits were exhibited, and there was also a good display of vegetables in the open and amateur classes.

The cottagers and single-handed gardeners of the district exhibited in great force, and excellent quality appeared in so many instances. The cottagers of the district deserve very high praise for their productions. The display of wild flowers, as well as other flowers, covered a very long space of tabling, and somewhere about 100 prizes were awarded. It was a very interesting exhibit, and to a large number one of the greatest attractions of the Exhibition.

The experience of Mr. Richard Dean, the Honorary Secretary, and the energy he throws into the Society's exhibitions, have made the annual meetings what they are, and he has an able assistant in Mr. George Cannon of Messrs. Lee & Son's nurseries.

WINCHESTER.—JULY 13TH AND 14TH.

THOUGH this was not the largest Show that has been held in the ancient city it was yet a very good one, there being competition in most of the classes. Roses were particularly good; in fact, they formed the chief feature of the Show.

PLANTS.—Mr. Budd, gardener to F. G. Dalgety, Esq., Lockerly Hall, Roms y, outdistanced all competitors in the class for twelve stove and greenhouse plants. A very fine plant of *Clethra arborea* was conspicuous, and all the specimens were good. Mr. James, Lower Norwood, was second, and Mr. Hillier, Winchester, third. Mr. Budd was distinctly first in the class for six stove and greenhouse plants, also with creditable examples. Five excellent groups were arranged for effect, the first prize in the large section being won by Mr. James with a neat, clean, well finished arrangement of Orchids, Ferns, and Palms edged with *Cyrtodeiras*, *Caladium argyrites*, and *Isolepis*. F. W. Flight, Esq., Twyford, was an excellent second, the *Liliums* being beautiful, but the whole mass a little pocked, and the *Panicum* edge rather rough; Mr. Hillier third. In the smaller group class Mr. Ashford, gardener to C. M. Shipley, Esq., Twyford Moors, was worthily awarded the first prize with *Liliums*, Palms, Ferns chiefly, well arranged. Mr. Lowms, gardener to F. C. Birch, Esq., Clovelly, Winchester, second; and Mr. Astridge, gardener to W. Barrow-Simonds, Esq., Abbot's Barton, Winchester, third. Mr. Flight staged a first-class group of Zonal Pelargoniums, and secured the first prize, Mr. Hillier being second with neat plants.

The best six Tubercous Begonias were exhibited by Mr. Munt, gardener

to Mrs. C. Warner, Northlands, and very good they were. The second and third prizes fell to Mr. Wareham, gardener to T. Coke Burwell, Esq., and Mr. Lowms. A bright and good class.

Ferns were largely exhibited, Mr. Neville, gardener to F. W. Flight, Esq., winning the chief prize for six plants. The second prize card was missing. Third Mr. Budd, who was also first with a single specimen and for a fine-foliaged plant, *Croton Weismannii*. Mr. Lowms second with a splendid example of *Maranta zebrina*, Mr. Astridge having the first prize for a specimen plant in bloom with *Eurya latifolia variegata* covered with small Snowdrop-like flowers.

ROSES.—The display of these was excellent, splendid blooms being staged throughout the classes. Mr. Charles Turner, Slough, was placed first in the class for forty-eight with wonderfully fine blooms, Mr. Frank Cant, Colchester, a close second, and Messrs. Cooling & Sons, Bath, third. Mr. Turner was also in the premier position with thirty-six blooms, Messrs. Cooling & Sons second, and Keynes, Williams & Co., Salisbury, third. Mr. Turner was again first with twenty-four triplets, Messrs. Keynes, Williams & Co. second, and Messrs. Cooling third.

It is only due to Mr. F. Cant to say that if he had not inadvertently staged too many blooms he would have won in this class, his flowers being very superior; but others were good throughout the class. He was first with twelve Teas (triplets) with beautiful blooms, Mr. Turner a close second. Mr. Turner was first once more, this time with twelve charming Teas; Mr. F. Cant second, also with fine flowers, but less fresh; this exhibitor also winning with a box of *Maréchal Niel* as the best Tea or Noisette in the Show, and fine they were. The best light Hybrid Perpetual staged was *Merveille de Lyon*, twelve magnificent blooms, for which Mr. F. Cant secured the first prize. Alfred Colomb was the best dark, staged by Messrs. Keynes, Williams & Co., Mr. Cant's A. K. Williams closely following.

In the amateurs' classes for twelve Teas Mr. Flight was in the foremost position with firm fresh blooms, very good indeed, followed by Captain Ramsay. Mr. Flight was also decidedly ahead in the class for twenty-four Roses, distinct, with excellent blooms excellently staged. Captain Ramsay was again second; but first in the class for twelve, with capital blooms. Mrs. Bessie Flight was first with a decorated summer table; Mrs. Flight for a stand, also for a basket of flowers, all very charmingly arranged.

FRUIT AND VEGETABLES.—Mr. Budd was first with a collection of six dishes of fruit, good black and white Grapes, Pine, Figs, Melon, and Nectarines. Mr. Mildon, gardener to Mrs. Turner, Kingsworthy House, second; he was first for black and white Grapes, Mr. Budd second. Mr. Axford won the first prize with a collection of vegetables with excellent produce; Mr. Budd a very close second; and Mr. Ashton, gardener to the Dean of Winchester third. The day was fine, and the Show highly enjoyable.

A PATENT BEDDING AND POTTING BARROW.

IN the extensive display of garden implements at Liverpool recently Dr. Horace Swete of Worcester had a novel barrow that is likely to

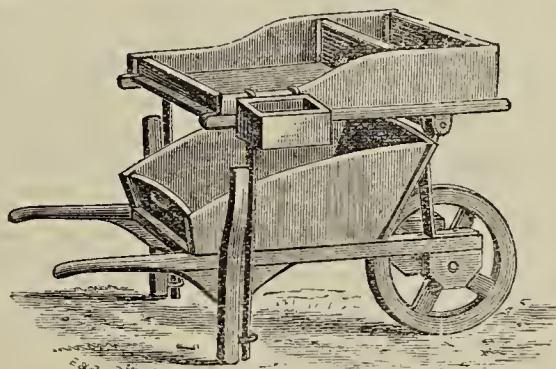


Fig. 9.

be useful to amateurs. It can be employed as an ordinary barrow, but is especially contrived to facilitate the conveyance of plants or to act as a substitute for a potting bench. "If," says Dr. Swete, "plants in pots are wheeled in an ordinary barrow from the greenhouse to the beds they are much injured by jostling against one another in the inclined plane of the barrow: a great deal of time and labour is therefore wasted in carrying them by hand, or extra wages incurred to employ another man to carry them in a hand-barrow. By the addition of the tray to the "handy barrow" a large number of pots may be safely carried at a level, forty-eight 3-inch or twelve 10-inch pots being conveyed at the same journey. It is constructed so as to pass through a 2 feet 9 inch doorway. As a portable potting bench it is even more useful, being always ready for an odd half-hour's work. The compost is placed in the bed of the barrow, the division placed in the tray, and the small box for potting crocks hung by the iron clips over the right side of the barrow. This potting bench can then be wheeled to the place where the plants require to be potted, causing a great saving of both time and labour."

The illustration conveys a good idea of the general form of the barrow, which is strongly constructed of elm, painted green, and as well adapted for heavy as light work.

SUMMER TREATMENT OF DECORATIVE CHRYSANTHEMUMS.—Visiting a gardening friend the other day, who has been reading the

Journal and following Mr. Molyneux's excellent directions in the treatment of a fine collection of Chrysanthemums, he pointed out how he had removed all the young shoots and incipient buds at the axils of the leaves, with the exception of two or three at the top. As my friend, like myself, grows merely for decorative and not for show purposes, I ventured to say to him that I suspected he had misread the directions referred to, especially as quantity is of more importance than size or quality of the blooms. As there are possibly others doing the same, Mr. Molyneux may allude to the point later on.—W. J. MURPHY.

ROYAL HORTICULTURAL SOCIETY.

JULY 13TH.

A most satisfactory Show was held at South Kensington on Tuesday last the best general representative display of this year's series. Fruit and vegetables were admirably shown both as regards numbers and quality; a beautifully varied floral exhibition was formed by the large collections of hardy flowers and the superb Roses from Waltham Cross, the exhibits before the Floral Committee being also more than usually interesting.

THE FRUIT AND VEGETABLE SHOW.

For evenness of merit the fruit shown was the best we have seen this season, and the same might be said of the vegetables. Everything seemed so fresh and clean, the competition being exceptionally keen in several classes.

Grapes.—Three classes were devoted to Grapes, in which there were seventeen entries, the principal competition being with three bunches of Black Hamburg, of which eight lots were shown, but differing considerably in quality. The premier position was gained by Sir A. K. MacDonald, Bart., Woolmers, Lipbook, Hants (gardener, Mr. J. Tavenor), whose bunches and berries were of good size and fine colour. The Earl of Harrington, Elvaston Castle, Derby (gardener, Mr. Goodacre), followed also with handsome bunches and large berries, but not quite so well coloured; Mr. J. Neighbour, Bickley Park, Kent, being third with smaller examples. For two bunches of any other black variety there were six competitors, Mr. Goodacre taking the lead this time with a pair of magnificent Muscat Hamburg, handsome, well-coloured bunches that are rarely seen equalled at exhibitions. Mr. G. T. Miles, Wycombe Abbey Gardens, Bucks, was second with Gros Maroc, compact bunches of good berries, not quite fully coloured; and L. J. Baker, Esq., Ottershaw Park, Chertsey (gardener, Mr. T. Osman), was third with Alicante, good bunches, and with moderate bloom. Alicante and Black Prince were shown by other exhibitors, but the latter was poor. Only three pairs of Muscat of Alexandria were staged, and none of these was fully ripe. Sir Philip F. Rose, Bart., Rayners Penn, Bucks (gardener, Mr. Cakebread), had the best, of medium size; followed by W. H. Sewell, Esq., Warren Hill, Loughton, Essex (gardener, Mr. A. Smith), and C. A. Hoare, Esq., Kelsey Manor, Beckenham (gardener, Mr. C. J. Goldsmith), both having very green bunches.

Strawberries.—With two varieties of Strawberries ten exhibitors entered, and although the season has not been a favourable one, the fruits shown were very good, especially the samples of Dr. Hogg and British Queen, with which the first prize was won by C. B. Bingley, Esq., Stanhope Park, Greenford (gardener, Mr. Garlandvay), which were very beautiful fruits, and these finely flavoured varieties are seldom so well represented. The second place was accorded to H. A. Brassey, Esq., Preston Hall, Aylesford (gardener, Mr. Waterman), who had James Veitch and British Queen, the former particularly good; W. R. Winch, Esq., North Mymms Park, Hatfield (gardener, Mr. J. T. Seymour), securing the third prize for Eclipse and President. There were fourteen exhibitors of one variety, Messrs. Rothschild, Gunnersbury Park, Acton (gardener, Mr. J. Roberts), leading with British Queen in first-rate condition. Mr. J. Neighbour was second with the same variety, and Mr. Seymour third with President, other exhibitors staging James Veitch, Dr. Hogg, President, Sir J. Paxton, and Auguste Nicaise.

Figs.—Eight dishes of large and well-ripened Figs were contributed, Mr. J. Tavenor gaining first honours, H. Tate, Esq., Park Hill, Streatham (gardener, Mr. Wm. Howe), the second, and the Rev. Walter Sneyd, Keele Hall, Newcastle, Staffs (gardener, Mr. J. Wallis) the third, all showing Brown Turkey, which has so long held its position as a standard variety.

Peaches.—Amongst the fourteen dishes of six Peaches there were some fruits of wonderful size, and the finest both as regards size and colour were the Grosse Mignonne from Mr. Seymour, which were very handsome, well deserving the first prize. Mr. J. Wallis, who was second, also had good-sized well-coloured fruits of Galande, and Mr. Cakebread had the same variety as the first, of capital size but less highly coloured.

Nectarines.—Mr. J. Roberts scored a great success in the class for six Nectarines of one variety, worthily gaining the premier award for magnificent fruits of Lord Napier, which attracted much attention from fruit-growers. They were large and superbly coloured, a very deep and rich tint giving them a most handsome appearance as table fruits. Mr. W. Robins was second with smaller and paler samples of the same variety, and Mr. Seymour was third with Pine Apple, the other varieties shown being Elruge, Violette Hative, and Pitmaston Orange.

Pine Apples.—With two Pines Mr. G. T. Miles was first amongst six competitors, showing beautiful well-proportioned Queens, 5 lbs. 2 ozs. and 4 lbs. 14 ozs. respectively. Mr. R. Dawes, Temple Newsome, Leeds, showing the same variety 4 lbs. 8 ozs. and 4 lbs. 4 ozs. for the second prize, and A. P. Viviana, Esq., Glanafon Gardens, Taibach (gardener, Mr. Morris), was third, also with a pair of Queens. In the class for one fruit of any variety, Queens were shown by the three exhibitors, Mr. G. T. Miles being first with a fruit weighing 5 lbs. 2 ozs., Mr. Dawes second with one weighing 5 lbs., and H. J. Atkinson, Esq., M.P., Gunnersbury House, Acton (gardener, Mr. Hudson), was third.

Cherries.—The competition was close in this class for two dishes of Cherries, distinct varieties; the majority of the ten exhibitors having good fruits. Mr. Hudson won the first prize with Bigarreau Napoleon and Black Tartarian, both very fine. Mr. J. Roberts followed with the same varieties; Mr. J. Read, Moat Mount Gardens, Mill Hill, taking the third place.

Melons.—The task of tasting fifteen pairs of Melons was a formidable one for the Judges, but they performed their duties manfully, though they seemed to find it rather difficult to satisfy themselves. Ultimately the first prize was awarded to J. Southgate, Esq., Selborne, Streatham, for two handsome fruits of Blenheim Orange finely netted. Mr. E. Gilman, Ingestre Hall Gardens, Stafford, was second with Hero of Lockinge; and the Earl of Radnor, Longford Castle, Salisbury (gardener, Mr. H. W. Ward), was third, showing Sutton's Improved Green-flesh, which possessed an excellent flavour.

VEGETABLES.—A class was provided for a collection of vegetables, eight kinds, and a display of well grown produce was supplied by ten exhibitors that was most creditable to all. The chief struggle was between Mr. G. H. Richards, gardener to the Earl of Normanton, Somerley, Ringwood, Hants, and the veteran Mr. G. T. Miles for the first prize, but the former gained the victory by several points, thus repeating a success he gained on a previous occasion. Mr. Richards' collection comprised admirable clean and even samples of Perfection Tomatoes, Early London Cauliflowers (of medium size), Snowdrop Kidney Potatoes, Green Globe Artichokes, late Argenteuil Asparagus, Telegraph Peas, Daniel's White Elephant Onions, and Veitch's Matchless Scarlet Carrots. Mr. G. T. Miles lost points in his Snowdrop Potatoes, Stamfordian Tomatoes, Pearl Cauliflowers, which were rather too large: the others, White Elephant Onions, Moore's Cream Marrows, Telephone Peas, Green Globe Artichokes, and Sutton's New Intermediate Carrots were about equal. The third prize was accorded to Col. the Hon. W. P. Talbot, Glenhurst, Esher (gardener, Mr. C. J. Waite), who showed Canadian Wonder Beans, Waite's Seedling Tomatoes, a beautiful even and well coloured variety; White Elephant Onions, Pen-y-Byd Marrows, New Intermediate Carrots, and Snowdrop Potatoes. It was rather curious that the same varieties of Onions and Potatoes were shown by these three exhibitors.

Nine dishes of fine Tomatoes were staged, Mr. R. Farrance, Chadwell Heath, leading with Selected Trophy, excellent. J. Freeman, Esq., Forest Lodge, Farnborough (gardener, Mr. C. Jennings) was second for Stamfordian; and Mr. C. Ross, Welford Park Gardens, Newbury, third with Hackwood Park Prolific. Cucumbers were not largely shown, the prizes being secured by Viscount Barrington, Beckett Park, Sbrivenham (gardener, Mr. Meads), with Purley Park; Mr. R. Phillips, Meopham, with Carter's Model, and Col. Wingfield, Oaslow, Sbrewsbury (gardener, Mr. Lambert), with Telegraph in the order named.

Special Prizes for Peas.—Messrs. J. Carter & Co., High Holborn, offered four prizes for fifty pods each of Telephone, Stratagem, Pride of the Market, and Telegraph, which brought ten competitors, the majority contributing very fine pods well filled. The prizes went in the following order—First, Mr. H. Marriott, Skirbeck, Boston, Lincolnshire; second, Mr. Marriott, jun.; third, Mr. Phillips; and fourth, Mr. H. W. Ward. Messrs. Webb & Sons, Wordsley, offered prizes for dishes of Wordsley Wonder, which were awarded to Mr. H. Marriott and Mr. H. W. Ward for capital specimens, there being seven entries. Mr. J. House, Peterborough, also provided prizes for dishes of his Perfect Marrow Pea, which were awarded to Mr. H. Marriott, Mr. J. Cook, and Mr. H. Marriott, jun., amongst six competitors. Mr. Marriott was very successful, and his Peas were, as usual, extremely fine, outdistancing most of the others.

HARDY FLOWERS.—Two magnificent collections of hardy flowers were entered in competition for the prizes provided for the Society, and beautiful as these groups frequently are at Kensington, the two in question have not been equalled this year in variety of attractions and tastefulness of arrangement. Mr. T. S. Ware, Hale Farm Nurseries, Tottenham, was awarded premier honours for a charming collection in which Lilies predominated, such forms as the buff-coloured *L. testaceum*, the pure white *L. candidum*, the orange-tinted *L. croceum*, and the scarlet-spotted *L. pardalium californicum* forming imposing clumps, the last named being remarkably handsome. Around these were grouped the pretty yellow *Papaver nudicaule*, its white variety album, and the brilliant orange miniatum, *Polemonium Richardsoni*, the scarlet *Delphinium nudicaule*, several varieties of the early *Gladiolus*, the white variety of *Malva moschata*, and innumerable other choice and pretty flowers. Messrs. Paul & Son, Cheshunt, were second with an extensive group admirably arranged and very few points behind the first. Some of the most noteworthy plants represented were *Geum coccineum* and its varieties, *Cephalaria alpina*, numerous *Lychnis*, *Lathyrus latifolius roseus*, very large and richly coloured; *Achillea*, especially *millefolia rosea*, *Centaurea*, *C. macrocephala*, with huge globular yellow heads, very striking; *Delphinium*, the bright yellow *Bupthalamum salicifolium*, Lilies of several species, *Spiraea palmata*, *Campanulas*, *Lythrum*, and numerous others similarly showy.

MISCELLANEOUS.—Prominent amongst the non-competing exhibits was the grand collection of Rose blooms from Messrs. W. Paul & Son, Waltham Cross, for which a silver-gilt Banksian medal was awarded. The recent rain seems to have suited the Roses exactly, and Messrs. Paul's were remarkable for their fresh clean appearance, their bright colours, and good substance. All the leading varieties were represented, as well as several new varieties, one of which, the dark scarlet seedling from A. K. Williams, Grand Mogl, was certificated. But perhaps the most interesting portion of the exhibit were the boxes of blooms of varieties raised at Waltham Cross. No less than twenty-nine of these were shown, and most of these possessed some notable quality. Some of the best were Lady of the Lake, Lord Macaulay, Charles Dickens, Queen of Queens, Waltham Climber, Nos. 1, 2 and 3, Garden Favourite (a free-flowering soft pink Rose), Florence Paul, Little Gem (Moss), Duchess of Bedford, Inigo Jones, Crown Prince, Masterpiece, Countess of Rosebery, Elizabeth Vigneron, Star of Waltham, Empress, Ella Gordon, Black Prince, and May Quennell. Altogether there were twenty boxes and twenty baskets of Roses, some lovely examples of the principal Tea and H.P. varieties being included, the exhibit being in every respect most creditable to the Waltham Cross Nursery.

A silver Banksian medal was accorded to R. J. Measures, Esq., Cambridge Lodge, Flodden Road, Camberwell New Road (gardener, Mr. H. Simpkins), for a choice and tasteful group of Orchids and Ferns. Numerous *Cattleyas*, *Phalaenopses*, *Odontoglossums*, *Oncidium Jonesianum*, and other species with the bright *Sophranitis grandiflora* were shown, and the recognition afforded was well merited. A similar award was granted to Messrs. Paul & Son, Cheshunt, for ten boxes of handsome Roses comprising

some hundreds of blooms, a large proportion of which were fully up to the exhibition standard, and would have taken high positions in competition. A bronze medal was adjudged to Messrs. Kelway & Son, Langport, for groups of hardy flowers, principally Phloxes, Alströmérias, Gaillardias, and Asphodelus albus. A bronze medal was also awarded to Messrs. J. Carter and Co., High Holborn, for a collection of ninety dishes of Peas, mostly distinct varieties, the Cabbage Lettuce, Garden Gem, and flowers of their strain of Sweet Peas.

A new seedling white Grape named Mrs. Eyre was shown by Mr. C. Ross, and commended. It is said to have been raised from Black Monukka, which was probably fertilised with pollen from Buckland Sweetwater and the Vine from which the bunches were cut is worked on a Muscat of Alexandria, the original plant having been destroyed. Mr. Ross describes it as a free-setting variety, of fair flavour, with a thick skin, and the berries somewhat resemble the parent in the shape of the berries, but are larger. Those shown were too unripe to permit a judgment being formed of its merits. Fruits of Apples Alfriston and Sturmer Pippin, and Catillac Pears were staged, but were, of course, very much shrivelled. Mr. A. Newell, Fairlawn, Wimbledon, exhibited a finely netted Victory of Bath Melon; Mr. W. Robins, Aylesbury, had a number of handsome Lord Napier Nectarines (commended) and Buckland Sweetwater Grapes, of good quality; and Mr. T. Bunyard, Ashford, a box of fine Rose blooms (commended).

COMMITTEES.

FRUIT COMMITTEE.—Present: T. F. Rivers, Esq., in the chair, and Messrs. H. J. Veitch, W. Paul, J. Roberts, C. Ross, W. Denning, W. Warren, G. Norman, G. Bunyard, F. B. Haywood, J. Burnett, G. T. Miles, P. Crowley, J. Rutland, and Dr. Robert Hogg.

The Commissioners for the Cape of Good Hope Colony exhibited a large collection of dried fruits, Pears, Peaches, Apples, Apricots, Muscatels, Quinces, Figs, and others grown at the Cape and prepared in this way for exportation. The Committee recommended a silver Knightian medal for this exhibit. Some Canadian Apples were also shown fresh, and fine samples of Fallowater, King of Tomkins County, and Nonpareil being especially notable. Messrs. C. Lockie, R. Gilbert, C. Howe, and C. Ross sent seedling Melons that were passed; and Mr. G. Bolas of Hopton showed some curiously grown Leeks. Mr. H. W. Ward sent samples of Webb's Chancellor Peas, Mr. House having pods and haulm of his Perfect Marrow Pea, gathered from a field crop grown without sticks. Mr. F. Edmonds, Arnold, Notts, had dishes of Lord Napier Nectarine finely coloured, and Royal George Peaches. Mr. G. T. Turner, Tunbridge, sent samples of Telegraph, Telephone, Stratagem, and Pride of the Market Peas; Mr. G. Fennell had some Noblesse Peaches of good size; Messrs. Viccars, Collyer, and Co., Leicester, exhibited large ripe fruits of Blackberry Wilson, Jun., from plants grown in pots, and referred to on another page. From the Royal Horticultural Society's Gardens, Chiswick, came fruits of the Waterloo Strawberry, a variety with large, rounded-conical, very dark red fruits, and good flavour.

FLORAL COMMITTEE.—Present: G. F. Wilson, Esq., in the chair and Messrs. H. Bennett, W. Bealby, H. Herbst, Shirley Hibberd, J. Walker, W. Wilks, G. Duffield, James Hudson, W. Holmes, R. Dean, C. Noble, H. Ballantine, J. Doiny, J. O'Brien, G. Paul, J. Douglas, A. F. Lendy, E. Hill, and Dr. M. T. Masters.

Sir Trevor Lawrence, Bart., M.P., Burford Lodge, Dorking, showed several interesting Orchids, comprising Masdevallia Dayana with curious yellowish flowers, spotted with reddish brown, something like a Fritillaria; Spathoglottis angustorum (vote of thanks), very pretty, the sepals and petals pale blush or pure white, the lip much contracted; Trichopilia Galeottiana with fourteen yellowish flowers; Cypripedium caudatum, very healthy, grown for five years in a cool house with Odontoglossum crispum (cultural commendation); Aerides roseum and Masdevallia infracta purpurea. Col. C. T. Berkeley, Sibbertoft, Market Harboro', had a brightly coloured variety of Phalanopsis speciosa named Emperor. Mr. W. Bull, Chelsea, sent several new plants. In addition to those certificated were Pteris ludens with three-lobed triangular fronds 6 to 8 inches in diameter and bright green; the slender-leaved graceful Palm, Phoenix hybrida, Lourea Papilio with pinnate leaves, the pinnæ veined pale brown. Messrs. J. Veitch and Sons, Chelsea, had some very beautiful varieties of Gloxinias, scarlet, purple, white shaded pink, and spotted with rose and purple. They also had some superb varieties of Iris Kämpferi, large and of many colours. Mr. B. S. Williams was awarded a vote of thanks for Sarracenia hybrida, very brightly coloured. Mr. R. Dean had a good stand of Stocks, Everlasting Peas, and other hardy flowers. The Rev. W. Wilks, Shirley Vicarage, Croydon, contributed a most interesting collection of varieties of Papaver Rhæas, scarlet and rose, edged with white and beautifully shaded with lighter tints of the colours named. (Vote of thanks and highly commended.)

Mr. J. Thurston, Wolverhampton, was awarded a vote of thanks for good seedling Pinks. Messrs. H. Cannell & Sons, Swanley, showed the yellow Carnation Pride of Penhurst, in fine condition; also Fuchsia General Roberts, with purple corolla and scarlet calyx. Mr. J. Kingsbury, Southampton, had some seedling variegated Pelargoniums, with double pink and scarlet flowers. A. J. Hollington, Esq., Forty Hill, Enfield (gardener, Mr. E. Ayling), was accorded a vote of thanks for Odontoglossum vexillarium Hollingtoni, a pale variety, with petals much larger than usual. Messrs. James Carter & Co. had Silene compacta plena, bright, dwarf, and free; Mr. W. Chitty, Stamford Hill, contributing a seedling Coleus, with dark leaves; Messrs. Veitch & Sons a fine collection of Campanulas, and Messrs. Barr & Son, Covent Garden, an extensive group of handsome hardy flowers. Late arrivals were some Carnations from MM. Vilmorin, Audrieux and Cie, Paris, and a large panicle of Renanthera coccinea from Mr. Nicholas, gardener to Earl Fortescue, Castle Hill, South Molton.

CERTIFICATED PLANTS.

Impatiens Hawkeri (W. Bull).—A very handsome new species of Balsam with large brilliant rose-scarlet flowers, 2 inches in diameter, the leaves elliptical serrated, and the habit strong and compact. It is one of the best of the Impatiens yet introduced, and far superior to Impatiens Sultanii.

Aphelandra chrysops (W. Bull).—A distinct and beautiful stove plant

with elliptical green leaves veined regularly with white, the stems terminating in a dense head (6 to 8 inches long) of imbricating bright yellow bracts, the tubular pale yellow flowers appearing from amongst these.

Dendrobium Williamsianum (B. S. Williams).—A most distinct species from New Guinea, where it was found by Mr. Goldie about eight years since and introduced to Mr. Williams' nursery. It has slender pseudo-bulbs and small leaves, the plant mentioned having a raceme of five flowers, the sepals and petals oval, pure white, the lip scoop-shaped with a prominent ridge in the centre and bright violet purple.

Pelargonium Eden Marche (W. Bealby).—An Ivy-leaf variety of strong habit, with large double bright pink flowers.

Phaius Humbloti (Sir Trevor Lawrence, Bart., M.P.).—A handsome species with long plaited leaves and stout globular pseudo-bulbs, and bearing scapes of six to eight flowers. The sepals and petals are of equal size, oval, and pale rose; the lip is curiously winged at the base, contracted in the centre, with a large yellow crest, white at the base, and the other portion of a rosy purple tint, the column slender, curved towards the lip, and green.

Odontoglossum crispum Mrs. C. Dorman (C. Dorman, Esq.).—A large-flowered white variety and considered by several orchidists as not distinct enough for a certificate.

Odontoglossum crispum Hrubyum (Baron T. Hruby, Austria).—A fine variety, the flowers well formed, the sepals and petals broad, the latter fringed, and all with the lip, heavily blotched with brown, and tinted with purple.

Pteris serrulata Naylor's Crested (Mr. Naylor, Harrow).—One of the most densely curled and crested varieties yet obtained; very pretty.

Stock Snowflake (Messrs. J. Veitch & Sons).—One of the Ten-week type, very dwarf in habit with dense spikes of large double pure white flowers.

Rose Grand Mogul (W. Paul & Son).—A seedling from A. K. Williams, and resembling its parent in build and substance of flower, but stronger in habit, with stout leaves. The blooms shown were of excellent shape, of a very dark rich scarlet, slightly shaded with crimson.

Papaver nudicaule minimum (T. S. Ware).—A variety with bright orange, almost scarlet flowers; very showy and beautiful.

Ornithogalum aureum (T. S. Ware).—A Cape plant with small bright golden yellow flowers.

Oncidium macranthum Southgate's variety (J. Southgate, Esq.).—Flowers larger than usual, the broad sepals and petals finely blotched, and brown at the base.

SCIENTIFIC COMMITTEE.

H. Pascoe, Esq., in the chair. Present—Messrs. W. G. Smith, J. O'Brien, G. F. Wilson, A. G. Gote, G. Maw, and Dr. Masters.

Rhododendron ponticum var. myrtifolium.—Mr. G. Maw doubted this being a true native of Gibraltar, as stated at the last meeting. At the same time Mr. Maw mentioned that *R. ponticum* was wild at Algeiras, where it grew in company with *Balanium culcita*, both cases affording instances of isolation.

Cistus ladaniferus.—Mr. Maw remarked that plants of this with blotched flowers grew in Spain in company with others in which no blotch was perceptible. He had also seen a few instances of blotched and unblotched flowers on the same plant.

Digitalis lutea and grandiflora.—Mr. Maw suggested that these might be dimorphic forms of one and the same species.

Daffodils.—Mr. Maw reported on the occasional occurrence of erect-flowered Daffodils. He also stated that *N. minimum* of "Botanical Magazine," t. 6, was identical with *N. minor*, and abundant in central Spain at high elevations. Drawings of various hybrids were shown, and the opinion expressed that *N. calathinus* and *triandrus* were one and the same species.

Masdevallia Dayana.—Mr. O'Brien alluded to this interesting species, in which the three sepals cohere by their tips, leaving, however, lateral apertures through which insects may enter, as in *M. fenestrata*. The peduncles originate from the top of the shoot, and not from the base as in others of the genus. A botanical certificate was awarded to the plant.

Cattleya Loddigesii.—A dimerous flower was shown, on which Dr. Masters undertook to report at the next meeting.

Fungus on Mangoes.—Mr. W. G. Smith alluded to a fungus, *Capnodium mangiferum*, which he had received from G. S. Jenman, Esq., of Demerara. The fungus occurs also in India, but there attacks the leaves only. In Guiana it hursts through the bark of the trees.

Mistletoe in July.—Dr. Masters showed a spray of Mistletoe with ripe berries.

Selenipedium and Uropedium.—Dr. Masters exhibited a drawing by Mr. W. G. Smith of a specimen, interesting as confirming the notion that *Uropedium* is a monstrous state of *Selenipedium*.

Fire Blight in Pears.—Dr. Masters exhibited specimens of this disease received from Professor Arthur of New York Agricultural Station. The disease is attributed to Bacteria, and happily has not yet been noticed outside the United States. To the naked eye the young shoots look dry, shrivelled, and black as if scorched by fire. Mr. Worthington Smith undertook to report.

GROUPING TREES IN PARKS.

A PARK without trees has as cold and dreary a character, almost, as a wild heath or barren moor: hence, all landscape gardeners plant that part of the domain, more or less, with trees, either single, in groups, or in clumps. A large single tree is an object that has, from all ages, been regarded by mankind with admiration,—from its grandeur, its beauty, and its usefulness. Hence, in all ages, man has either a loved a few of the wild denizens of the forests (which he has cleared away for farming purposes) to remain, to shelter and ornament his dwelling; or, if none were there, he has planted some for the same purpose. If this admiration and use of trees was practised by the ancients, it is still more so now. But, alas! a tree does not grow so as to be effective as a beautiful object for almost half a century: hence, it is desirable, in order to produce effect more speedily, to plant trees in groups, and shelter them from cattle, till they have grown so tall as to be out of their reach. A group may consist of only a couple of trees, or the number may be extended to half-a-dozen,

or even nine trees, all of which may be arranged in different forms, so that each may have a different character. To attain this requires considerable knowledge and skill, and a prophetic eye as to different combinations of figure and kinds of trees necessary to produce a desired character in the scene. The greatest beauty of a group of trees, as far as respects their stems, is the different forms they take as they grow into trees. Some, for instance, grow quite upright, if ever so close together; others take a slanting direction; whilst, in some groups, one tree will grow quite upright, and its neighbour will push out in an almost horizontal position. These different arrangements, or appearances, may be attained in various ways by planting in different distances from each other. I have often obtained a very pretty group by planting two or three together, and allowing them to grow naturally, just as they pleased.

Great diversity of character may be given to groups of trees, and the greater the number (within bounds) of trees the greater variety of position, and, consequently, character may be attained. The grand object of group-planting, however, is the connecting them together in various views, and, at the same time, to leave a sufficient breadth of the grassy part of the park open for grazing. Groups should always be connected in the distance with the wood, forest, or belt, but should never be planted in the deep sinuosities of the margin of such a mass of trees: they should rather be placed near to the projecting swells, and by that position they will seem, in different views of them, to form a part of, and increase the depth of, the wood or belt. In such a position, a single tree should be planted beyond the group into the park, to still more increase that character. Single trees, in general, are very objectionable. It has been, I am sorry to say, a very common practice, by many planters, to introduce into park scenery a great number of these single trees, with a view of effecting a character which can only be obtained by grouping. I once saw, in Hampshire, an example on a large scale of this dotting with single trees. Nay, the planter was not content with planting the trees (Oaks) singly, and at equal distances, but he actually planted every one of them on large hillocks, 3 or 4 feet above the surface. The insipidity and absurdity of this dotting arrangement was absolutely sickening. How different Nature arranges the group, the glade, and the thicket, every lover of rural or forest scenery is aware of. Let such formalists go to the wild forest, or even look at groups of trees in such places as Chatsworth or Hatfield, and many other places where groups of noble trees abound, and let them study and reflect whether such sprinkling and dotting trees will ever produce such fine effects.

The kinds of trees for grouping depend much upon the soil and situation. In high, dry soils, the Scotch Fir, the Beech, the Birch, the Mountain Elm, and the Mountain Ash, may be used with every prospect of success. In lower elevations, the Oak and the Ash, with some of the Pinus tribe, form fine groups. In planting them, I would advise each group to be of one kind, or very nearly so. An outside tree of a large group may be of a different sort, to give variety; and that outside tree should be next to an adjoining group of the same kind, which would give the idea that it had straggled from it. Some groups should have the tallest trees in the centre, and the outside, or points, should be lower, and branched to the ground. Other groups, by way of diverse character, should have the centre the lowest, so as to appear like two groups united by low trees. In fact, the great aim of the planter should be to have every group of as different character as possible from its neighbour. I never saw, in old parks or wild forest lands, two groups alike.

The undulations of the ground in the park will generally give the planter opportunities of placing his groups in good positions. The tongue of a piece of elevated ground is a good position for a group, or on the side of a rising ground will answer for one or more admirably, especially if there is a mass of wood on the top; only avoid all formality, not only in the number of trees in each group, but also the distance from each other, and the masses of which they are to seem a part in various points of view.—P.

REVIEWS OF BOOKS.

Handbook of Mosses. By JAMES E. BAGNALL, A.L.S. London: Swan, Sonnenschein, Le Bas, and Lowery, Paternoster Square. 1886.

THIS interesting work the author modestly terms an essay, and remarks that it has been "written in the leisure hours of one whose everyday life is spent amid the busy hum and constant strain of a work-a-day life in a large town." Its chief object is to direct attention to the study of these minute but beautiful forms of vegetation, and in consequence it is not taken up with botanical descriptions of the genera or species, but deals in a more popular manner with the leading peculiarities of the family. Chapters are devoted to "The Appliances and Material required for Study," "Development," "Moss Habitats," "Classification," "The Geographical Distribution of Mosses," "Cultivation," "Uses," and "Preparing Specimens for the Cabinet." The structure is clearly and simply explained, numerous illustrations assisting in rendering the organs of the plants better understood. Few who have not examined the Mosses closely have little idea respecting their beauties, but, as Ruskin has said, "No words that I know of will say what these Mosses are. None are delicate enough, none perfect enough, none rich enough. How is one to tell of the rubied bloom, fine-filmed, as if the rock spirits could spin porphyry as we do glass—the traceries of intricate silver, and fringes of amber, lustrous, arborescent, burnished through every fibre into faithful brightness and glassy traverses of silver change." A leisure hour or two may well be occupied in the study of these charming little plants, and the young student will find this Handbook a useful assistant in mastering their peculiarities of structure.

Very few botanic gardens include living collections of Mosses, but at Glasgow a good representative collection of the best marked types has been grown, and some time since an accomplished horticulturist wrote us that he had never seen anything more interesting in any garden of the kind. A collection is in process of formation at Kew, but the cultivation of many Mosses is by no means easy, and as there may be amateurs who desire to try a few, we give Mr. Bagnall's chapter on the subject.

"Possibly few have thought the cultivation of the Mosses a matter worthy of their attention—in fact, many a lover of plants would rather destroy than encourage them—yet few plants more amply repay the little trouble they require. But the difficulty is to make a start, or, having made a start, to retain in a flourishing condition the Mosses we have. The choicer species are often most difficult to manage, as though their untamed nature refused to submit to the thralldom of cultivation. Another difficulty that I have found is this, that the commoner species—such, for instance, as *Funaria*—will overrun all others, and become as it were quite masters of the situation. To attempt to raise these plants from spores is also another disappointment; certainly Mosses come, but, so far as my own experience serves, not the Mosses one requires. Hence I have found that, after all, the safest and surest way is to get the plants fully grown, to at once place them in their intended position, and above all to imitate as nearly as possible the natural surroundings of the plant.

"Fern cases are sometimes recommended for this sort of culture; these I have tried myself and seen tried by others; and my own experience is, that whilst the Mosses really look beautiful and all that we could wish for a while, yet after the first season they degenerate, many of them die out, and others are so drawn up by the glass as to destroy all their natural beauty.

"The plan which appears to me to be the most successful is, as I have said, to get the plants from their native habitats in good condition, taking care to bring with them plenty of soil. I believe that one of the main reasons why these plants will not thrive is, that the collectors neglect to do this.

"The commoner species, such as *Funaria*, *Tortula muralis*, and *Ceratodon*, will scarcely require to be encouraged, as they will establish themselves wherever a likely wall or rockwork presents itself, providing that the place chosen is not in a smoky district. Some of the tree Mosses, such as *Leucodon sciuroides* and *Anomodon viticulosus*, I have succeeded in growing by bringing some of the bark on which they were growing and fastening it down with pegs on the earth. To attempt to grow these after they have been removed from the bark will be sure to end in failure. In the case of those species which grow on rocks or stones, a portion of the rock should be, if possible, detached, as the Mosses are more likely to live where they are established than they would be if they were removed from their habitat, and in these cases the pieces of rock will require to be either bedded in the rockery or in pots, making the upper part of the rock level with or slightly above the level of the soil.

"A very successful cultivator of Mosses, Mr. R. Veitch, gives the following account of his mode of transplanting and cultivation:—"For *Grimmia pulvinata* and *Orthotrichum anomalum*, I use a soft porous stone the size of the pot, filling it with drainage to such a height that the stone, when resting on it, is level with the brim. The patches are then placed upon the stone with a little space between each, and for the purpose of keeping them steady I sprinkle a little fine mould into the open spaces. I then water them overhead with a fine rose. For Mosses of this description little water is necessary; and it ought never to be applied until the leaves begin to collapse, and even then with a sparing hand. They should then be placed in a cool, shady situation, and in six or eight weeks they will be attached to the stones. The mould being first removed by means of a gentle run of water, the pots are then placed in a more airy and exposed situation." And speaking of a really more difficult class of Mosses, he says:—"All varieties which partake of the same trailing habit as *Hypnum praelongum*, should not be planted, but laid upon the mould; three or four small pegs will prevent them from being moved. In the course of a few weeks the pegs will be covered with a mass of green foliage. My own plan has been to bring home a good mass of these plants with plenty of soil, to lay them upon the earth of the rockery, and pat them down well with a spade; this of course makes them dirty for a time, but a shower of rain soon remedies that. I have found that covering the newly transplanted Mosses with peg lattice has been a great help against the attacks of small birds, who are very apt to ruthlessly root up the plants without some protection.

"Aquatic species, such as *Fontinalis antipyretica* or *Cinclidotus*, can only be grown in water, and in these cases I think it is imperative that a portion of the stone or wood to which they are attached should be removed with them. I have, however, grown *Fontinalis* for a season, well, without any attachment.

"A few hints as to some of the more easily obtained and cultivated Mosses may be of interest.

"*Atrichum undulatum* is a beautiful species, well worthy of attention; but it will require, during the winter, protection from frost or biting winds, and also plenty of moisture. Few species show so soon the influence of change of temperature. If a good supply of the beautiful fruit is required, it will be essential that good tufts are taken with a fair depth of soil, as the plant usually penetrates rather deeply, and care should be taken that there is a good sprinkling of the male flowers in the tuft. The soil used for potting this should be of a stiff marly or clayey nature, and little or no drainage will be required. A plentiful supply of water will be needed.

"This plant will be found in woods and in moist shady situations, more especially in heavy soils.

"*Pogonatum unigenum* and *P. alpinum* are both worthy of cultivation, and should have a good peaty soil and plenty of root moisture. *P. commune* never seems to flourish more than one season, but might possibly be made to succeed if a good depth of soil were taken with it, and the plants were grown in a seed pan with plenty of silver sand mixed with the soil in which it was embedded. This will also want a good supply of root moisture.

"The Extinguisher Moss, *Encalypta vulgaris*, I have never grown. As this is an annual it will be required to be renewed year by year. But *Encalypta Streptocarpa*, which will be found often in abundance on old mortar-

covered walls, will well repay cultivation. In this case I find it best to remove a fairly good patch of the Moss with the mortar to which it is attached, and place it on the rockwork just as removed; and to keep it intact until I reached home, I have found it advisable to wrap the whole mass in some strong paper, else the friable nature of the mortar will cause it to crumble to pieces in the carriage.

"Many of the Bryums are worth growing; and the large tufts of Bryum capillare, such as are frequent on old roofs, are easily removed and soon establish themselves, and if gathered when the fruit is still young and green will soon make a goodly show.

"Mnium undulatum also thrives well if removed in good-sized tufts, and seems to thrive better than most species in the confinement of a Fern shade. I have had it in beautiful fruit under such culture. Mnium hornum will require plenty of moisture, is easily cultivated, and will give a good supply of fruit.

"The wall species, such as Bryum argenteum, B. caespitium, and B. murale require but little moisture, and seem to thrive best when grown in shady situations. The genus Hypnum will yield a number of species that will amply repay any attention that may be given to them. My own experience will only embrace H. rutabulum, H. praelongum, H. confertum, and H. denticulatum. But I have seen H. tamariscinum and H. loreum cultivated in a friend's Moss-house with great success, the former fruiting freely under culture, and the latter, although always sterile, still showing a most vigorous growth. Hookeria lucens, too, I have seen under like circumstances; and here the plan adopted was that of keeping the pot in which the plant was growing always immersed to a fair depth in water. The beauty of this plant when well grown can only be realised by those who have seen it.

"Pissidens taxifolius, which will be found on shady banks in heavy soils, may also be grown in a properly constituted soil; but with both this plant and the smaller species, F. bryoides, experience teaches that a Fern case suits best for their growth. F. adiantoides, a fine Moss growing in marshes, will do best with the treatment given to Hookeria lucens, as mentioned above; and as it always appears to fruit best in the dampest situations, such treatment would probably be productive of good results. I have never grown this. Many other species may be tried with success, such as Aulacomnion palustre Dicranum scoparium, some of the Rhacomitriums; but experience will be a better teacher than I can hope to be."

The Tourists' Guide to the Flora of the Alps. By Professor K. W. DALLA-TORRE. Translated and Edited by ALFRED W. BENNETT, M.A., B.Sc., F.L.S. London: Swan, Sonnenschein, Le Bas, & Lowry, Paternoster Square. 1886.

THE numerous tourists in the European Alps who wish to learn something about the plants there found, to recognise and determine their names, will find this elegant little volume a welcome companion. All the most characteristic species and varieties are arranged under their natural orders, brief descriptions of the essential characters of orders, tribes, genera, and species being given. The larger genera also have the species classified under sections and their names thus more readily found. The habitats are stated, with in most cases the geological formation or kind of soil upon which they are growing, and the altitude at which they are found, all points of importance, and interesting to cultivators of these alpine plants. The Guide includes all the flowering plants and Ferns, and an appendix gives the names of those which are found in the alpine districts, but which are also natives of England or familiar European plants. In the work generally the translator has closely followed the original of Professor Dalla-Torre, but in place of the "clavis" arrangement has substituted "diagnoses taken and abbreviated from those of Bentham, Hooker, or some other high authority." The book comprises 392 pages, is printed in clear type on thin paper, and neatly bound in red morocco with a tuck, exactly adapting it for the pocket.



KITCHEN GARDEN.

THE DROUGHT.—This is becoming severe. Crops which were nearly mature a few weeks ago are doing well, but later ones have been brought almost to a standstill. Early Potatoes are excellent, but midseason ones will be very small if rain does not come soon. We have lately had an opportunity of seeing many crops, and in some parts, especially in Herefordshire and Shropshire, the drought is injuring the young crops to a great extent. It is a long time since we experienced so much hot dry weather at the end of June and in the early part of July. The ground between all growing crops should be kept well hoed, and where water is plentiful do not fail to use it freely. Peas may be drenched with advantage two or three times weekly. Kidney Beans will take large quantities. Vegetable Marrows, ridge Cucumbers, and Tomatoes should be kept constantly moist. Vegetable crops generally will pay for watering.

MULCHING.—It is now the advantage of this becomes strikingly visible. Plants which were mulched before the dry weather set in are now fresh and healthy, and others not yet mulched will be benefited by an early application of it. The term may be a gardeners' one, but the practice is good, and consists of spreading a quantity of half-decayed manure over the surface of the ground where the roots are growing. This retains the moisture in the soil and keeps the roots cool. Peas, Leeks,

Celery, Beans, Cauliflowers, &c., are all benefited by it. We have applied it in the following way with good results; hoe or fork up the surface first, then water thoroughly, and apply the manure before the moisture has time to evaporate.

PLANTING WINTER CROPS.—We have frequently had the most of our Savoys, Broccoli, Kale, and winter crops generally out before this time, but as yet very few of them have been planted, owing to the dry weather. As soon as rain comes, however, planting should be the order of the day, and the whole of the winter crops should be placed out as soon as possible. Where vacant ground is scarce and some of the early Potatoes are matured, lift these and store them for immediate use. Full-grown Turnips may also be treated in this way, and where any crop is likely to be cleared off soon try and plant Greens between them, as they will grow and take their proper place when the other crop is cleared. It is now late to plant out Brussels Sprouts, but where this has not been done yet do so at the earliest opportunity. In all cases it is a good plan to mix a quantity of soil, soot, and lime until the mixture is the thickness of paint, then dip the roots in it before planting. This not only helps them, but keeps grubs away.

LEEKS.—Early-planted Leeks should receive a large quantity of liquid manure, then earth them up. They are of little use unless well blanched, and the white part cannot be too long or over-thick. Leeks are most useful in winter and spring, and large quantities should be grown in every garden. All the late ones should now be planted out. Give them rich soil, and put them in 15 inches from row to row and 9 inches from plant to plant.

VEGETABLE MARROWS AND RIDGE CUCUMBERS.—The Marrows are now bearing freely on the top of a manure heap, and in all cases it is a good plan to water them freely twice a week. See that the water does not run off the surface of the mound without going to the roots. Thin the shoots and keep them well pegged out. The crop will never be good where it is hidden by the foliage. As soon as the fruit becomes ready for use cut them off, as to allow them to mature at this time would soon stop the formation of more fruit. September is quite soon enough to reserve any for seed. The ridge Cucumbers are not yet ready, but they are growing fast and require attention in stopping and thinning the shoots. Compact growth is the best in their case, and the shoots may be pinched in frequently. All crooked fruit or any deformed should be cut off as soon as they are noticed, as it is only the straight well developed fruits that are valuable. Water freely with liquid manure, and cut the fruit as soon as ever they are ready.

TURNIPS.—The earliest of these are over. All that are running to seed must be thrown away. Crops which are past using should never be allowed to occupy space at this season, when so many vegetables require planting for winter. Make a large sowing of Turnips for winter use. Chirk Castle is a very hardy variety, and so is Orange Jelly and Veitch's Red Globe. They must have rich soil and a sunny position. Some are inclined to think that any place is good enough for Turnips, but this is a mistake, as large, tender, sweet roots will never be produced in poor soil. Make the rows 18 inches apart, open the drills 2 inches deep, and sow good seed very thinly. A little rain is a great assistance to the young plants as they are coming through the ground and until they form their rough leaves; but if the seed is sown immediately the ground is dug and before it dries it will germinate in forty-eight hours.

GARLIC AND SHALLOTS.—These are almost matured, and they may be drawn up and laid out to dry. The best place to dry them is the surface of a gravel or ash walk. They should be turned every alternate day for a fortnight, and then store them, but do not break them up. When it is wet they may be dried in a cool shed under cover. Plant the space with some winter crop.

CABBAGE.—The first seed of those intended for autumn planting must be sown. In late districts it is well to have a good quantity of seed in by the middle of July, but in favourable localities the end of the month is most suitable. Select a piece of rich soil in which to sow the seed, and sow it thinly in rows or broadcast about 1 inch below the surface. The situation should be well exposed, as these plants should by no means be drawn up or pumpered in any way. A dwarf, robust growth to withstand the winter is what is required.

WEEDS.—If these are hoed now they will not become very troublesome this season again. If allowed to grow on, however, they will soon seed, and then nothing will prevent their appearing in crowds in the autumn and next year.

FRUIT FORCING.

MELONS.—*Securing Flavour.*—The greatest aid to flavour is a rather dry and warm atmosphere, with thorough ventilation when the fruit is ripening; but this will not impart high flavour to fruit which is produced by a plant that during the period of swelling has been neglected in the removal of superfluous growths, it being essential that the food supplies be thoroughly elaborated and a thick flesh secured.

Stopping and Removing Growth.—When the fruit is set and swelled to the size of an egg, the laterals should be kept pinched to one leaf, and if this results in too much foliage, so that the leaves upon the primary shoots are crowded or shaded by them, thinning must be resorted to, removing a little at a time in preference to a quantity at once, the latter giving a check unfavourable to the swelling of the fruit, not infrequently causing it to cease swelling; in that case it becomes hard in the flesh, and sometimes causes it to exude or gangrene. The plants should be gone over once a week at least, and in the case of vigorous plants twice, for stopping and the removal of superfluous shoots, the principal leaves being fully exposed to light and air.

Watering.—The plants must never lack moisture at the roots. If

water is not given before the foliage flags a check has been given, and it will have its effect. The great point is not to allow flagging, and yet not to give water until the soil is getting so dry as to be insufficiently moist for the support of the plants, when a thorough supply should be given. Plants swelling their fruit will need water or liquid manure at least once a week, even those with a large extent of rooting space, and those with lessened rooting areas twice a week, and those in boxes every other day or oftener, whilst those in pots will need it once or twice a day. When setting and ripening it will be sufficient to just keep the foliage from flagging, and if watering becomes necessary it should be given without wetting the surface more than can be helped. A poor growth is not good either for setting or the ripening of the fruit, but a drier condition of the soil is desirable at those times than when the fruit is swelling.

Syringing.—When the blossoms are about expanding withhold water from the foliage, and when the crop is ripening it must be kept off the foliage and especially the fruit, which would probably crack, but a close moist atmosphere at night is the chief cause of fruit cracking. At the time of setting and ripening moisture must not be entirely withheld from the atmosphere, but available surfaces should be damped in the morning and afternoon. When the fruit is swelling syringe well at closing time, and if morning syringing is practised it should be done early, but is best omitted, being more liberal in damping available surfaces. Plants in frames should be sprinkled or syringed at closing time, being careful to keep the water from the neck or collar of the plants.

Ventilating.—When the fruit is ripening admit air freely, also when setting, leaving a little on constantly to prevent the deposition of moisture on the fruit or blossoms through the night. It is also a capital plan to leave a little air on at night in all cases, and increase it early in the morning of bright days when the temperature has advanced to 75°, and gradually increase it with the rising temperature, keeping through the day at 80° to 90°, and closing sufficiently early to rise to 95° or 100°, and before nightfall admit a chink of air at the top of the house.

Temperature.—This will now be maintained without having recourse to artificial heat, it being sufficient if the night temperature does not fall below 65°, and is maintained at 70° to 75° by day. In a dull cold period a little fire heat may be desirable to maintain a buoyant condition of the atmosphere when the blossoms are setting and when the fruit is ripening, and plants in frames at those times will be better if the frames are lined so as to allow of a free circulation of air, otherwise the temperature will be ruled by external influences.

Second Crops.—The old plants being in good health and free from red spider, they will show fruit freely on the laterals, even when the fruit is swelling, but these will not set unless syringing is discontinued, which is not advisable, so that sufficient lateral growth should be encouraged to insure fruit showing when the present crop is advanced for ripening, and these will set freely with the drier and airier atmosphere, and the crop be somewhat advanced by the time the first is cut. The plan is then to cut away such old growths as are useless, and concentrate the fresh growth on the young fruit. A little of the old soil may be removed, and be replaced with lumpy loam and a fourth of well-decayed manure. A good soaking of tepid water should be given, followed at once with some thicker and equally warm liquid manure. If there is any red spider, sponge the leaves with soapy water, 2 ozs. to the gallon, and remove the worst infested leaves. Maintain a good moisture, and sprinkle the beds in houses with horse droppings once or twice a week, not much at a time, but little and often. Failing these, sprinkle the paths, &c., with liquid manure two or three times a week, but it is best to use the liquid at all afternoon dampings, and weak. It must be kept from the foliage. The plants not having fruit set when the first crop is cut, but being healthy and free of red spider, they should be treated as if they had fruit swelling, encouraging growth, and when they show fruit keep drier and freer ventilated. They will set and swell a crop more quickly than young plants, but if they are much exhausted with the first crop, and attacked with red spider, they would be best rooted out. In that case thoroughly cleanse the house or pit, and remove some of the soil, clearing off the surface a couple of inches deep, and replacing with fresh. After giving the bed a soaking with liquid manure fresh plants may be put out. Kept close, moist, and shaded, they will soon become established, and show fruit so as to afford a late supply; but such structures must have means of affording artificial heat, as Melons in late September are worthless unless they have a dry atmosphere, a temperature of 65° to 75° secured, and a free circulation of air. We find late Melons very useful for the shooting season. In the case of narrow beds the whole of the soil should be removed, and if some fresh fermenting material is added to the old, some of the most exhausted being removed, it will help the plants materially. Plant on hillocks or ridges rammed well down.

Put supports to the fruits before they get heavy, letting the board slant so as not to hold wet, and place slates beneath the fruits of the plants in frames, raising them as the fruits advance in swelling on inverted flower pots above the foliage. Impregnate the blossoms daily until a sufficient number of fruit is set of about an equal age on a plant, then remove all the flowers and reduce the fruit to three or four on a plant according to their vigour.

Shade only to prevent flagging; it is most needed on bright weather succeeding a dull moist period. Melons directly exposed to the sun will be improved by slight shade when ripening, especially when the plants do not from indifferent health supply moisture to the fruit freely. Pot off any plants requiring it, and keep them sturdy by placing them near the glass. Look well after canker. It is occasioned by damp. The remedy is a drier atmosphere or freer ventilation, and rubbing quicklime into the affected parts until dry.

THE FLOWER GARDEN AND PLEASURE GROUND.

Watering the Flower Beds.—A long period of hot and dry weather following so soon after planting has seriously militated against the progress of many of the bedding plants. Such strong-growing herbaceous plants as Phloxes, Pyrethrums, Japanese Anemones, and Asters have been also suffering badly for want of water, the only exceptions being those that were divided and replanted early in the year. Even these are benefited by occasional copious soakings of water. Dribblers in any case are worse than useless, and a thorough soaking should be given, preferably in the evening. Those living near towns are, in most instances, well supplied with water, and a favourite amusement of an evening is to turn on the water and saturate the beds, either through a hose or watering pot. These too regular supplies of hard and very cold water not unfrequently do more harm than good, as they chill and greatly impoverish the soil, and under the circumstances it ought not to surprise anyone if the occupants of the beds and borders do not grow satisfactorily.

Value of Mulching.—It is doubtful if amateurs, as well as many gardeners, fully appreciate the value of mulching, or a surface dressing of short manure, leaf soil, cocoa-nut fibre refuse, or short grass from the mowing machine. Whatever is used should be applied after a heavy rainfall, or a liberal watering has been given, and the surface lightly stirred with a flat hoe. If the mulch is considered unsightly it may be lightly faced over with soil, this also tending still further to preserve the moisture, and the birds are less likely to disturb it. Zonal Pelargoniums, if planted in fairly good well-worked soil, scarcely need a mulching, but Violas, Verbenas, Calceolarias, Begonias, Dahlias, Fuchsias, Heliotropes, Stocks, Asters, Zinnias, and other annuals delight in a moist root-run. The surface of unmulched beds and borders should be frequently hoed over, this both keeping down the weeds, and also tends to check cracking and an unduly rapid evaporation of moisture. Too little value is usually attached to the grass from the lawn mowers. In reality this is a capital mulch for borders, plantations, Rose beds, and especially newly-formed shrubberies. In one town garden we are acquainted with Rhododendrons never made good progress till the proprietor ordered that all the grass from the lawn mowers should be spread over the surface of the beds. Since this has been done they have grown and bloomed grandly, the mulch both preserving the moisture in the beds, and also later on, when well decayed, serving as good food for the roots. All newly formed borders, and any trees or shrubs that were transplanted during the past winter or spring ought now to receive a heavy watering, or they may yet collapse. It is the old ball that needs to be kept in a moist state, the roots in this serving to keep the foliage fresh till such time as more roots are formed in the surrounding soil. In order to effectually moisten these balls it is advisable to form a basin round the stems, this preventing the water from running away to where it is less needed. Sometimes it is necessary to thrust a sharp iron rod into the ground all round the stems, this rendering the work of moistening the ground tolerably easy and certain. Mulching should follow this watering.

Thinning Annuals.—Annuals, as a rule, are left much too thickly together, and the consequence is a weakly growth and poor bloom. Mignonette, Candytuft, Eschscholtzias, Godetias, Poppies, Sweet Peas, Love-Lies-Bleeding, and various other annuals, if properly thinned out, branch freely, while the bloom is much stronger, and produced over a much greater length of time than is the case when the plants overcrowd each other. Wallflowers, Stocks, Forget-me-nots, Sweet Williams, Campanulas, Polyanthus, and other biennials raised this season, and intended for next spring's display, ought also to be freely thinned out, the thinnings being pricked out on good ground and well attended to. They will require to be shaded from bright sunshine for a time, and watered overhead occasionally. When left too long in a crowded state they never make stocky plants suitable for flower beds.

Propagation of Carnations and Pinks.—Pipings or small side shoots of these may now be put in. In moist localities they may be inserted in a cool shady border or behind a north wall, but as a rule they strike more readily in frames with or without a little bottom heat. The cuttings being slipped off require no further preparation, and the sooner they are put in the better. We use ordinary bedding Pelargonium boxes, draining and filling these with a fine loamy mixture, to which plenty of sharp sand or grit has been added. The cuttings are dibbled in firmly, and from 2 to 3 inches apart according to their size. They are kept rather close and shaded from bright sunshine, keeping them uniformly moist, and under these conditions they are not long in striking roots. Afterwards they are planted out on well-prepared beds, and flower strongly the following season. Seed saved from any of the Pinks, notably Mrs. Sinkins and Lady Blanche, may be sown directly it is ripe, standing the box or pan containing the seeds in a frame or under a hand-glass till it germinates, which it soon does if kept moist and shaded. The seedlings will flower next season.

PLANT HOUSES.

Primulas.—The earliest of these plants should without further delay be placed in 5-inch pots. Cold frames will now be plentiful to accommodate them. They should be well surfaced with coal ashes, and the plants arranged as close to the glass as possible to prevent the foliage from drawing. For a fortnight after potting keep the frame close until the plants have commenced root-action in the new soil. They must be most carefully watered for some time, for if there is any carelessness in this respect the plants make slow progress for a very long time. The frame in which they are grown should be well shaded, for these plants cannot endure strong sun. After they are rooting freely air must be daily ad-

mitted to insure a sturdy compact growth of the foliage. Smaller plants may be placed into 4-inch pots, while smaller ones, or those not well rooted, may remain in the pots in which they are now in until they are well rooted. A suitable compost for these plants is good fibry loam two parts, with one part of leaf mould; to this may be added one-seventh of manure passed through a sieve and a liberal quantity of sand.

Double Varieties.—Plants that are rooted may be potted from time to time as they require more root room. For these moderate-sized pots, say 5-inch, are preferable to larger ones; we have invariably found them damp badly during the winter if over-potted. For the present we shall grow our plants on a shelf in the greenhouse where late-flowering Azaleas are encouraged to make their growth, the house being kept close and shaded.

Bouvardias.—Plants that have been raised from portions of roots and grown on under intermediate conditions will be bushy little specimens ready for 5-inch pots. When placed in these and rooting in the new soil they should be grown under cool airy treatment. For a time the plants may be plunged in a cold frame, and afterwards, say towards the end of the month, plunged on a sunny border. If planting out is preferred, select a southern position with a firm bottom. Then place 6 or 8 inches of good soil, such as loam, leaf mould, and manure, and turn the plants out instead of potting them. For a time a frame should be placed over them until they are established and thoroughly hardened, when it can be removed.

Salvias.—Young plants of different varieties may with safety be planted out on a sunny border. This is the least trouble and decidedly the best method of managing these autumn and winter-flowering plants. Cuttings may still be rooted, and if stopped once or twice they are more useful for decoration than those rooted earlier in the season.

Tuberous Begonias.—Young plants growing in cold frames that are not required to flower for some time should be encouraged to grow by potting them from time to time as they require more root room. This will prevent them coming into flower as early as if they are confined at their roots. Any blooms that appear should also be removed. Plants in flower will continue gay as long as growth is made; they should be assisted if the pots are full of roots by the aid of weak stimulants. Seedlings raised from seed sown early in the year, and now established in pans and boxes, will make much greater progress if planted out in light soil in a frame with about 4 inches of soil than if grown in pots. If the desire is to develop them as large as possible for flowering another year, they should be encouraged so that strong tubers are formed.

Cyclamens.—Seedlings of various sizes as they fill their pots with roots should be repotted, for if starved by being kept in small pots too long they will not make the progress they ought to do. The earliest plants, or those raised in August last, should now be placed into 5 and 6-inch pots and grown on under cool conditions. They should be moderately close to the glass, enjoy abundance of light and moisture, with a good circulation of air daily. A confined shaded atmosphere only draws the foliage up weakly and ruins the constitution of the plants. These must be carefully watered and freely syringed twice daily. Other plants that have filled thumb pots with roots may be placed into 3-inch, so that they can be transferred into 5-inch afterwards, for pots that size will be large enough for plants that are now in small pots. It may be necessary to push these forward for a time in an intermediate temperature. Cyclamens do well in a compost of two parts fibry loam, one of leaf soil, with about one-seventh of cow manure passed through a sieve, and the addition of a little sand. Those placed in their flowering pots should have the soil pressed moderately firm.

Lapagerias.—Plants trained under the roof of the greenhouse, or any other structure, should now be growing vigorously and producing strong growths from the base. These must be tied to the wires at intervals of a few days to prevent the points of the shoots touching the glass, for if allowed to do so they are quickly injured and fail to extend. The smaller growths should be drawn out, which brings these side shoots early to a standstill, and they have a tendency to flower all the better. This is not all, for they are more natural and beautiful when the plants are in bloom than is the case when the whole of the shoots are stiffly tied to the wires. If the plants are growing on the south side of a house the ordinary shading applied for the majority of plants will prove insufficient. Strong light or sun turns the foliage yellow. In addition to the ordinary shade used for the house, we have always found it necessary to use open mats as well over them. Abundance of water must be given while they are growing freely both at their roots and over the foliage. If the border in which they are growing is full of roots they will be benefited by applications of liquid manure. If aphides appear on the foliage fumigate the house lightly at once with tobacco smoke.

THE BEE-KEEPER.

ROBBING—ITS PREVENTION AND CURE.

IN the early months of the year, and at any other season when there is either an entire or partial cessation in the honey flow, one of the worst features in the character of bees begins to show itself in the persistent attempt too often made to obtain honey, not by honest labour in the fields but by

predatory attacks on neighbouring hives. Sometimes stock after stock is attacked until either the robbers gain the mastery of some one colony weaker than the others, or, repulsed by all, they seek in the apiary of some other person a store of easier access. The greatest prevention of robbing is keeping all stocks strong in numbers and headed by a fertile queen, and when this is the case the bee-keeper has little to fear, and this more especially if, when he suspects an attempt to pillage is being made, he takes the wise precaution to narrow the entrances of all the hives and so enable the bees more easily to combat the thieves. Many a stock is robbed without the owner having the slightest idea of what is going on, when a little timely help might have saved it. It is so easy to tell when thieves are making their excursions that it seems almost unnecessary to reiterate the signs so well known to an experienced bee-keeper; but if an unusual disturbance is noticed, attended with loud humming and other signs of unusual agitation at a time when other stocks are comparatively quiet, a suspicious eye should be cast on the scene of the uproar, and for the benefit of those who are unable to tell from the manner of flight and general aspect of the bees whether a stock is being assailed, it may be well to repeat what has often before been written by various writers, that by means of a little flour sprinkled on them as they leave the hive the bees may be marked and proof be at once afforded as to the honest or dishonest purpose of their flight.

If it has been proved that an attempt is being made to rob a stock the first remedy is to narrow the entrance, and in early spring or late autumn room need only be allowed for a single bee to pass in or out, care being taken to see that such entrance never becomes entirely blocked and so causes the suffocation of the stock. If the strangers still continue to enter and leave with their ill-gotten gains more stringent measures must be taken, and recourse be had to the plan advised by "A Lanarkshire Bee-keeper," which it will be remembered was to smear the board of the "attacking" stock with carbolic acid, not interfering with the stock attacked; but even this is not at all times sufficient in a really bad case, and then another plan has been used in my apiary with success, but recourse should only be had to it when other measures have failed. It must first be borne in mind that even skeps are enclosed in wooden cases so that the acid does not affect the bees inside so much as if their hive was not in such a cover. I first get a match box and make in each end of it a small hole corresponding to the one in the hive—which is to be only large enough to admit a single bee at once when robbing is going on—and these being cut the box is placed so as to form a "tunnel" entrance. When in position a piece of stone or brick is placed on the top of it, and also one on each side, changing the appearance of the front of the hive and giving a good opportunity for the use of carbolic acid in its full strength. When the stones or bricks are put in their places they must on their upper surfaces be well smeared with the acid, the smell of which will be most obnoxious to outsiders, but not nearly so great an annoyance to those within. On treating a stock so I have seen a small swarm of bees hovering round and not daring to approach too near, and even when the strength of the acid has been spent but few have dared to enter the unknown tunnel, and these are at once turned back by the sentries at the inner gate. If, and in a very weak stock it might so happen, the bees keeping up in the comb and not guarding their entrance at all the robbers did now and then enter, I should smear the outer end of the match box, and even the alighting board itself, rather than allow a single bee to gain access to the interior. At night after dusk the box and stones may be removed and all traces of the acid be taken away, and next morning the box alone replaced; but if another attempt should be made the same method must be adopted, until at last perseverance is rewarded by success, and a stock is saved from destruction.

It is true that by using the carbolic near the entrance of

the stock attacked the attention of the bees is to some extent drawn off from the weak spot, but when they are left undisturbed by the acid and still are unable to beat off their enemies the risk must be incurred, and by using the precaution of a tunnel entrance not only is an additional impediment put in the way of the robbers, but the strong scent of the carbolic is less distressful to the bees in the protected stock, but is equally, if not more, powerfully deterrent to the robbers, from the fact that the stones offer an exceedingly strong point of vantage to which to apply the acid. Necessity is the ruling power, and when it is remembered that the mania having once seized a stock every colony in the apiary is certain to be attacked in turn, the urgent need at once to repress the outbreak even by the use of strong measures will at once be recognised. Robbing is caused generally by carelessness, occasionally by misfortune.

It is an obligation upon all bee-keepers to remember that an exposure of honey in the open air, unless in the very height of the season, is a practice pregnant with mischief to all stocks within a two-mile radius. Bees like men are frail creatures, and with difficulty resist temptation. Pity their weakness.—FELIX.

QUEEN INTRODUCTION.

I HAVE delayed answering the kindly remarks of "A. H. B." until I had an opportunity of trying whether his plan was as perfect as he tries to make out, and in a later number of the Journal "A. L. B." says he has nothing to add, except that in certain cases the queen may have to be caged for twenty-four hours.

This rather reminds one of the definition of a crab as a red fish which walks backwards, which was quite correct except that it is not red, that it is not a fish, and that it does not walk backwards! If there is any meaning in words, I take it that "A. H. B." believes in direct introduction, and disbelieves in caging queens. His method is very simple, saves a lot of worry and bother; but I should be sorry to follow it in its simplicity, unless with the modification of "A. L. B."

However, I had a capital opportunity of putting it to the test. I wanted to introduce an imported Ligurian queen, and having made an artificial swarm I put them in one of my bar hives, gave them a bar of brood, none of which was less than twelve days old, and after sixty hours I let the queen run in at the top of the hive, and twenty minutes afterwards found her balled on one of the bars. The bees were still kept without any uncapped brood, and on two successive days I let her out with the same result that she was immediately balled. Having to go to Liverpool as Judge at the bee show, I left her caged till my return, and on July 1st (just a week after her unaccepted introduction) I again set her free, with the same result, and had to re-cage her. I shall be glad to hear from "A. H. B." why his plan failed. As far as I know I followed out his instructions to the letter; the bees were fed with syrup to make them more well-disposed to the foreigner, but all was of no avail. As I remarked before in a previous article, I have generally had more difficulty in introducing foreign than English queens. I quite agree with "A. H. B." that, being only a novice and understanding nothing whatever about the subject (though I have kept bees for twenty years and have read a good deal of English, American, German, and French bee literature) it is rather presumptuous on my part to trouble you with my ignorant ideas on the subject.

"If "A. H. B." had had the misfortune of being examined so often as I have been in various subjects, as well as that of being examiner, he would be aware of the fact that in all sciences which are not exact it is not uncommon for the examiner to be the examined. I was perfectly aware of his plan, but I did not believe it then, and I do not believe in it now as an infallible plan. During my short experience as a bee-keeper I have introduced some scores of queens, English and foreign, and have never used of late anything but the pipe-cover cage, and have found the bees will readily take a strange queen after forty-eight hours, and as far as I can remember I have not lost a dozen queens out of some hundreds that I have introduced. The opinions of Mr. Abbott are directly contrary to those of "A. H. B.," as he says "there should be plenty of young bees and hatching brood in the hive," and from his successful introduction of an albino queen in a hive from which the other queen had only just been removed, there must evidently have been eggs. The Raynor cage is, I believe, the one always used by its namesake. Mr. Baldwin prefers the pipe-cover cage, put, if possible, over an unhatched queen cell to delude the bees that she is the Simon Pure; while Mr. Cowan prefers the pipe-cover cage and confinement for

three days or more, while he advises the presence of young bees by putting brood from other hives into the one we wish to introduce a queen, "as the old bees frequently encase the queen and hug her to death unless she be released."

"If "A. H. B." thinks their evidence is untrustworthy, let us see what our American cousins say. Roots advises using the Peet cage. Mr. S. M. Hayhurst, in "Gleanings," writes that, with a good smoking, bees in weak nuclei sometimes accept strange queens if care is taken. At other times the utmost care results in failure, and he has lost nearly the whole batch of queens. Cook uses a wire cage or Peet's cage, though he sometimes succeeds with direct introduction; but if he has a very valuable queen he puts her into a hive with no bees, but with brood that is just ready to hatch, and keeps them in a warm room. F. Beckley, writing in the *American Bee Journal*, narrates how he lost a fine hybrid queen by letting her run in at the entrance of a hive which had no brood or eggs, while another queen was well received after a night's caging.

So I think, after all, I will not retract my saying that bees are "kittle cattle." I am perfectly willing to admit that success will follow direct introduction, but I deny its being infallible, and I prefer caging; nor do I perceive how imputing motives or making groundless accusations can advance the knowledge of bee-keeping.—GEO. WALKER, *Wimbledon* (A SURREYSHIRE BEE-KEEPER).



* * All correspondence should be directed either to "THE EDITOR" or to "THE PUBLISHER." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

TO CORRESPONDENTS.—We desire to assure those of our correspondents whose letters and communications are not promptly inserted that they are not the less appreciated on that account. Our pages are practically filled several days prior to publication, and letters arriving on Wednesday morning, except by special arrangement, are invariably too late for insertion. The delay in the publication of some of these is not of material importance, but reports of meetings and shows held a week previously lose much or all of their value if not received in time to appear in the current issue.

Book (W. J. C.).—We believe that Don's "Dichlamydeous Plants" can only be obtained second hand now, and your best plan would be to write to some dealer in old books. The price varies according to the condition of the books. We have seen the four volumes priced at 10s, but they are usually more.

Grapes Scalded (*Ferndale*).—The Grapes before us are in precisely the same condition as some sent a week previously by "Merchant," and the reply given on page 33 is equally applicable in both cases. A common cause of the evil is having vineries closed too long in the morning, then throwing open the ventilators to a considerable extent at once. This causes such sudden and extreme evaporation from the berries that they shrink through the loss of moisture that is requisite to sustain them in firm condition.

Red Spider on Vines (*J. C., Somerset*).—Undoubtedly the leaves sent are infested with red spider, but the Rose is not necessarily the cause of it. We have had a *Maréchal Niel* Rose trained inside a vinery for years and no red spider on the Vines. Your house does not appear to be sufficiently ventilated, and the air has been kept too dry. If the Grapes have not commenced colouring, most of the insects might be washed off with forcible yet careful syringings of clear water pointed between the bunches and directed forcibly to every leaf. This must not be an ordinary sprinkling that amateurs indulge in, but a thorough drenching, even at the risk of the operator drenching himself. It should be done in the evening, air being admitted very early the next morning. We have cleansed more than one house of Vines in that way, and have known others fail simply because the work was imperfectly performed. An alternative plan is to sponge the leaves, as another correspondent is advised to cleanse his Cucumbers. Give more air and use more water, and you may prevent the enemy doing any material injury to the Vines.

Plants in Vineries (*Idem*).—Roses cannot be satisfactorily grown under Vines in the summer, and are far better outdoors after flowering in pots till the winter. They can be placed in the house after the Vines are pruned

and kept there till the Roses flower if desired. There are no better plants for growing under Vines in summer than Ferns, and with good management these do no harm to the Grapes. Plants of the Rex type of Begonias grow and colour well in the shade. Palms also succeed very well, and are ornamental, while excellent Orchids have been grown in vineries. See page 72 of Mr. Castle's interesting work on Orchids, which can be had from this office in return for 1s. 2d. in stamps.

Grubs Infesting Strawberries (W. Wallace).—The insect forwarded is the larvæ or grub of the red-legged weevil (*Otiorhynchus tenebrioides*), sometimes called also the Apricot weevil, because the beetles infest the buds and young shoots of that and other fruit trees in the spring, afterwards depositing eggs on the ground. The grubs occur during summer at the roots of Strawberries, Raspberries, and Currants, now and then amongst such vegetables as Cabbages. Little can be done against this insect in the case of Strawberries, at least during the fruiting season, except watering with clear lime water, or perhaps with a decoction of quassia chips; subsequently the surface soil should be removed and burnt where there have been infected plants, and free application made of the solution of petroleum and softsoap, often recommended, or gas liquor suitably diluted.

Annuals (Stretton).—Annuals are defined as plants that, if raised from seed, grow, flower, perfect their seed, and die in a year, but several plants which under cultivation are usually treated as annuals are really perennials. For instance, you mention Mignonette, of which a variety in the Mediterranean region becomes quite shrubby, and under glass the common Mignonette can be grown to a height of 3 feet or more with woody stems, if the flowers are removed until the desired size is gained. In England, as ordinarily treated, the Castor Oil plant is an annual, but in Italy and elsewhere it is shrubby and lives for several years. Wheat is an annual if sown in spring, but when sown in autumn it is regarded as a biennial; on the other hand, *Lolium perenne* is an annual. Other annual plants may have their duration prolonged by removing the flowers, and if you try some experiments we should be glad to learn the results. Summer-pinning fruit trees is undoubtedly beneficial.

The Barometer and Thermometer—Dry and Moist Air (Quill Pen).—The thermometer shows the weight of the air by means of mercury in a tube open at one end. When the air is dry, deficient in vapour, or calm, it is heavier than usual, and presses more upon the mercury in the well or cistern of the barometer (concealed by the woodwork), and forces up the mercury; then the mercury is said to stand high. When the air is moist or filled with vapour or windy, it is lighter than usual, and the pressure consequently diminishing on the mercury in the cistern, the column in the tube falls, and is said to be low. Now all these changes are observed in different kinds of weather, and as the barometer shows them for the most part before the changes actually come on, we see how it can be used as a weather-instrument. In a thermometer the mercury is sealed up from the air entirely, instead of being open to it at the bottom in a cistern, as in the barometer, and the mercury rises or falls as the varying temperature or degree of heat expands or contracts it. The heat of the air passes through the glass tube to the mercury and causes it to expand, whilst by the effect of cold it contracts; and so the thread of mercury rises or falls with heat or cold respectively.

Roses for Successional Flowering (Pen and Ink).—Situation has a considerable influence on Roses. Those against a south wall flower very much earlier than the same kinds in the open ground, and plants in that position also give flowers late, we having had them in December, when those in the open did not expand. Our earliest were the China Roses, the old Monthly, so much esteemed formerly, and now so much neglected, its blush flowers being really beautiful when about half expanded, and contrast finely with the old Purple, a most abundant bloomer. Clara Sylvain, white; and Louise Philippe, reddish crimson, are fine. They do well planted at the foot of south walls, and given liberal treatment—i.e., copious supplies of water, liquid manure, and mulching, flower abundantly from early summer to late autumn. If you could supplement them with some Tea-scented on a south wall you would be making provision for an early and late supply of flowers. Niphetos for such position is capital, and may be treated as a bush, and similar remarks apply to Jules Finger, Innocente Pirola, Madame Celina Noirey, and Lady Mary Fitzwilliam. For climbers Gloire de Dijon, Reine Marie Henriette, and Chéribunt Hybrid, all Teas; and of Noisette, Lamarque, Sombreuil, Celine Forestier, and William Allen Richardson. In the open have Gloire de Dijon of Teas, and of Bourbons Acidale, Queen of Bedders, and Souvenir de la Malmaison; and of Perpetual Moss, Blanche Moreau, Mousseline, and Eugénie Verdier. Of Hybrid Perpetuals we name twenty-five, as you can probably find other positions for those named above—La France, Duchess of Connaught, Countess of Rosebery, Duchess of Bedford, John Hopper, Alfred Colomb, A. K. Williams, Charles Lefevre, Boule de Neige, Auguste Newmann, Baroness Rothschild, White Baroness, Mons. E. Y. Tas, Marguise de Castellane, Madame Victor Verdier, Maréchal Vaillant, Mdle. Marie Verdier, Souvenir de Madame Bertier, Senateur Vaisse, Royal Standard, Reine du Midi, Princess Mary of Cambridge, Mdle. Marie Rady, Lord Frederick Cavendish, and Lady Sheffield. With these you will have a good lot of Roses, and have flowers over a lengthened period. Maréchal Niel Roses are very poor as a rule this year outdoors, the cold weather stunted the growth, and the late heat was not favourable to the expansion of the flowers. Thin the old growths, and train young shoots in their place. These are much the freest flowering, and the flowers are far the best formed. You may feed liberally so as to encourage a strong growth, which should have full exposure to the light and air to ensure the wood ripening. The Rose in greenhouse may be cut back, the old flowering growths being removed, and other encouraged in their place for next year's bloom.

Insects on Cucumbers (Young Market Gardener).—The plants have not had the requisite attention, and the frames have been kept too dry. Have you tried fumigation for destroying the insects? Filling the frames moderately with tobacco smoke for two or three consecutive nights, and shading the following days if sunny, might do good. The leaves of the plants should be dry when fumigating, but the earth may be moist. Another plan, more tedious, but perhaps more effectual, is to remove all faulty leaves, and with a soft sponge dab a solution of softsoap and tobacco water

on the under sides of the leaves remaining, taking care not to break or injure them. Two ounces of softsoap dissolved in a gallon of water, stirring in about a pint of tobacco liquor would, we think, kill all the insects to which it was fully applied. If the plants are fairly healthy it will be worth while devoting a few hours to cleansing them. We should also work in fresh soil, quite covering the old, and give more water towards the evening of hot days. If the Cucumbers fail it is impossible for us to say how you could best occupy the frames, as we do not know what you have to put in them. Very strong Tomato plants, now showing flower and fruit, would, perhaps, ripen fair crops with good management, but you had better try and save the Cucumbers.

Names of Plants.—We only undertake to name species of plants, not varieties that have originated from seed and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in firm boxes. Slightly damp moss or soft green leaves form the best packing, dry cotton wool the worst. Not more than six specimens can be named at once. (A. W.).—1, *Plan ra Riccardi*; 2, *Catalpa syriaca* variety; 3, *Scabiosa succisa*. The spike of whitish flowers is *Francoa ramosa*, and the Begonia resembles *B. natalensis*, but the specimen had no flowers. (L. M. W.).—The shrub is *Philadelphus grandiflorus*, a native of North America, having been introduced from Carolina in 1811. Several other species of *Philadelphus* are grown in gardens; *P. coronarius*, the Garland Flower, Mock Orange, or Syringa, being the best known. There are varieties of this with double flowers, variegated leaves, and dwarf habit, each bearing appropriate names. *P. Gordonianus* is also a favourite plant.

COVENT GARDEN MARKET.—JULY 14TH.

HEAVY supplies to hand, with business quiet.

FRUIT.							
		s. d.	s. d.			s. d.	s. d.
Apples	½ sieve	0 0	to 0 0	Oranges	100 4	0 to 6	0
Cobs, Kent ..	per 100 lbs.	0 0	0 0	Peaches	per doz.	4 0	10 0
Figs	dozen	3 0	4 0	Pine Apples English ..	lb.	2 0	3 0
Grapes	lb.	1 0	3 0	Plums	½ sieve	0 0	0 0
Lemons	case 10	0 15	0 15	St. Michael Pines ..	each 4	0 0	6 0
Melon	each	1 0	2 6	Strawberries	per lb.	0 6	1 0
Cherries	½ sieve	3 0	6 0				

VEGETABLES.							
		s. d.	s. d.			s. d.	s. d.
Artichokes ..	dozen	1 0	to 0 0	Lettuce	dozen	1 0	to 1 6
Asparagus ..	bundle	2 0	5 0	Mushrooms	punnet	0 6	1 0
Beans, Kidney ..	lb.	0 6	0 0	Mustard and Cress ..	punnet	0 2	0 0
Beet, Red	dozen	1 0	2 0	Onions	bunch	0 3	0 0
Broccoli	bundle	0 0	0 0	Parsley	dozen bunches	2 0	3 0
Brussels Sprouts ..	½ sieve	0 0	0 0	Parsnips	dozen	1 0	2 0
Cabbage	dozen	1 6	0 0	Potatoes	wt.	4 0	5 0
Capsicums	100	1 6	2 0	„ Kidney	wt.	4 0	5 0
Carrots	bunch	0 6	0 9	Rhubarb	bundle	0 2	0 0
Cauliflowers ..	dozen	4 0	6 0	Salsify	bundle	1 0	1 6
Celery	bundle	1 6	2 0	Scorzonera	bundle	1 6	0 0
Coleworts	dcz. bunches	2 0	4 0	Seakale	per basket	0 0	0 0
Cucumbers	each	0 3	0 6	Shallots	lb.	0 3	0 0
Endive	dozen	1 0	2 0	Spinach	bushel	3 0	4 0
Herbs	bunch	0 2	0 0	Tomatoes	lb.	0 4	0 6
Leeks	bunch	0 3	0 4	Turnips	bunch	0 4	0 6

PLANTS IN POTS.							
		s. d.	s. d.			s. d.	s. d.
Aralia Sieboldi ..	dozen	9 0	to 18 0	Ficus elastica ..	each	1 6	to 7 0
Arbor vitæ (golden)	dozen	0 0	0 0	Fuchsia	per dozen	4 0	9 0
„ (common) ..	dozen	6 0	12 0	Foliage Plants, var.	each	2 0	10 0
Arum Lilies	dozen	0 0	0 0	Genistas	dozen	0 0	0 0
Azaleas	dozen	0 0	0 0	Hydrangea	per dozen	6 0	12 0
Bedding Plants, var.	doz.	1 0	2 0	Ivy Geraniums ..	per dozen	3 0	6 0
Begonias	dozen	6 0	9 0	Lilies of the Valley, in			
Calceolarias ..	per dozen	4 0	9 0	„ pots, per doz.		0 0	0 0
Cinerarias	dozen	0 0	0 0	Lobelias	per dozen	3 0	4 0
Cyclamen	dozen	0 0	0 0	Marguerite Daisy ..	dozen	6 0	9 0
Cyperus	dozen	4 0	12 0	Mignonette	per dozen	3 0	5 0
Dracena terminalis,	dozen	30 0	60 0	Musk	per dozen	2 0	4 0
„ viridis	dozen	12 0	24 0	Myrtles	dozen	6 0	12 0
Erica, various ..	dozen	12 0	24 0	Palms, in var. ..	each	2 6	21 0
Euonymus, in var.	dozen	6 0	18 0	Pelargoniums, scarlet,	doz.	3 0	6 0
Evergreens, in var.	dozen	6 0	24 0	Pelargoniums ..	per dozen	6 0	15 0
Ferns, in variety ..	dozen	4 0	18 0	Spiræa	dozen	6 0	12 0

CUT FLOWERS.							
		s. d.	s. d.			s. d.	s. d.
Abutilons	12 bunches	2 0	to 4 0	Lily of the Valley, 12	sprays	0 0	to 0 0
Anemone	doz. bunches	0 0	0 0	Marguerites	12 bunches	3 0	6 0
Arum Lilies	12 bunches	4 0	6 0	Mignonette	12 bunches	3 0	6 0
Azalea	12 bunches	0 0	0 0	Pelargoniums, per 12	trusses	0 9	1 0
Bouvardias ..	per bunch	0 6	1 0	„ scarlet, 12 trusses		0 4	0 8
Camellias	12 bunches	0 0	0 0	Pæonies, various 12	bunches	0 0	0 0
Carnations ..	12 bunches	1 0	3 0	Ranunculus	12 bunches	0 0	0 0
„	12 bunches	3 0	6 0	Roses	12 bunches	2 0	9 0
Cbrysanthemums 12	bunches	0 0	0 0	„ (indoor), per	dozen	1 0	3 0
Cornflower	12 bunches	1 6	3 0	„ Tea	dozen	0 9	2 0
Cowslips	doz. bunches	0 0	0 0	„ red	dozen	1 0	2 0
Daffodils	12 bunches	0 0	0 0	„ Moss	12 bunches	6 0	12 0
Epiphyllum ..	doz. bunches	0 0	0 0	Primrose, Yellow,	dozen		
Eucharis	per dozen	2 6	6 0	„ dozen bunches ..		0 0	0 0
Gardenias	12 bunches	2 0	4 0	Pyretbrum	12 bunches	4 0	9 0
Hellebore	doz. bunches	0 0	0 0	Spiræa	12 bunches	5 6	1 0
Hyacinths, Roman,	12 bunches	0 0	0 0	Stephanotis	12 bunches	2 0	3 0
Iris	12 bunches	9 0	18 0	Sweet Peas	12 bunches	2 0	6 0
Lapageria, white,	12 bunches	0 0	0 0	Sweet Sultan	12 bunches	3 0	4 0
Lapageria, red ..	12 bunches	1 0	2 0	Tropæolum	12 bunches	1 0	3 0
Lilac	per bunch	0 0	0 0	Tuberose	12 bunches	0 6	1 0
Lilium candidum 12	bunches	9 0	15 0	Violets	12 bunches	0 0	0 0
„	12 blms.	0 4	0 9	„ Czar, Fr., ..	bunch	0 0	0 0
„ longidorm, 12	blms.	3 0	6 0				



GREEN CROPS FOR SPRING.

AN essential part of good practice in farming is to make timely provision for our wants in the future, especially in having an ample store of food for live stock produced upon the farm, which is thus self-supporting, and we avoid vexatious forced sales, and are able to use or dispose of the stock in the best way. Forced sales occur most frequently in March or April, and again in July and August. It is a common fault for farmers to become overstocked in autumn. No calculation is made of the exact quantity of food that will be required during winter and spring, nor is allowance made for the fact that growing animals will require more food in spring than they did in the preceding autumn. Yet the matter is a simple one, and is really only a trifling matter of detail to which due attention may easily be given.

The approach of harvest time reminds us that seed should be had in readiness for the sowing of green crops for use in spring. The first of such crops is *Trifolium incarnatum*, which with the late white variety should be sown upon the first corn stubbles that are cleared. No ploughing is required, but we like to clear off weeds and most of the stubble with harrows. A stubble foul with twitch or other perennial weeds is unsuitable for this *Trifolium*, but annual weeds, or in fact any which can be cleared either by harrows or by horse hoes, cannot be regarded as an obstacle to the sowing. We use from 25 to 30 lbs. of seed per acre in order to obtain a full plant. The seed must be covered well, or much of it is destroyed by birds. We have also sometimes lost many of the young plants from the attacks of slugs. If land can be spared it is always well to have a few acres to spare of this valuable early forage plant, for if not used green it makes excellent stover, especially for horses. Near large towns there should be no difficulty in selling it upon the land as green forage at 1s. a perch or £8 an acre, at which rate it should be profitable, especially as there is so little labour required in its cultivation. The crop is in perfection so early that the land can easily be got ready for a crop of Turnips, for which there must be a full dressing of manure.

Where winter Oats are grown the early harvesting of that crop renders the stubbles a suitable seed bed for *Trifolium incarnatum*, and it is after Wheat that we generally get in some stubble Turnips. This catch crop is so useful for lambs in March that we always try and get as many acres of it as the pressure of harvest work admits. Success with it is due so much to the weather that results cannot be depended upon with certainty. A few timely showers make all the difference between success and failure, for in moist warm soil seed-germination and growth is quick and sure. No furrows and ridges are required for stubble Turnips; ploughing, harrowing, and rolling sufficiently to get a fine seed bed, and immediate sowing of the seed being all that is necessary. If chemical manure is used, as it may be with advantage in favourable weather, it should be sown after the first turn with the harrows, so that it may not be buried deep in the soil. In sowing Turnips everything that is possible should be done to induce quick germination followed by strong growth. A fine seed bed; soil mellow, moist, rich, and clean, and new seed are the essentials to enable the plants to grow quickly out of the way of the fly. It will also help the growth if the soil between the rows is kept well stirred.

Late Drumhead Cabbage, drilled about the third week of the present month in rich soil, is a very useful late spring crop. In a hot dry summer preference is given to sowing in a seed bed where the seed can be watered regularly and

the plants transplanted during showery weather in autumn. The high nutritive value of cattle Cabbage renders it worthy of more general cultivation, and few crops yield such a weight per acre. The late Dr. Voelcker had a very high opinion of it. He said that "No kind of green food cultivated on a large scale in the field contains so much nutritious matter as Cabbage."

Of other green crops for spring Rye Grass was sown at the same time as Clover. Rye and winter Oats should both be sown in September, the Rye following spring Tares or winter Oats, and the Oats following any other corn crop which can be got off the land in time for early ploughing and cleaning. There need be no hesitation in sowing corn upon the same land year after year provided pure chemical manure is applied regularly so as to keep the soil well stored with fertility. To those who have not yet had winter Oats under cultivation we may explain that they may be fed off by sheep in a case of necessity, and afterwards afford a crop of corn. If possible we avoid feeding, as we like to get this crop harvested and out of the way before the other corn ripens.

WORK ON THE HOME FARM.

Drought and heat combine to render the season one of much care and anxiety to the heavy land farmer. On our big heavy land farm the Barley is sadly parched and weakened. Spring Oats are also suffering, and roots though a full plant make no appreciable progress. Winter Oats, Beans, and Wheat on the contrary are in thriving condition, Webb's Giant White Wheat being especially remarkable for its robust straw and large ears. The sowing of spring Oats on this farm was with us a matter of necessity, but we shall make strenuous efforts in future to sow only winter Oats, and so avoid all risk of harm from drought. The soil is kept well stirred between the rows of Mangolds and Swedes, and if only we are favoured with a few hours of rain we may do well yet. Upon all our other farms the crops are satisfactory, the combined effects of drains, deep cultivation, and good manure telling plainly that success follows such high farming. Root-thinning, hoeing, and haymaking has kept the men fully employed. Half a dozen of our extra men employed for the haymaking upon the home farm found the exercise of their functions as voters at the election of so arduous a nature as to require two days' hard drinking after recording their votes. When these free and independent members of the community at length thought well to come to the farm, we had so arranged matters as to be able to dispense with their services altogether. For this, and for every reason, we use as much machinery as possible for all work of which the results are liable to be seriously affected by the weather. Long days work has been the rule with us throughout the haymaking. The mowing machine has been going early and late, for we hold that settled weather is an incentive to exertion, full advantage being taken of it to save the hay, for if it change to wet weather before all is done we like to know that full advantage was taken of all the fine weather. Let harvest arrangements be seen to soon—machinery, waggons, rick yards, and everything affecting the work in good order, so that it may be done with dispatch. The very large quantity of Barley discoloured by rain last year led to a serious loss, which we shall do well to avoid in future. There is no doubt that self-binding reapers help to shorten the harvest very materially, and it was the farmers that used them last season who suffered least from broken weather. Due care should be taken to secure a stock of young pigs sufficiently forward in growth for turning out upon the stubbles after harvest, care being taken to avoid having any from districts having the taint of swine fever.

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude, 111 feet.

DATE.		9 A.M.					IN THE DAY.				Rain
1886. July.		Barometer at 32° and Sea Level	Hygrometer.		Direction of Wind.	Temp. of Soil at 1 foot.	Shade Temperature.		Radiation Temperature.		
			Dry.	Wet.			Max.	Min.	In sun.	On grass.	
		Inches.	deg.	deg.		deg.	deg.	deg.	deg.	deg.	In.
Sunday	4	30.310	75.2	64.7	N.W.	65.8	87.5	62.2	130.6	55.9	—
Monday	5	30.253	71.7	60.0	W.	65.1	83.3	58.9	125.4	52.1	—
Tuesday	6	30.142	73.3	61.7	E.	65.2	86.2	54.7	126.6	49.0	—
Wednesday	7	29.952	72.7	64.1	E.	65.6	84.8	58.7	124.9	51.8	—
Thursday	8	29.776	60.6	57.3	N.W.	65.9	71.6	59.3	115.3	54.2	—
Friday	9	29.999	60.0	53.3	N.	64.7	70.4	49.5	115.4	44.3	0.019
Saturday	10	30.175	58.7	55.0	S.W.	63.2	71.6	48.1	117.1	43.7	—
		30.087	67.5	59.4		64.3	79.3	55.9	122.5	50.1	0.019

REMARKS.

- 4th.—Fine summer day, and nearly cloudless.
 5th.—Cloudless, but not so hot.
 6th.—Hot, and very dry.
 7th.—Fine and hot morning, thunder clouds in N.E. in afternoon, cool evening.
 8th.—Cloudy, and cool throughout.
 9th.—Bright, but cool morning; cloudy, with showers, in afternoon.
 10th.—Cloudy early, clear and fine afternoon and evening.
 The week has been composed of two very dissimilar periods, the change occurring about 6 P.M. on Wednesday, when a sudden fall of temperature occurred. In spite, however, of the coolness of the last three days, the mean for the week is above the average. Almost rainless.—G. J. SYMONS.



COMING EVENTS

22	TH	5TH SUNDAY AFTER TRINITY. Royal Horticultural Society. Committees at 11 A.M. Carnation and [Picotee Shows.
23	F	
25	SUN	
26	M	
27	TU	
28	W	

EARLY EFFORTS AND LATER EXPERIENCES IN ROSE-GROWING.

[A paper read by Duncan Gilmour, jun., Esq., of Highbury, Sandygate, Sheffield, July 16th, at a meeting of the Walkley Amateur Floral and Horticultural Society.]

IT is now a good many years since I was first seized with a desire to grow Roses, and I began by planting a strip of land in a field adjoining my father's house at Sandygate. My first step was to purchase a little book, price 1s., by the great Rose-grower, Mr. Wm. Paul, of Waltham Cross, which little book contains much useful information for beginners. The soil was very poor—about a foot of light sandy loam, and below that yellow building sand and rachel. Rose-growers will admit that it was about the worst soil for the purpose that could be selected; added to that the field facing due south, and being situated on a hillside, what rain fell upon it did not remain long; added to that again, it was very much exposed to the south-westerly gales, which blow there pretty hard at times. Now, here were a good many disadvantages, the two greatest being, according to the books, bad soil and too much wind; the latter I feared quite as much as the former. One solitary advantage I had was that the ground was virgin soil, and would be likely to grow good Roses for a time at least.

I began with about five hundred half-standards, Hybrid Perpetuals mostly, in about one hundred varieties, planting them without manure, for two reasons—first, I had none; and secondly, I thought, as the soil was so porous and open, that I should prefer to keep the manure near the top. I may here say that later experience has proved to me that I was right there, in case of light soils at any rate. Following the advice in the book, I procured about two loads of cow manure quite fresh, because I could not get it in any other state, and this was wheeled on in heaps just before the snow and wet came on. It was turned once or twice during the winter: and in the early spring, although it was very rank and green, we boldly dug it in. Of course, like all other beginners, I did not half prune the plants, but the result was beyond my wildest hopes. Probably such Roses as Xavier Olibo and Prince Camille de Rohan came about the colour we wish to see Marie Baumann, while Marie herself would be about five degrees lighter than she ought to have been. But I knew no such distinctions at that time—"where ignorance was bliss 'twas folly to be wise;" and up to then I had seen no Roses so fresh, so bright, or so clean as mine. The results of this first season were found to be that it was almost impossible to have too much wind, and that if one has a clear atmosphere and plenty of fresh air that fine Roses may be grown even on a poor soil with plenty of manure.

The second season was much the same as the first; the treatment was the same except that we put on four or five loads of clay in the autumn, and dug it in in the spring. But whether it was that I was getting more critical and hard to please, or that the soil or the plants were deteriorating, I

cannot say, but I was not so well satisfied. At this time, too, I began to haunt the local flower shows, and the Roses there may have made me discontented with my own.

The third year the plants were much troubled with insect pests (another sign that things were not going all right). In the spring, just when the first leaves were making their appearance, I discovered that many of the plants had every leaf and bud eaten off. I watched them all day, and that being no use I got a dark lantern and resolved to watch them all night if necessary. Going out the first night about 10 P.M., to my surprise I found the stems and shoots literally alive with insects, which, on my touching the first plant, all fell to the ground and disappeared as if by magic. With the other plants I was more cautious, and managed to kill about 150 of the insects. In the course of a few evenings they were all cleared out. On examination I found that they were weevils or small beetles. I cannot understand why these weevils should attack the Roses for one season only, for I never had any trouble with them since, and they have not emigrated, as I sometimes see them strolling about.

Green fly, which rarely appears in quantity at Sandygate, began to bother me that season, and for some time I used to always carry a painter's brush in my pocket, with which, first laying the shoot in the palm of the hand, I lightly brushed off the insects. We never require brushes or anything else for that purpose now. Caterpillars seemed more plentiful too, and added to these the plants were getting old and feeble, and a good many of them died during the winter. I should have said before that the ground I had planted was intended for a permanent plantation, and the shrubs, which were at first very small, were gradually growing and sending their roots out here and there, and so getting possession of the manure which was put there for the Roses.

After this I launched out more boldly, and getting possession of a large piece of land without any trees or shrubs of any kind on it we laid it down with grass. On this grass I made beds to contain one dozen plants each, and in each bed only one variety was planted. Round the boundaries were placed shrubs to break the wind, but these were never allowed to grow so high as to shut out light or air. This plan of the beds I still carry out, but instead of one bed of one variety I place about four or six beds of the same kind together, using only the best and most free-blooming kinds for the purpose, and we find the effect is much better. For instance, what can be finer than a great mass of Baronne de Rothschild, or La France, or A. K. Williams, or Charles Lefebvre, or Merveille de Lyon, or Marquise de Castellane? all of which are excellent for the purpose, C. Lefebvre being the most unsuitable in consequence of its straggling growth. Of course I planted these beds with a lot of unsuitable varieties, and have made many changes, but the best bit of experience I have picked up yet in the case of Rose beds on a lawn is the necessity of planting few varieties and massing these few together. As we renew the plants or change the varieties in these beds the soil is renewed and manure added, and lately clay has been placed at the bottom to hold the moisture, while it has also been mixed with the soil composing the bed. Lime, Beeson's manure, night soil, sewage—in fact, anything that contains manure—is added at the proper time. Under this treatment the land should become better year by year and should give better results, and I think does so—in one particular I am sure of it—that is, in the foliage. For years the foliage was very poor and a bad colour; now we get grand leaves and plenty of them, and of a good healthy dark green. Most gardeners will know that without good leaves there can be no good flowers, and so when I say we get better leaves I think I am safe in saying we get better flowers also. The colour of the darker varieties is very different of later years too. Formerly Xavier Olibo, Louis Van Houtte, and similar varieties came the colour of Marie Baumann, and the lighter coloured ones were equally affected; now we can gather blooms as black as they are seen anywhere,

while the scarlet Roses come magnificent in colour and true to description.

Manure is good, and so is good soil, and these we can supply to our Roses if we will; but in this neighbourhood there is one thing we cannot buy, or beg, or borrow, or steal, or come at in any way—that is sunshine. The rich deep shade of the darker varieties, or the beautiful tint of the lighter Roses grown in the south and west of England—and I should not forget their wonderful depth too—can in my opinion never be equalled by us in this neighbourhood. I may be wrong in saying this—I hope I am; but I do not intend to be disheartened, and I do not intend to leave off trying to equal them until I have thoroughly proved it, and perhaps not then.

There is a theory, and I believe a true one, that plants part with a certain amount of useless matter; I do not refer to what is exhaled through the leaves, but something that passes out through the roots. This is part of the theory of rotation of crops, and this rotation business, as far as Roses are concerned, is carried out in most of the large nurseries. It is a fact further bearing on this subject, that when natural forests decay other forests spring up of a different kind of tree. I do not need to tell a society of gardeners that when land is apparently exhausted by repeated crops of one vegetable, that good crops of another kind may still be grown there; and probably you have all heard of land being Clover-sick. All this, in my opinion, goes to prove that the soil you wish to grow Roses on must be renewed now and again. This is easy in a large garden, where they are grown in rows like Cabbage or Kidney Beans, but is not the case where they are in permanent beds on lawns. In the latter case the only plan is to lift the plants, and after renewing the soil to replant them again.

Roses cannot have too much manure, that I am sure of; but do not please rush away with the idea that I advocate your getting a load of fresh stable manure and planting your Roses in that. No gardener would do this of course, but many would do what is nearly as bad, and that is to place fresh manure in such a position that the roots of the newly planted Roses would be in contact with it. I may as well give the reason why this is bad practice, and that is that fresh manure will rot the roots, and particularly if they happen to be dormant, as is the case when most Roses are planted. Half soil and half manure is not too rich for Roses. The few pot Tea Roses we grow are all potted in old sods and cow manure in equal parts, both well decayed. This is the first season they have been so treated, and they are far finer and healthier than I ever remember to have seen them.

Now, as to stocks. Being on light poor soil I was advised when I began to grow all on the Manetti, and have done so until lately, but I am now trying the seedling Briar; but while I am of opinion that it will answer, I cannot say that I have tested it sufficiently to pronounce an opinion. All I can say is that a severe winter kills off a great number of Manetti, while I am told that the Briar is very hardy and long-lived. I hope it is. Standards, I am pleased to say, are going out of fashion. I think a standard Rose tree in this neighbourhood is one of the most ridiculous things I know, generally more resembling a mopstick than anything else. There are very few varieties of Roses suitable for standards, and the average winters cut them back so, that it is useless to attempt to form a good head. In milder neighbourhoods I have seen them something in shape like an open umbrella, with probably twenty long branches, the whole one mass of bloom, the branches drooping gracefully on every side. There I confess I was delighted with them, but I never yet saw a properly grown standard Rose tree about Sheffield, and I do not believe I ever shall. If it is absolutely necessary to have standards, the best plan is to let a strong shoot grow up in the spring, when it is high enough top it, and you will soon have a standard.

Do not have too many varieties. Amateurs generally seem to prefer collecting together a lot of absurd names in

preference to having fewer sorts well proved, good growers, and bloomers, and—mark this—sorts that do well with them. Among all the Roses that are grown in all our gardens there is in each case one or two Roses that take the lead of all the others. They are more at home, they grow better, and they bloom better than other varieties. This is a theory of mine, and will, I think, be borne out by those who will use their power of observation. With me La France is No. 1, a long way ahead of all the others; so it ought to be, being a Hybrid Tea which should be at home in a hot dry burning soil in which Teas flourish. Baronne de Rothschild does splendidly with me too, probably only second to La France. On light soils I think the pink and white Roses will always come nearer perfection than the dark ones. I have nearly as many La France and Baronne de Rothschild as I have of all the other varieties put together. I would advise all growers to grow more of the Rose that does best with them. Which looks best—twelve splendid blooms of one variety or twelve varieties of inferior merit? I know which I prefer.

A word about pruning. Mr. Wm. Paul says it is the most important part of Rose culture, because without it there can be no result. He gives long directions, which a man might thoroughly master if he had about two years to devote to them—not less! No doubt in the case of standards it is necessary to study the matter, but not so in the case of dwarfs. My system of pruning is very simple; anybody can learn it in five minutes. I learnt it myself in that time. A very severe winter killed the whole of my plants down to the ground, and all the pruning I had to do that year was to cut away the dead wood. The following season the Roses came so fine—the wood was so strong and healthy—that ever afterwards I imitated Nature, and shall continue to do so until I come across someone who can teach me better.

One word more. My very latest experience of the Rose is that no other flower can be grown with so little trouble, and which gives such grand results.

CULTIVATION OF THE STRAWBERRY.

(Continued from page 37.)

WINTER TREATMENT.

BEYOND a light stirring of the surface to render it more permeable to air and rain, nothing is required. Digging between the rows with a spade or even with a fork deeply is positively injurious, but a close surface that will not allow the water to enter freely is equally, if not more, objectionable. A mulch of partially decayed manure is beneficial in enriching the soil and in assisting the plants to withstand severe weather, it being a well-known fact that plants not having the roots frozen or protected with a mulch will suffer less injury at the top than those with bare soil about them.

DURATION OF THE PLANTATIONS.

Soil and treatment influence the necessity or otherwise of renewal. On shallow and light soils they are best treated as annuals—viz, planted in July one year and removed after fruiting the next. It is the only way to get fine fruit, the cultivation requiring to be of the highest order in manuring, in mulching, and watering. In the second year they will give good fruits, quantities for preserving, and in the third it is so small as scarcely to be worth gathering. In medium loams the plants are fairly satisfactory up to the third year; but even in these the treatment must be liberal, and good surface dressing being given so as to encourage rooting from the base of the plants. Beyond the fourth year they are not profitable. Deep loams will support plants for a long time, but I have not found the results after the third season equal those preceding. In five, or at most six years, they should be off the ground. Strong loams, especially those on limestone formations, will continue in bearing and profitably over a very lengthened period. I have known them bring good crops up to ten and a dozen years, but then they were cultivated, not allowed to go wild—an entangled mass of runners. Five or six years is, however, as long as they ought to remain to have fruit of a size suited to modern tastes. Nearly everything depends on how the plants are managed. If kept free from runners and divested of the old leaves after the fruit is gathered, mulched, watered, and properly attended to, the beds or plantations may be allowed to remain much longer than plants that are neglected

from the commencement. One of the greatest evils is in taking runners from the one-year-old plants for forcing. The runners weaken the parents, so that it is best to take runners from plants especially set apart for the purpose. I have heard it remarked often that the plants in pots always afford the largest fruits, and no wonder, as they have no strain upon them. Treat them fairly, and they will give fruit of the largest size and finest quality.

SURFACE DRESSINGS.

These are much neglected. I do not allude to dressings of decayed manure. Road scrapings, sidings, ditch and pond cleanings are very useful, but everybody seems to have given up scouring ditches and plashing hedges. We see few compost heaps nowadays mixed with a sixth to a tenth of lime and turned over a time or two. What a change such effects in the herbage of grass land, and in none more than Strawberries. The Strawberry has its stems elongated more or less yearly through the growth being made at the top, and these stems, if stripped of the lower leaves, have a number of white points, which in a favourable medium form roots. Now, by giving a top-dressing of manure, leaf soil, or other material the stems will push roots from the part buried, and the plants will in consequence be much invigorated. A surface dressing over the plants, as well as the ground, of fresh loam or the compost indicated above, free of weeds, in March is of considerable benefit, and an old practice fast becoming obsolete since the idea has begun to obtain that labour is a superfluity in cultivation. Soil from the alleys or anywhere so as to cover the stems and allow of the embryo roots pushing has a considerable effect upon the health and continuance of the plantations.

VARIETIES.

There are now so many varieties that it is extremely difficult to select the best for every description of soil and situation, and classing them is impossible, through the varieties being so much intermingled by cross-fertilisation. For general purposes they are best divided into early, midseason, and late. Twenty-four of the best are:—

EARLY.—King of the Earlies (Laxton), Vicomtesse Hericart de Thury, Ne Plus Ultra (Browsbo), Sir Joseph Paxton (Bradley), Eclipse (Reeves), Duke of Edinburgh (Moffatt). Bothwell Bank Prolific Keens' Seedling or Sir Harry (Underhill), which is best on light soil.

MIDSEASON.—President (Green), Marshal MacMahon, Sir C. Napier (Smith), Marguerite (Lebreton), James Veitch, Dr. Hogg (Bradley), Seedling Eliza (Rivers), La Constante (De Jonghe), British Queen only does well in some soils.

LATE.—Crimson Queen (Myatt), Oxonian, Loxford Hall Seedling (Douglas), Filbert Pine (Myatt), on light soils a good substitute for British Queen, Frogmore Late Pine (Ingram), Anna de Rothschild, Eleanor (Myatt), Elton (Knight).

HAUTOIS.—Belle Bordelaise (Prolific Hautbois), Royal Hautbois (Rivers), Amateur (Bradley), stated to have a distinct smack of Hautbois is difficult to detect.

Three of the best Strawberries, one of each class.—King of the Earlies, President, and Oxonian. Six, two of each class.—King of the Earlies and Eclipse, President and Dr. Hogg, Oxonian and Elton. Nine, three of each class.—King of the Earlies, Eclipse, and Bothwell Bank Prolific; President, Sir C. Napier, and Dr. Hogg; Oxonian, Crimson Queen, and Elton. Twelve, four of each class.—King of the Earlies, Eclipse, Duke of Edinburgh, and Sir Joseph Paxton; President, Sir C. Napier, Dr. Hogg, and Marshal MacMahon; Oxonian, Crimson Queen, Eleanor, and Elton. Amy Robsart and Pauline are good early sorts. Of late Enchantress is large and fine. Bickon Pine is the only white Strawberry worth growing, and does well on light soils.

Perpetual or continuous bearing sorts are considered to have merits, but I think the one-full crop and-over are much the best for general purposes. Of this class is Early Prolific (Roden), Amateur (Bradley), and The Captain (Laxton). They are considered good for market purposes. The best market sorts are King of the Earlies, President, Sir C. Napier, and Oxonian. These are Mr. R. Gilbert's, of Burghley Gardens, selection, and I can vouch for their being first rate. All the varieties named in the selections are useful market sorts, having fine colour, firm flesh, and good quality. Vicomtesse Hericart de Thury is omitted from the selections, because it is considered superseded by King of the Earlies. It is, however, a capital sort and very productive, but it did not succeed with me on light soil.

The best on light soil I found to be Sir Harry, President, Sir Joseph Paxton, and Filbert Pine (Myatt's Seedling). Of varieties not included in the selection mention should be made of Sir John Falstaff, fine handsome fruit, very bright in colour, and a great cropper, it is a fine market sort. Unser Fritz, glossy crimson,

solid, and rich, often very large. Kitley's Goliath, hardy, vigorous, great cropper, fine market sort. Fillbasket is also a great cropper. Nimrod, large and fine, deep scarlet, often confounded with Eleanor. Souvenir de Kieff, after La Constante, better grower, great cropper, shining red skin, a taking sort of excellent flavour. Cockscomb, very large and very good quality. Early Crimson Pine, telling colour and heavy cropper.

Varieties with smaller compact foliage are—Mammoth, very large, prolific, and hardy. Lucas, large, capital quality, productive. Gipsy Queen, large and prolific. Carolina Superba, large, of the British Queen race, hardy, and excellent. Marguerite also has small foliage.

Varieties with very large fruit—Empress Eugenie, Marguerite, Mammoth, James Veitch, Eleanor, and Enchantress. Duc de Malakoff has very large fruit, very dull bad colour, but capital quality. It is very different from the variety grown so extensively about Liverpool under that name for forcing, which is a very fine form of Vicomtesse Hericart de Thury or Garibaldi. British Queen, Dr. Hogg, and Cockscomb are the very best of the large Strawberries.

For culinary or preserving purposes Deptford Pine, The Sultan, Newton's Seedling, Oxonian Eleanor, and Elton. Pioneer, Gipsy Queen, and Oscar may be mentioned as having nearly black fruit. Good packers are Oscar, Gipsy Queen, and The Countess. All the kinds in the selections have firm flesh and are good packers.

ALPINE STRAWBERRIES.

These are best raised from seed, which should be saved from the best plants, giving the most prolific crop and finest fruits. It may be sown so soon as ripe, or in July either in pans or a sheltered spot outside. Any good light soil will suit them, sowing in shallow drills about 3 inches apart and covering lightly with fine soil. If in pans, place in a frame; in any case keep them moist. The plants will appear within a month. Keep those in pans well up to the light; harden and prick them off about 3 inches apart outdoors; shading and keeping moist until established. Outdoor plants may be treated similarly. They may be transferred to their permanent quarters when they have made four to six leaves. They may be planted in rows a foot apart and the same distance asunder in the rows, every fifth row being left out. The plants should have a mulching of leaf soil before sharp weather sets in. They will fruit the following year. Seeds are, however, mostly sown in February or March under glass, pricking off and growing on in gentle heat, and hardening off so as to plant out early in June. The plants will give fruit in autumn. The runners should be kept off the seedlings, none being allowed to grow, only the first for stock if wanted. Mulchings of partially decayed leaves or manure are necessary, and very copious supplies of water in dry weather. They are very often grown on north borders with a view to affording a late supply of fruit. They are, however, best flavoured in the open. Plants grown in pots are fine for decoration, seedlings from a spring sowing fruiting until a late period in a cool house, but are best flavoured in gentle heat with a free circulation of air. There are only the red and white varieties, the variety of the ter—viz., Blanche d'Orleans, being larger and very prolific. Bush Alpine does not produce runners.

ENEMIES.

Snails and slugs are very troublesome in Strawberry plantations. There is no better remedy than dusting with quicklime in the early stages of growth in spring and after the crops are gathered. The best preventives are dressings of nitrate of soda, gas lime, soot and lime prior to putting in the plants. Millipedes are very troublesome in some soils. Where these pests abound some Potatoes cut in halves, and placed in the mulching about the plants before the fruit begins to ripen will attract them, and a stick being thrust in each bait they can readily be examined, the stocks serving as indicators, and the millipedes destroyed. The grubs of the spotted garden gnat (*Tipula maculosa*) are sometimes very destructive, cutting off the flower stalks close to the ground. Handpicking is the only remedy, the pest usually being ensconced in the soil near where it commits its depredations. There are also grubs or larvæ that feed on the roots. Ammoniacal liquor diluted with six times its bulk of water seems the only cure for them. Caterpillars sometimes eat the foliage, they are removed by handpicking and squeezing. The worst pest of all is mice. If the gardener is near where game is preserved, and cats and weasles are not allowed to live I pity him. Grass mice will eat all the best fruit—i.e., the seeds, collecting the fruit in heaps, nipping the fruit off. Have pitfall traps in winter, and in summer small steel spring traps, the table baited with crust or hard cheese. Rats are great devourers of Straw-

berries. Ferrets and terriers are the best for these. Insects do not trouble much, the cuckoo spit insect is sometimes a nuisance. Crushing the pests with the hand is the best cure, and sometimes aphides infest the trusses. A softsoap solution, 2 ozs. to the gallon syringed over the plants before they come into flower, will destroy them.

Strawberry blight or mildew is a consequence of drought. There is no remedy but forcible waterings, mulching, and plenty of moisture at the roots. A thorough rain generally clears it away.—G. ABBEY.

CHRYSANTHEMUMS AND THEIR CULTURE.

(Continued from page 37.)

FEEDING AND TOP-DRESSING.

FEEDING and top-dressing are two points in the cultivation of Chrysanthemums which are of the utmost importance. The term "feeding" means the application of stimulants at a time when the plants are supposed to have exhausted the greater part of the manurial matter in the soil. When the plants are potted in new soil they grow freely for a time if clear water only is given, and they assume a colour in the leaves natural to the variety; but after a time if nothing is applied to the roots but clear water the foliage changes to a sickly yellow, and the lower leaves fall. It is just at the time when the roots have taken full possession of the soil that feeding should commence. Many growers advise that stimulants be not applied until the flower buds are formed; but after having fully considered the matter I think this is a mistake, because in some cases the flower buds do not form till the middle and end of September, and sometimes later than that. From this stage to the time the plants are in bloom is much too short a space to allow them a chance of deriving much benefit from the application of artificial support. The plants ought to be fed long before the time arrives for the buds to form, so as they may be strong at that critical period. If the plants are not sufficiently fed that they may retain their former vigour, how can they be expected to form strong and healthy flower buds? Weakly plants never produce flower buds of the same quality as stronger plants of the same variety; and if the buds are not produced in proportion to the necessary qualities of each variety, how can the flowers be properly developed? When the plants are growing well do not let them deteriorate by lack of attention in this point, but keep them advancing; allow no check to take place, or a breakdown will assuredly occur when least expected. Feeding should commence as soon as the pots in which the plants are to flower are full of roots—that is to say, as soon as the roots have pushed through the new soil and are being entwined around the sides of the pot. When in this condition the roots appear to be searching for fresh food, and that is the best description I can give of the time to begin the use of stimulants. The time that the plants were potted, the size of the pots, and the kind of soil used, the manner in which potting was performed, and what varieties are grown, all tend to alter the time when feeding is required. No one can make a mistake by doing as I advise, for he can easily convince himself as to how the rooting process is going on by turning a few of the plants carefully out. The strongest growing varieties always make roots most quickly, and the more delicate growers most slowly; therefore select some of the medium-habited plants and judge from these the manner in which the remainder is progressing.

The best stimulants, and how to apply them, are the next considerations. Local circumstances, in some instances, must be taken into account, as well as the means at the disposal of the cultivator. Various kinds of liquid manures, such as the drainings from the cow houses and stables, are excellent. I prefer the former as being cooler than the latter. Where liquid manure cannot be had from tanks direct from the places named, a very good substitute may be had from a heap of manure by throwing clean water over it, allowing it to soak through the manure, and collect in a pit at the side of the heap. Sheep manure gathered fresh from the fields may be placed in a bag to prevent the manure dissolving and mixing with the water, which renders it too thick. Place the bag in a tank or tub of water, allow it to soak for twelve hours, when the water will be ready for use, and by moving the bag about in the water occasionally a regular supply may be maintained until the qualities of the manure are exhausted. Liquid manure made in the same way from deer droppings or cow manure, all make excellent stimulants for the plants. Soot is almost indispensable to the growth of these plants. Applied in a liquid form it soon produces a change in the colour of the foliage of pale-looking plants. Some place a quantity in a waterpot of water, stirring it to dissolve, then pour it on to the soil in the pots; but this method is wrong, as the sediment remaining on the top of the soil seals at once the passage

way for future watering. The correct method of using soot in a liquid form is to place as much as is required into a sack sufficiently close to prevent the soot being washed out, the water soaking through the soot within the bag becomes charged with the manurial properties. Water used in this manner may be given to the plants at every time they require watering, for a week after which time it is better to withhold soot water for three weeks, then give them another course of soot water. One bushel of soot in a bag will be ample in a tank holding 100 gallons of water along with other manures given at the same time.

It is difficult to define the quantity of manure to use for making liquids, as so much depends upon the requirements of the cultivator. A safer guide is to use the liquid made from animal manures about the colour of brown brandy. Guano finds favour with some growers; it is easily prepared, and its efficacy is undoubted. A 4-inch potful to thirty-six gallons of water is a safe quantity to use. Nitrate of soda applied at the rate of a half teaspoonful to a 10-inch pot, and watered in, has a remarkably quick effect on the foliage and growth of the plants. No doubt if used once or twice in a season it is beneficial; but given in excess of the quantity named it would be positively dangerous, tending, as it does, to force the growth too rapidly at the expense of solidity and maturity. Sulphate of ammonia in careful hands is an excellent manure, perhaps unequalled; but the per-centage of ammonia contained in the different samples varies so much that it is decidedly risky to use it. I have seen plants killed by one or two doses, given of course without judgment as to its safety; but, as before stated, when applied properly excellent results are obtained. Before using any the cultivator must be positive that his plants are thoroughly well rooted. The pots should be full of roots. The best way to apply it is as follows:—Dissolve one tablespoonful in four gallons of liquid manure and apply it to the plants once a week. The alteration in the colour of the leaves after its application can be quickly discerned if they were pale before. The main veins or arteries quickly assume a deep green, which rapidly spreads all over the leaf; the colour of the blooms is much improved also. The pinks, lilacs and darker shades are rendered much richer by the use of this manure. Some growers sprinkle the ammonia on the surface of the soil and water it in, but this is dangerous to the surface roots of the plants.

The only matter now remaining is to note the time it should be applied. The time it should commence I pointed out. It is not wise to give the plants the same kind of stimulant continually; it should be varied, using one sort for, say, a week, then make a change in favour of another. To the strongest growing varieties stimulants should be applied every time they require water, commencing the application in a weak state, increasing the strength gradually until the maximum is reached. Some growers advise that feeding be discontinued as soon as the bloom buds show colour, but in my opinion that is just the stage when assistance is required to develop the blooms. Continue to feed the plants until the blooms are three parts expanded. For the weaker-growing sorts possessing fewer roots than the more robust varieties feeding should continue until the flowers are in the same stage as before named, but the liquid must not be given quite so strong nor so often, occasionally giving clear water only.

Top-dressing means placing on to the surface of the soil something to encourage root action. Various kinds of materials find favour, such as bonemeal, turfy loam which has been previously well soaked in liquid manure, decomposed cow manure, fresh horse droppings, leaf soil, and dissolved bones. Where the soil in which the plants are growing is of a strong retentive nature a covering of half an inch thick of leaf soil and finely crushed bones, two parts of the former to one of the latter, may be used with advantage; but where the soil is inclined to be sandy two parts of turfy loam, with only the fibre retained, and that soaked as advised, to one of bones laid on three-quarters of an inch thick and pressed down firmly is excellent. If there was not sufficient space left at potting time to allow of this quantity being added, build up around the edge of the pot with thin pieces of turf to make space for the application of water after the top-dressing is laid on. This should be done when the roots appear on the surface of the soil after the final potting, which will be some time during August.—E. MOLYNEUX.

MADRESFIELD COURT GRAPE CRACKING.

My advice was recently requested concerning the cause of this Grape cracking. A friend brought me a few cracked berries, the finest fruit I have ever seen, just beginning to colour as usual. The advice I gave him was to provide free ventilation at front and top, the front to be left open a little all night, and to cover the roots with a shutter to keep them dry, most of the roots being outside. However, to completely satisfy him, I returned with him, and I will just note down a few further particulars which may prove of benefit to someone. The Vine is planted at the west

corner of a house inside, but most of the border is outside, the crop is fairly good for weight, and the top bunches are colouring well.

In every case the cracking taking place in the top berries of the bunches led me to suppose that it was the result of either early afternoon closing or want of air in the day, and on looking outside I found the foliage all up the centre of the Vine burnt very much, as if freshly done. I then discovered that this was only the second day of cracking, after a very heavy rain. I came away with the conviction that if the Vine is treated now according to instructions not a berry should crack. I was disappointed to see two of the finest bunches on one lateral the worse for cracking, as I find heavy-cropping suits this Vine the best; but these

many years, and was once thought that it might be employed to "effect that improvement in the worn-out garden Calceolarias which the Cape species of *Pelargonium* brought about in the case of the enfeebled florists' breed of the latter popular flower. If its properties can at all be brought to bear upon the domesticated Slipperwort, we may yet hope to see some of their acquired beauty of flower united with a vigorous constitution and good habit of growth." This hint does not seem to have produced any good results, though, no doubt, much might be done with this and other species if subjected to a well-considered system of hybridisation.



Fig. 10.—CALCEOLARIA TETRAGONA.

bunches being in the corner damp or steam gathers on them. Perhaps some grower may give his notes on the above. Feeding had been attended to at stoning time with lime, soot, and sheep dung.—STEPHEN CASTLE, *West Lynn*.

CALCEOLARIA TETRAGONA.

THE Peruvian and Chilian Calceolarias comprise several ornamental species that are much neglected as garden plants, although the ordinary type of florists' Calceolarias and those employed for bedding still maintain their position. The shrubby evergreen species are especially worthy of farther notice, yet only in a few private gardens do we see them represented. The late Mr. Joad had a small collection in his Wimbledon garden, and they often attracted the admiration of plant lovers who visited that interesting establishment. In some of the botanic gardens they also have some space devoted to them, but outside those gardens they are comparatively scarce. One of these that is well worth more attention is *Calceolaria tetragona* (fig 10), which has been known for

The flowers are bright pale yellow and are borne freely in loose corymbs. The plant can be readily increased by cuttings in a greenhouse or other cool structure.

NORRIS GREEN.

NORRIS GREEN, the Lancashire seat of Mrs. Heywood, is one of the best gardening establishments in the north of England. Neatness, order, and good culture prevail. Some time since the gardener, Mr. Bardney, entered into a controversy in the pages of the Journal as to the advisability of lifting Peach trees annually, and I must say that healthier or better balanced trees I have never seen, and this was the unanimous opinion of other practical gardeners present. In these gardens lime has played an important part in causing productiveness, and certainly healthier or better produce could not be desired. The soil is of a boggy or peaty nature, and lime is not used in excess, as the crops and fruit trees testify. On the open walls are healthy and well trained trees of Pears and Morello Cherries, and in the open quarters there are good bush-shaped Apple trees, and around the quarters are healthy espalier-trained Pear trees carrying what appears to be good crops of fruit. On a

south border is a good breadth of Pea American Wonder, one part of which has been dressed with fine bone flour, and it can be seen to an inch where it has been applied. In the winter garden are several handsome shaped Camellias in excellent health. These are planted in the large centre beds, and have a very imposing appearance. The side stages are occupied with decorative plants, of which large numbers are required, principally during the winter and spring months. In this house a large plant of the old *Luculia gratissima* is also noticeable. The Rose house is well filled with healthy plants, which are quite free from mildew. The plants are well syringed with the mixture recommended by Mr. Bardney. A collection of Orchids is being formed. In the cool house are numbers of healthy plants of *Odontoglossum Alexandrae*, *O. Pescatorei*, *O. Rossi majus*, and good plants of *Disa grandiflora* advancing into bloom. In another house are healthy pieces of *Dendrobium crassinode*, *D. Wardianum*, *Laelia purpurata*, *Cattleya Mossiae*, *C. Trianae*, *Cypripedium Spicerianum*, *C. Lawrenceanum*, &c. The stove has quite a tropical appearance, being filled with healthy and well pitched plants of *Nepenthes*, several *Dracæna Goldieana*, of which Mr. Bardney speaks very highly, *D. Lindenii*, *D. gracilis*, *Phalenopsis*, &c. The back wall of this house is covered with *Selaginella umbrosa*, which has a pleasing appearance, as well as being useful for cutting purposes. Another house is occupied with Cucumbers and Melons, which also does duty for a propagating house. A large house is filled with Azaleas. In the vineries good crops of Grapes are hanging. These houses also do duty for plant-growing, in one of which were several good useful plants of *Imantophyllums*, which Mr. Bardney finds useful for winter flowering. Each plant is grown singly in a 6-inch pot, and is shaken out and repotted into the same sized pots annually. Heaths for winter flowering are largely grown, and I also noticed some healthy *Chrysanthemums*. Visitors to Norris Green could not fail to be impressed with the feeling that Mrs. Heywood is a great patron of horticulture, and that in Mr. Bardney she has a worthy gardener.—A. Y.

THOUGHTS ON CURRENT TOPICS.

THE last topic touched on in these random jottings was the then pending, but now passed, yet not forgotten, provincial Show of the R.H.S. What I thought of the Show can be of small moment, and all I will say is that it was far too great and too good for the occasion—a grand Show, but unfortunate. Whether it was the oppressively hot weather, the unwelcome “election,” the greater temptations of the Shipperies, a want of adequate publicity, faulty management, a lack of local interest in horticulture, or a combination of all these circumstances I cannot tell; but this I know, the attendance of visitors was of the most meagre description, and the financial loss incurred by the venture must of necessity be considerable.

IT is hard for those who labour, not for gain, but in the promotion of an object good in itself, and believed to be fraught with good to others, to find their labour so ill requited. Almost everyone believed the directorate of the Society took a right step in going to the provinces, and there was a consensus of opinion that they had fixed on the right place if not the best time for holding the Show. The fixture, however, proved a mistake, and it is to be feared the experience gained has been rather dearly purchased.

IT was thought, I believe, by not a few, and especially local promoters of the undertaking, that the “Shipperies” would prove a feeder to the horticultural exhibition. It seems to have been exactly the reverse, and proved a most powerful competitor. As the Colonial Exhibition in London overshadows everything else provided for the delectation of the public, so does the great affair at Liverpool. It is a question of the fat eating up the lean kine in both cities.

PERSONS are not infrequently taunted with being wise after events. But they ought to be wiser than before, or what is the use of experience? and in all probability the tents of the Royal Horticultural Society will not soon be pitched again in any place where there is a greater exhibition or centre of attraction established than the resources of horticulture can provide. Ascendancy appears necessary to command success.

THEN, again, the lesson is enforced that while it may be philanthropic to educate the public in the pursuit of horticulture by a gigantic effort, it is costly. The masses and classes, which are insupportable for ordinary purposes, must be first educated in the only sure way—by degrees, locally, before they can feel sufficient interest in and appreciate that which is presented to them in its higher forms. The public must “want” a great national horticultural show before they will flock to one when it is provided. A certain amount of local enthusiasm must be manifested and zealous local leaders secured before a decision is arrived at. It is not all towns that have such direct and active workers in a cause of this kind as Manchester and Birmingham in their Bruce Findlays and Baigers; or at least they are not developed. And, further, local and capable officials are the best judges of the time at which exhibitions should be held, and such successes would not be won at Manchester, York, Shrewsbury, Newcastle and other places, if the best possible dates were not selected. Such are a few “thoughts” to which the great Show has given birth; and it is earnestly hoped that the next “provincial” will be financially successful.

I WENT to see the boiler trials at Liverpool, and did not think them

very conclusive. The preparations must have involved great cost; that, however, is a competitor's question. The trials were, perhaps, as interesting to gardeners as anything on the ground, but as an old stoker I could see very well that this work was not equally well done. The man who smashed his coke and threw it on in small particles and thin layers, so as not to check the flame, heated the water quicker than he could possibly have done had he thrown it into the furnace in large lumps and great heaps. In this matter stoking must have, and I believe at Liverpool did have, an important influence on the results, though I do not suggest that anyone lost a prize by bad stoking alone, though I do think that at least one boiler would have been nearer winning with different stoking. Then there is this to be remembered, that only a few boilers were tried, and it is a question if some others are not fully equal to any that were in operation. I shall be curious to see how the judges arrive at their decisions, for it is certain that some of the pipes from the same boiler and on the same level were hotter than others, and thermometers were not inserted in all.

I HAVE not hitherto referred to the subject of ammonia in vineries and plant houses that has been introduced as if it were a new notion. It has been brought before the readers of the Journal repeatedly, and even more prominently than recently. I wrote on the subject twenty years ago, and was a follower of others. I was under the impression that many of our most successful cultivators are fully alive to the importance of damping their vineries with liquid manure, and many of them I know do so with excellent results. The practice of introducing fermenting materials in vineries for inciting a strong and even “break” is also a very old custom. I can remember it for forty years. It is not all growers who can adopt it, but all who can should do so, for it is undeniably good. When adopting that practice I have never had occasion to syringe the rods, and with an ammonia-impregnated atmosphere afterwards it was not necessary to syringe the foliage for the prevention or destruction of insects.

THAT the leaves of Vines absorb both ammonia and carbonic acid gas is, I think, beyond question. It is certain they absorb something that is evolved by liquid manure, and are either benefited or injured according to circumstances. I have seen striking examples of both good and evil result from the practice in question. The best time to use liquid manure in vineries is in the evening. Leaves transpire in the day, absorb at night. Vines have been very seriously injured by the excessive use of ammonia in the daytime. Night, I repeat, is the time for the application; quite a pungent smell in the house then does good, and is perfectly safe with early morning ventilation, this being an important condition—the safety valve, in fact, of the whole process.

ROSES have naturally been in the ascendant during the past few weeks. No new and striking varieties appear to have been forthcoming. Amongst the lights Lady Mary Fitzwilliam seems to have held her own; and amongst the darks A. K. Williams has not diminished in numbers nor brilliancy. Both these Roses were last year referred to as “bad growers.” This year the plants are reported as growing freely. Is it not the old case over again of express propagation impairing the constitution of the plants, for a time at least, and their recovery under a better system of propagation—that is, plants raised from better wood and well fed and developed buds?

PROFESSIONAL gardeners if not too “bumpions” may often profit by a hint from earnest amateurs. The last hint I have gathered was dropped in a casual manner by a self-taught rosarian, who has begun to take prizes at the “National” Shows. Speaking of the requirements of different Roses, he remarked he had found out one thing—namely, that light Roses as a rule like light soil, and dark Roses stronger land, and he intends preparing his beds accordingly. He contemplates having one bed of *Her Majesty*, which Rose he has bought and is propagating freely. Other growers are presumably doing the same, so that at last there seems a probability of the hidden beauty “coming out” in England, the “almighty dollar” having nearly spent its force in keeping her in obscurity in her native land.

MR. ABBEY is evidently a very ingenious man, but he sometimes misses the mark. His comparison of pulling up twitch “every time it got large enough to lay hold of,” to kill it, does not apply to cutting the young growths of Asparagus when they appear above ground, for the simple reason that these, when cut at all, are only cut once, and not repeatedly “as they can be got hold of.” The question is, whether after this first cutting, as soon as they are a few inches high, say early in May, other growths do not spring from the crowns and get even stronger the same season than the originals would if they were left to grow unchecked. That is the question, and it is not to be disposed of in the light trapping manner adopted by your correspondent on page 42. Asparagus beds from which the young growth or “sprue” has been cut in the manner suggested for thirty years still produce splendid heads, so that the cutting must kill very slowly. Some good growers for market believe that the practice alluded to is the best, and when my jaunty critic has had another “cut in” (I think he had better settle this matter before demolishing me on the fruit bud question) I may, perhaps, record a little experiment bearing on the subject now under notice, and which tends to show that the good old-fashioned vegetable growers of the past were not so far wrong as some modern scientists appear to imagine. Try again, Mr. Abbey, and you will oblige.—A THINKER.



MESSRS. J. VEITCH & SONS have now an extensive display of CARNATIONS and PICOTEEs in their Chelsea Nursery, and an excellent opportunity is afforded for amateurs to compare the numerous varieties and make selections according to their taste or requirements. Carnations generally are promising well, and we hear that the National Society's Show at South Kensington next week is likely to be a good one.

— WE are informed that Messrs. Sutton & Sons, Reading, and Messrs. Webb & Sons, Stourbridge, had extensive and magnificent STANDS OF FLOWERS, SEEDS, AND ROOTS at the Royal Agricultural Society's Norwich Show, and that Mr. Sharman, manager to Messrs. James Carter & Co., presented to H.R.H. the Princess of Wales a handsome bouquet of Roses from their Rose grounds in Kent.

— SOME attention was drawn to *STATICE SUWOROWI* a year or two since, but there was a general impression that the plant was difficult of cultivation and that its merits had been overrated. Good evidence is afforded at Kew that both these opinions are unfounded, for a little group of plants in the Cape house are extremely healthy and beautifully flowered. The bright rose-coloured flowers are small individually, but very numerous and clustered densely round the cylindrical branches of the panicles, which are frequently 2 feet or more in length. The plants are grown in small pots in a cold frame until the flowers are showing when they are removed to a corner of the house, where they remain attractive for some time.

— AT the East Gloucestershire Rose Society's Show, held at Moreton-in-the-Marsh, and noted more fully in another column, the two SILVER MEDALS of the NATIONAL ROSE SOCIETY for the best H.P. and the best Tea or Noisette bloom, exhibited in the classes open to amateurs of All England, were awarded to W. J. Grant, Esq., Ledbury, and T. W. Girdlestone, Esq., Sunningdale. The blooms selected for these honours being *Horace Vernet* for the best H.P. from the Ledbury stand, and *Maréchal Niel* from that of the latter. At the same Show the special prize of £10, given by A. B. Mitford, Esq., C.B., for the best stand of Roses exhibited, provided a task of some difficulty for the Judges, who finally awarded a division of the prize between the Cranston Co. and T. W. Girdlestone, Esq., to both of whom a prize of £5 had been previously awarded in their respective classes.

— IN the north-west territory of Canada a Mr. W. H. Hooper of Brandon is giving some attention to the exportation of BUFFALO BERRIES (*SHEPHERDIA ARGENTEA*) for pickling or other purposes. Some have already been sent to London pickle merchants as samples, and it is said the supply is abundant, as the plant grows luxuriantly on the prairies, where the Indians have long used the berries. The fruit grows in clusters the size of a Red Currant, is more or less acid, and of somewhat pleasant flavour. The plant is also known in the United States as Rabbit Berry and Beef Suet Tree, and at one time an attempt was made to cultivate it in Britain for the sake of its fruit, but the results were not satisfactory.

— THE ANNUAL FLOWER SHOW held in connection with the Aldenham Street Sunday Schools, St. Pancras, was held recently, and was attended by the Earl and Countess of Iddesleigh. The former, in addressing the youthful competitors, spoke of the humanising influence engendered by the love of plants, pointing out that the common passion for flowers tended to bring all classes together. There was a great deal to be learned, he thought, from the mere circumstance of contact with flowers, and it was a loss, greater than some people supposed, for the people of our great cities to be cut off to such an extent as they were from this happy association with the fair things of Nature. He could well remember when it was once thought a strange thing—hardly a right thing, indeed—to plant flowers in our West End parks. It was said that the people would not appreciate them, and would even spoil them, but all experience had shown that the people had worked no harm to the flowers, while the flowers had done a great deal of good to the people.

— MR. J. W. MALLENDER sends the following SUMMARY OF

METEOROLOGICAL OBSERVATIONS AT HODSOCK PRIORY, WORKSOP, NOTTS, May, 1886.—Mean temperature of month, 49° 6'; maximum on the 5th, 75° 1'; minimum on the 2nd, 28° 3'. Maximum in the sun on the 3rd, 127° 3'; minimum on the grass on the 2nd, 22° 9'. Mean temperature of the air at 9 A.M., 50° 9'; mean temperature of the soil 1 foot deep, 50° 3'. Number of nights below 32°, in shade two, on grass five. Total duration of sunshine in month, 106·5 hours, or 22 per cent. of possible duration. We had ten sunless days. Total rainfall, 6·15 inches. Rain fell on twenty-three days. Maximum fall in twenty-four hours, on the 13th 2·02 inches, and 1·31 inch on the 12th, causing very high floods, doing serious damage to growing crop on low land, and starved to death scores of swallows. Average velocity of wind, 9·7 miles per hour; exceeded 400 miles on four days, and fell short of 100 miles on two days. June, 1886.—Mean temperature of the month, 54° 9'; maximum on the 29th, 75° 1'; minimum on the 4th, 35° 0'. Maximum in the sun on the 30th, 134° 5'; minimum on the grass on the 4th, 31° 5'. Mean temperature of the air at 9 A.M., 56° 0'; mean temperature of the soil 1 foot deep, 55° 3'. Number of nights below 32°, in shade none, on grass one. Total duration of sunshine in month, 1·30 hours, or 26 per cent. of possible duration. We had four sunless days. Total rainfall, 0·74 inch. Maximum fall in twenty-four hours on the 1st, 0·37 inch. Rain fell on eight days. Average velocity of wind, 8·4 miles per hour; exceeded 400 miles on three days, fell short of 100 miles on ten days. Colder and less rain than any of the last ten years; less sunshine than any of the last five years.

— MESSRS. W. PAUL & SON, Waltham Cross, send us a QUARTETTE OF BEAUTIFUL NEW ROSES, which afford most satisfactory proof of the success that has attended the efforts of this firm to obtain novelties of sterling merit. Most notable amongst them is *Grand Mogul*, which was certificated at the last meeting of the Royal Horticultural Society, and which gives ample promise of taking a prominent position amongst dark Hybrid Perpetuals both for exhibition and as a garden Rose. It attracted some attention at the National Rose Society's Metropolitan Show, but was not then quite at its best, as shown subsequently; it was, however, in capital form, and the blooms now before us fully confirm the good opinion we then formed of it. The fact that it is a seedling from A. K. Williams would be sufficient to recommend it to many rosarians; but while resembling that variety in form, it is widely different in colour, being a rich dark scarlet maroon shaded with crimson, of good substance, and much stronger and more reliable in habit. *Florence Paul* is another good H.P. of fine substance, full, and well built; colour a warm crimson scarlet. *Lady of the Lake* is a full pink H.P. Rose, the petals light on the under surface, very fragrant, and of vigorous habit. *Silver Queen* is a floriferous pale pink delicately tinted variety, very pretty when half expanded, and likely to be a useful garden variety. These are only a few of the many fine Roses raised at Waltham Cross, and of which a remarkable display was provided at Kensington recently.

ORCHID NOMENCLATURE.

WHAT IS KEW ABOUT?

ON reading the article on page 35 last week, the question that came involuntarily to my mind was this—What is Kew about?

Our position as a nation appears to be this: We grow more Orchids and grow them better than any other nation does, we expend more money on specimens and varieties, introduce the greatest number of plants from abroad, and raise more from seed at home, yet we appear to have no person to whom we can appeal to determine their distinctness or merits, describe them accurately, and name them authoritatively in this country. Is not that sufficiently humiliating?

A greater number of new species or varieties flower for the first time in England than in any other kingdom in Europe. They are obtained at great cost, tended with great care, watched with great anxiety, and as soon as flowers of supposed new varieties expand they are sent out of the country and kept out of it, so that a splendid foreign museum is being formed at the expense of British orchidists. No one will begrudge Professor Reichenbach his possessions; he has fairly won them by his zeal, industry, and ability. All Europe is indebted to him, but that is not a sufficient reason for the position in which we are placed. One would have thought that endeavour would have been made long ago in our great national garden to master the mysteries pertaining to the subject in question. The researches of the famed professor may not always be readily accessible to British growers. The great work "*Reichenbachia*," probably will become the medium through which his communications will reach the world, and it is not unreasonable that it should be since it is presented in three languages; but not one Orchid grower in fifty can have this work at his elbow, and I think with all our wealth and enterprise we ought to have some home authority on a question of this importance, and with which we are so

closely identified, capable of settling disputed points; and, again, I ask, What is Kew about?

Surely with all their resources the authorities there might have educated themselves ere this, or some official should be encouraged to do so. Is nothing being done anywhere or by anyone? It is true there has been a conference, but it appears to have come to nothing. I was not there, but heard it was "just a jumble." It seems as if everybody wanted something done, and no one knew exactly what. So far as I can learn no plan was formulated, no basis of action decided on, but everything was left open, and any persons could "chop in" according to fancy, or nurse their little schemes to their heart's content, or discontent, for there appears to have been as much of this as the other, as I heard of no one being satisfied. The whole thing seems to have been very much of a farce.

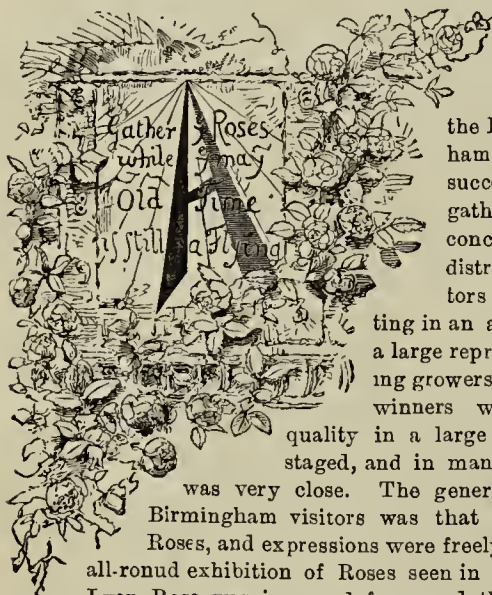
If there is any one place in England to which we have a right to look for light on a subject on which we appear so much in the dark, it is Kew. It is supported by the country for the benefit of the country, and I am one of the many who think that everything that is ascertained in the establishment that is of interest to the horticultural community should be made known in the widest possible manner in the shape of reports issued periodically for insertion in all the gardening papers.

There must be a great amount of knowledge locked up, so to say, at Kew, and amongst this much about Orchids, for it will be conceded that very little is given to the world. What do others say?—A TAXPAYER.

It appears that the rather perplexing subject of Orchid nomenclature is still under consideration by the Committee appointed for the purpose, and if this is so it is somewhat strange that the Floral Committee of the Royal Horticultural Society should take the alteration of names into their own hands, pending an authoritative decision. At the last meeting at South Kensington an *Oncidium* was exhibited under the name of *O. macranthum* Southgatei which was certificated, the name being altered by the Committee to "Southgate's Variety." An *Odontoglossum crispum* variety was also certificated under the name of Mrs. C. Dorman. On the other hand, another variety of *O. crispum* was certificated as *Hrubbyanum*, and a vote of thanks was accorded for an *Odontoglossum vexillarium* named *Hollingtoni*. There is a very strange inconsistency in this naming, and if the Committee thought fit to alter the names to popular designations in one case why were they allowed to remain in the botanical form in the others? I think we have a right to expect some explanation of this course, and in the absence of a decision on the part of the Nomenclature Committee, I fail to recognise the right of the Floral Committee to alter the names of plants brought before them.—AN ORCHID GROWER.

ROSE SHOWS.

THE NATIONAL ROSE SOCIETY.—JULY 15TH.



NOTHER provincial Exhibition has passed away, and the 1886 meeting at the Botanical Gardens, Birmingham, must be written down as a success so far as the Roses and gathering of Rose-growers were concerned. Heavy rains in some districts prevented some exhibitors who had entered from putting in an appearance. Still, there was a large representative gathering of leading growers, as our report of the prize-winners will show, and there was quality in a large proportion of the blooms staged, and in many instances the competition was very close. The general impression amongst the Birmingham visitors was that it was a grand display of Roses, and expressions were freely made that it was the best all-round exhibition of Roses seen in Birmingham. Merveille de Lyon Rose was in grand form, and the stands of twelve blooms were an attractive feature. The Tea Roses also were fine, such as we rarely see in the midlands, and some Roses, such as A. K. Williams, Ulrich Brunner, Mdlle. Marie Verdier, and others, were in splendid form everywhere. Amongst the Teas Madame de Watteville and Madame Cusin were written down in notebooks frequently, and no wonder, for both are great acquisitions in new colours.

The executive of the Botanical Society did all they could to make effective arrangements, and Mr. W. B. Latham must be thanked for what he did to secure success. The large glass exhibition building was crowded with exhibits, and the day was fortunately cool and moderately cloudy. There was a capital attendance, but as the subscribers to the gardens and their families are admitted free, and the expenses of the Botanical Society in various ways, including a bonus of £100 to the National Rose Society, it will entail a loss of quite £100, as the receipts for the one day did not exceed £50.

Division A (nurserymen) for seventy-two trusses, the Cranston Nursery Company, Limited, were placed first, their best blooms being Abel Carrière,

Mrs. Baker, Mrs. Jowitt, Pride of Waltham, Mdlle. S. Rodonanche very fine, Henri Ledechanx, President Senelar fine, Ulrich Brunner, Prince Arthur, Princess Charlotte de la Tremouille, John Stuart Mill, Merveille de Lyon, and Duchesse de Morny. Mr. B. R. Cant was second with smaller blooms, but good also. Third Mr. Frank Cant, Colchester; fourth Messrs. Paul and Son, Cheshunt, and then there was one other box staged. In class 2, for thirty-six, three trusses of each, there were five exhibits. First Mr. B. R. Cant, his best being Reynolds Hole, Niphetos, Ulrich Brunner, François Louvat, Prince Arthur, A. K. Williams, Souvenir d'Elise, Countess of Oxford, Duke of Edinburgh, Dr. Sewell, Madame Gabriel Luizet, Duke of Wellington, Alfred Colomb, Mons. Noman, Souvenir d'un Ami, Comtesse de Nadaillac, Louis Van Houtte, Mdlle. Marie Verdier, Madame Hippolyte Jamain, Charles Lefebvre, Merveille de Lyon, and Teas Madame de Watteville and Madame Cusin. This was a very fine stand of clean bright flowers. Second Mr. Frank Cant; third Messrs. Paul & Son; fourth Mr. C. Turner, Slough.

In class 3, eighteen Teas and Noisettes, single trusses, there were five exhibitors, and this class was well represented and much admired. First, Mr. Frank Cant, with very fine blooms, consisting of Madame Willermoz, Catherine Mermet, La Boule d'Or, Madame Lambard, Niphetos, Souvenir d'Elise, Comtesse de Nadaillac, Madame Margottin, Souvenir d'un Ami, Maréchal Niel, Devonensis, Madame Caroline Kuster, Marie Van Houtte, Madame Welche, Madame Bravy, Madame Cusin, Madame Angèle Jacquier, and Innocente Pirola. Second, Mr. George Prince, Oxford, Catherine Mermet, Madame Cusin, Francisca Kruger, Marie Van Houtte, Madame Lambard, and Marcellin Rhoda were all very fine. Third, Mr. B. R. Cant.

In class 4, thirty-six distinct Roses, single trusses, there were seven exhibitors. First, Messrs. Harkness & Son, nurserymen, Bedale, with back row—Etienne Lamy, Merveille de Lyon, no name, Lady Mary Fitzwilliam, François Michelin, Charles Darwin, Marie Rady, Marie Verdier, Charles Lefebvre, Madame Hippolyte Jamain, E. Y. Teas, Ulrich Brunner. Second row—Souvenir de Paul Neyron, Le Havre, Tea Jean Ducher, Louis Van Houtte, Tea Catherine Mermet, Alfred Colomb, Madame Hippolyte Jamain (Query.—I have it so in my notes, but in the hurry of taking them I did not notice the repeat) Pierre Notting, Elie Morel, Beauty of Waltham, Maréchal Niel, Prince Arthur. Front row—Duke of Teck, Captain Christy, Avocat Duvivier, Tea Souvenir d'un Ami, Horace Vernet, Countess of Rosebery, Duke of Edinburgh, Mons. Alfred Dumesnil, Lord Macaulay, La France, Dupuy Jamain, and Princess Beatrice. Second Messrs. J. Burrell and Son, nurserymen, Cambridge, with Reynolds Hole, Victor Verdier, Etienne Levot, Duchesse de Morny, and Madame Clemence Joigneaux all very fine blooms. Third, Messrs. John Jefferies & Son, nurserymen, Cirencester. Fourth, Mr. T. Mattock, Headingham, Oxford. In class 5, for eighteen distinct trebles, there were six lots staged. First, Messrs. John Jefferies & Son, with a fine stand of blooms—viz., Countess of Oxford, Dr. Andry, Baroness Rothschild, Beauty of Waltham, Merveille de Lyon, Ulrich Brunner, Queen of Queens, Louis Van Houtte, Madame Gabriel Luizet. Second row—Alfred Colomb, Marie Verdier, Rosieriste Jacobs, Marguerite de St. Amand, Marie Baumann, Lady Mary Fitzwilliam, A. K. Williams, La France, and Ferdinand de L'sseps. Second, Messrs. G. Cooling & Son, Bath, with a smaller but good lot. Third, Messrs. Harkness & Son. Class 6, twelve Teas or Noisettes single trusses, brought out five exhibitors. Mr. J. Mattock was placed first with Jean Ducher, Hippolyte Jamain, David Pradel, Innocente Pirola, Souvenir d'Elise Vardon, Madame de Watteville. Front row—Maréchal Niel, Souvenir d'un Ami, Comtesse de Nadaillac, Cornelia Koch, Catherine Mermet, and Marie Van Houtte. Second, Messrs. Harkness & Son; third, Messrs. G. Cooling & Son.

The following are the amateurs' classes. Class 7, thirty-six distinct, single trusses. Five exhibitors. First, The Rev. J. H. Pemberton, Havering, Romford, with a very fine lot of blooms—viz., Comte Raimbaud, Madame Charles Wood, Alfred Colomb, Madame Eugène Verdier, Marie Baumann, Ulrich Brunner, Marquise de Castellane, Madame Charles Crapelet, Alphonse Soupert, Xavier Olibo, Niphetos, Countess of Oxford. Second row—Mdlle. Eugénie Verdier, Mdlle. Victor Verdier, Madame Gabriel Luizet, Charles Lefebvre, Merveille de Lyon, Auguste Rigotard, Pierre Notting, Belle Lyonnaise, A. K. Williams, Baroness Rothschild, Horace Vernet, François Michelin. Front row—Mdlle. Annie Wood, Madame Bravy, Abel Carrière, Tea Comtesse de Nadaillac, Comtesse de Camondo, Souvenir d'Elise Vardon, and others. Second, Mr. T. B. Hall, Rock Ferry, Birkenhead, Ulrich Brunner, Beauty of Waltham, Etienne Levot, and Etoile de Lyon being very fine. Third, T. W. Girdlestone, Esq., Snnningdale, with an excellent stand; and fourth, Mr. W. J. Grant, Hope End Farm, Ledbury, with exceptionally good blooms. The exhibits in this class were all fine.

In class 8, twelve varieties, three blooms of each, four exhibitors, first Mr. W. J. Grant with a very fine stand—viz., Marie Verdier, Alfred Colomb, Baroness Rothschild, Horace Vernet, Merveille de Lyon. Marie Banmann. Front row—A. K. Williams, Souvenir d'un Ami, Louis Van Houtte, Marie Van Houtte, Marie Rady, and Abel Carrière. Second, Mr. T. B. Hall, with very fine blooms, especially Marie Verdier, A. K. Williams, Louis Van Houtte, Captain Christy, Merveille de Lyon, and Etienne Levot. Third, Rev. J. H. Pemberton. Class 9, twelve Teas or Noisettes, single trusses, first Mr. T. B. Hall, with a very fine stand of Madame Willermoz, Souvenir d'un Ami, Alba Rosea, Madame Cusin. Second row—Comtesse de Nadaillac, Hon. Edith Giffard, very fine; Jean Ducher, Etoile de Lyon. Third row—Madame Van Houtte, Madame Lambard, Madame Welche, and Catherine Mermet. Second, the Rev. E. G. Kiug, D.D., Madingley Vicarage, Cambridge, who had a grand bloom of Souvenir d'Elise Vardon. Third, the Rev. J. H. Pemberton. There were two other boxes staged in this class.

In class 10, twenty-four, single trusses, distinct, there were five exhibitors, and Mr. C. Williams, Lower Eaton, Hereford, was placed first with Madame Charles Crapelet, Comtesse de Serenye, Rosieriste Jacobs, Mdlle. Marie Verdier, Prince Arthur, Lady Sheffield, Merveille de Lyon, John Stuart Mill. Second row—Beauty of Waltham, Duke of Wellington, Ulrich Brunner, Marie Rady, Duchesse de Morny, A. K. Williams, Star of Waltham, Abel Carrière. Front row—La Rosière, Baroness Rothschild, Fisher Holmes, Maréchal Niel, Reynolds Hole, Mdlle. Marie Closon, Pride of Waltham, and Maurice Bernardin. Second, the Rev. L. Garnet, Chester, with an even good lot, Heinrich Schultheis, Ulrich Brunner, Mdlle. Eugénie Verdier, Etienne Levot, and Duke of Waltham being his finest blooms

Third, the Rev. E. N. Pochin, Barkby Vicarage, Leicester; fourth, the Rev. H. W. Watson, Birkswell.

In class 11, eighteen distinct, single trusses, five exhibitors, first, Mr. W. Narroway, Headington Quarry, Oxon, with Marie Baumann, Madame Engenie Verdier, Duchess of Bedford, François Michelin, Madame Charles Wood, Captain Christy. Second row—Baroness Rothschild, Marie Rady, Marie Verdier, A. K. Williams, Royal Standard, Rosieriste Jacobs. Front row—Dr. Hogg, Madame Noman, Duke of Edinburgh, Auguste Rigotard, Auguste Neumann, and Star of India. Second, Mr. G. Taylor, Old Headington, Oxon, with clean, even, good blooms. Third, Mr. W. Boys, Milford, Derby. Fourth, Mr. R. Ramsden, Chadwick Manor, Knowle.

Class 12, nine Teas or Noisettes, single trusses, five exhibits. First, Mr. W. Narroway, with Comtesse de Nadaillac, Niphetos, Madame Cusin, Maréchal Niel, Catherine Mermet, Jean Ducher, Souvenir d'un Ami, Innocente Pirola, and Devoniensis. Second, the Rev. L. Garnet; third, the Rev. H. W. Watson. Class 13, twelve distinct Roses, single trusses, five exhibitors. First, Lieut.-Colonel Standish Hore, St. Asaph, with Charles Lefebvre, Marquise de Castellane, Dupuy Jamain, Duchesse de Vallombrosa; second row—Marie Finger, Louis Van Houtte, Madame Gabriel Luizet, Alfred Colomb; third row—Camille Bernardin, Tea Anna Ollivier, Duchess of Bedford, and Dr. Andry. Second, Mr. W. R. Bland, Duffield, Derby; third, Mr. J. Sladden, Badsey, Worcestershire; fourth, the Rev. E. L. Fellowes, Wimpole Rectory, Royston. Class 14, six Roses, single trusses. First, the Rev. F. R. Burnside, Chipping Camden, with Merveille de Lyon, Etienne Levat, Baroness Rothschild, Reynolds Hole, Duchesse de Vallombrosa, and Marquise de Castellane. Second, the Rev. F. S. Taylor, Evesham; third, Mr. E. Mawley, Berkhamstead. Class 15, six Teas or Noisettes, single trusses, six exhibits. First, the Rev. F. R. Burnside, with Catherine Mermet, Madame Bravy, Souvenir d'un Ami, Souvenir de Paul Neyron, Madame Cusin, and Innocente Pirola. Second, Mr. J. Sladden; third, Lieut.-Colonel Hore. Class 16, six new Roses, distinct, single trusses, offered for the first time in English nurserymen's lists in the spring of 1884 and subsequently. First, T. W. Girdlestone, Esq., with Etendard de Jeanne d'Arc, Grace Darling, Alphonse Soupert, Princess de Bearne, Madame de Watteville, and Madame Massicault. Second, Mr. William Boys, with Mrs. C. Swales, Alphonse Soupert (both very fine blooms), Mary Bennett, Sunset, Etendard de Jeanne d'Arc, and Grace Darling.

The following were open classes.—Class 17, twelve new Roses, single trusses, offered for the first time in the spring of 1884, first Messrs. George Paul & Son, with beautiful blooms—viz., Benoit Comte, very fine; Madame Julie Gontin, Maréchal P. Wilder, very fine; Madame Massicault, fine form; Alphonse Soupert, fine; Longfellow, dark velvety crimson; Etendard de Jeanne d'Arc, a fine bloom; Directeur Alphand, Pride of Reigate, in fine character; Tea Madame de Watteville, Ella Gordon, fine form; and Madame Norman Neruda. Two other exhibitors in this class were disqualified, as Roses sent out beyond this date were exhibited, such as Lady Mary Fitzwilliam and Queen of Roses.

Class 18, twelve Teas or Noisettes, three trusses of each, first, Mr. B. R. Cant, Colchester, with a grand lot—viz., Niphetos, Madame de Watteville, Hon. Edith Gifford, Souvenir d'Elise, Maréchal Niel, Souvenir d'un Ami. Second row—Catherine Mermet, Marie Van Houtte, Madame A. Jacquier, very fine; Innocente Pirola, Madame Cusin, and Comtesse de Nadaillac. Second Mr. G. Prince, and in this stand Comtesse de Nadaillac, Madame Cusin, and Souvenir d'Elise Vardon were fine. Third Messrs. George Paul and Son, this stand containing fine blooms of Madame Angèle Jacquier, Comtesse de Nadaillac, Souvenir d'Elise Vardon, and Madame de Watteville.

Class 19, twelve single trusses of any yellow Rose. First Mr. B. R. Cant, second Mr. Frank Cant, third Messrs. J. Burrell & Co., Cambridge, all with Marshal Niels. Two other stands were staged, one of Etoile de Lyon the other Gloire de Dijon. Class 20, twelve single trusses of any white Roses, seven grand lots of Merveille de Lyon were staged and won great admiration. First Mr. George Prince, second the Cranston Nursery Company, third Messrs. George Paul & Son. A stand of La France was also staged in this class. Class 21, twelve single trusses of any crimson Rose; these were twelve exhibitors. First Mr. B. R. Cant with A. K. Williams; second Mr. Frank Cant with the same variety; third Mr. George Prince with Alfred Colomb, who also staged twelve grand blooms of Marie Baumann. Class 22, twelve dark velvety crimsons, eight exhibits. First Mr. B. R. Cant with a fine lot of Reynolds Hole; second the Cranston Nursery Company with Prince Camille de Rohan; third Messrs. George Cooling & Son with Xavier Olibo. Class 23, twelve single trusses of any Roses, six exhibitors. First Mr. B. Cant with Marshal Niel; second Mr. W. J. Grant with Baroness Rothschild; third the Cranston Nursery Company with Prince Arthur. Class 24, three trusses of any new seedling Rose; no entries.

Class 25, for district grown Roses. First A. H. Griffiths, Esq., Harborne, for an excellent lot; second Mr. Wm. Brown, Elmdon Hall Gardens; third Mr. Docker, Kings Norton.

Class 26, six distinct trusses for distinct growers. First Mr. J. Richards, Edgbaston; second Charles Snowell, Esq., Edgbaston.

Premiers, for best Hybrid Perpetual, A. K. Williams in the Rev. J. H. Pemberton's stand; best Tea or Noisette, Maréchal Niel, a grand bloom, which also took the premier at Moreton-in-the-Marsh two days previously, shown in Mr. Girdlestone's lot.

It is very much to be regretted that this superb display throughout could not have been seen by the thousands of Rose lovers in this district, and could a two-days exhibition have been arranged the reports in the evening and morning Birmingham papers would have brought a great attendance on the second day.

MAIDSTONE.

THIS is one of those exhibitions where the amateurs have it all to themselves, and where those who compete are confined, if not to the neighbourhood at any rate to the county. They generally come out in good form, and one is always sure to find good Roses in the stands; but time works its changes, and that which formed always one of the pleasures of the Show—the meeting of our veteran Rose grower, always full of cheeriness and enthusiasm for his favourite flower, Mr. John Hollingworth—was denied us this time. Age and its infirmities kept him at home, and although he is still able to get about his own place and bestow his many gifts of kindness to others, he is no longer able to enter into the busier scenes of life. He has been and is

still the mainstay of the Show. He gives as usual his cup to be competed for; and as long as he is spared, at any rate, the Maidstone Rose Club will continue to flourish.

The Exhibition was held this year later than usual. It is generally one of the earliest, but it took place this year on the 9th, and did not lose by the delay. The weather had become somewhat cooler, and as the room was cool and well ventilated Roses promised to keep well. I had to leave early, so do not know how they looked at the end of the day.

The principal class was for twenty-four Roses, twelve Teas and twelve Hybrid Perpetuals, and in this Mr. Warde of East Farleigh took first with an excellent box containing Madame Gabriel Luizet, Marie Baumann, * Jean Ducher, * Catherine Mermet, * Souvenir de Paul Neyron, * Maréchal Niel, very fine, taking also the medal for the best Rose in the Show, Prince Camille de Rohan, * Madame Hippolyte Jamain, A. K. Williams, * Souvenir d'un Ami, Prince Arthur, Marquise de Castellane, Charles Lefebvre, * Triomphe de Rennes, an excellent bloom, Duke of Edinburgh, * Perle de Lyon, Eugène Fürst, François Michelin, * Comtesse de Nadaillac, * Madame Margottin, Caroline Kuster, Marie Rady, and * Belle Lyonnaise. Those marked * being Teas or Noisettes.

In the class for eighteen a fine box was shown by Mr. H. Foster of Bradford, so good that it obtained the medal of the National Rose Society for the best box in the Show, containing Baroness Rothschild, A. K. Williams, William Köelle, a flower rarely seen and still more rarely in the beautiful form of this bloom; Mabel Morrison, Abel Carrière, Marie Baumann, Eugène Fürst, Marie Verdier, Jean Liabaud, Dupuy Jamain, Baron Hansmann, Marie Rady, Madame Marguerite D'Ombain, Alfred Colomb, Paul Verdier, Red Dragon, a remarkable bloom of a Rose not generally considered an exhibition Rose; Hippolyte Jamain, and Duke of Edinburgh. In class 3, for twelve Teas, Mr. Warde was again first with a good box of blooms containing Madame Margottin, Triomphe de Rennes, Marie Van Houtte, Maréchal Niel, Comtesse de Nadaillac, Madame Caroline Kuster, Jean Ducher, Etoile de Lyon, Madame Hippolyte Jamain, Souvenir d'un Ami, and Souvenir de Paul Neyron. In class 4, for twelve blooms, Mr. R. E. West of Reigate was first with Ulrich Brunner, Alfred Colomb, Reynolds Hole, Baroness Rothschild, Duke of Edinburgh, Louis Van Houtte, Camille Bernardin, Abel Carrière, Marie Rady, Marie Baumann, Star of Waltham, and Merveille de Lyon. In class 5, for eight trebles, Mr. Warde was again first with fine blooms of Marie Rady, Prince Arthur, Mons. Noman, Duke of Teck, very good; François Michelin, Eugène Fürst, Alfred Colomb, and Louis Van Houtte. In the class for six Teas Mrs. Fuller of Bexley Vicarage was first with good blooms of Comtesse de Nadaillac, Marie Van Houtte, Hon. Edith Gifford, Maréchal Niel, Jean Ducher, and Etoile de Lyon. She was also first in the class for six trebles with Charles Lefebvre, Gabriel Luizet, Marquise de Castellane, Captain Christy, Duke of Edinburgh, and Marie Finger. In the class for nine varieties Messrs. Ashunt & Tucker of Farningham were first with Marie Rady, Charles Lefebvre, Mons. Noman, Abel Carrière, Captain Christy, Alfred Colomb, Etienne Levat, and Baroness Rothschild. In the class for six trebles of Teas and Noisettes Mr. F. Warde was again first with Caroline Kuster, Comtesse de Nadaillac, La Boule d'Or, Innocente Pirola, and Princess of Wales. In class 6, for six of any one variety, Mr. W. H. Wakeley was first with good blooms of Maréchal Niel, and Mr. F. Warde second with the same variety.

There are always some good devices, or rather stands of Roses with foliage, the first prize going to Miss Bensted with a very light and tasteful arrangement of Tea Roses with the Briar and Bramble foliage; the second to Miss Lawrence with blooms of A. K. Richardson and other Roses. In buttonholes the first prize was won by Miss Sandley, and in shoulder knots Mrs. Biron displayed her usual taste in one composed of A. K. Richardson.

I have said that this is solely an amateurs' show, but Messrs. Geo. Bunyard & Co. and Messrs. Frost & Sons contributed many things to decorate the room, the former firm sending some Peach trees in pots, notably Alexander and Waterloo, of Russian origin, which prove themselves to be very early bloomers, with fruit of fine quality; they also sent six boxes of Rose blooms, containing most of the leading varieties in good form and colour; the dry season has, however, been unfavourable to their soil and situation.

The Society owes much to the energy and courtesy of their excellent Secretary, Mr. H. Bensted, under whose fostering care the Society has for so many years prospered, and under which all lovers of the Rose hope it may for many years continue.—D., Deal.

SUTTON.

THE enterprising Committee of this flourishing Rose Society made an excellent change this year in removing their show from the room which was far too small for their exhibits and holding it in a tent in the grounds of Sutton Hall, an unfinished mansion close to the town, and as the weather was brilliant the change was very pleasant. It is true the tent was trying enough for the Roses, but it was well ventilated, and in the early part of the day the Roses stood it better than might have been expected. The Committee of the Society have not merely endeavoured to get up a show where prizes may be taken, but have also tried, by publishing information and other means, to get the lovers of gardens in Sutton and the neighbourhood to take an intelligent interest in the culture of the Rose. I have had the pleasure of assisting at each of their exhibitions, and while at first it seemed as if their efforts would be in vain, the last two years have witnessed an advance, and the local exhibits this year showed a most decided improvement both in the manner of setting up and in the qualities of the Roses themselves.

When such growers as Messrs. Girdlestone, Slaughter, Cheales, Onthell, &c., contend in rivalry, it may be taken for granted that good Roses would be staged, and although difference of soil and situation must tell in such weather as we have experienced lately, the stands were in every way good. Perhaps the flowers were a little small owing to the rapid manner in which the hot sun had brought them into bloom. In class 1 for twenty-four blooms, Mr. Girdlestone was first with A. K. Williams, Souvenir de Paul Neyron, Général Jacqueminot, Captain Christy, Mlle. Marie Rady, Madame Marie Finger, Reynolds Hole, Beauty of Waltham, Souvenir d'Elise, Countess of Rosebery, Duchess of Bedford, Xavier Olibo, Catherine Mermet, Marie Rady, Prince of Wales, Prince Arthur, Annie Laxton, Alfred Colomb, Lady

Mary Fitzwilliam, Caroline Kuster, Horace Vernet, and two others. In class for twelve blooms, Mr. Alfred Slaughter was first with Horace Vernet, Lord Macaulay, Countess of Rosebery, A. K. Williams, Souvenir d'Elise, Marie Rady, Duke of Wellington, Camille Bernardin, Marie Baumann, Baronne de Rothschild, Marquise de Castellane, La France; Mr. Bethune second, the Rev. Cox Hales third. In class 3 for eight trebles, Mr. Girdlestone was first with Innocente Pirola, Dr. Andry, Gabriel Luizet, Dr. Baillon, Catherine Mermet, Marie Baumann, Eugénie Verdier, and A. K. Williams. In class 4 for twelve Teas or Noisettes, Mr. Girdlestone was first with Francisca Kruger, Paul Neyron, La Bonle d'Or, Madame Margottin, Catherine Mermet, Innocente Pirola, Madame de Watteville, Jean Ducher, Madame Bravy, Caroline Kuster, and Souvenir d'Elise Vardon. In class 5 for nine blooms, Mr. Cuthell was first with Duke of Connaught, Marie Finger, Ferdinand de Lesseps, Madame Hippolyte Jamain, François Louvat, Maréchal Vaillant, Marie Rady, and Gabriel Luizet. In class 6 for six blooms, Mr. E. Mawley was first with Lady Mary Fitzwilliam, Captain Christy, Duchess of Vallombrosa, Xavier Olibo, Marie Finger, and Countess of Oxford. In class 8 for six Teas, the Rev. A. Cheales was first with Souvenir d'un Ami, Rêve d'Or, Niphotos, Etoile de Lyon, Gloire de Dijon, and Maréchal Niel. In class 9, for twelve blooms of any one sort, Mr. Girdlestone was first with Duchess of Vallombrosa; Mr. Cuthell second with Captain Christy. In class 10 for six new Roses, Mr. Girdlestone was first with Queen of Queens, Princess of Bearn (?), Mrs. Caroline Swales, Lord Frederick Cavendish, Gloire Lyonnaise, and Lord Bacon. The N.R.S. silver medal for the best H.P. was awarded to Mr. Girdlestone for A. K. Williams, and for the best Tea to Mr. Slaughter for Souvenir d'Elise.

In the local class for the best twelve blooms the first prize was awarded to Mr. Foster for Le Havre, La France, Madame Victor Verdier, Souvenir de la Malmaison, Alfred Colomb, Jules Tournay, Duke of Wellington, Captain Christy, Sir Garnet Wolseley, and Maréchal Niel. In class 12 for the best nine, Mr. Hughes was first with Dupuy Jamain, La France, Marie Rady, Captain Christy, Star of Waltham, Merveille de Lyon, Baron Bonstettin, Belle Lyonnaise, and Jean Cherpin. In class 16, for six blooms of one variety, Mr. P. Waterer was first with La France. In class 15, for six blooms, Mr. Barrett won the ladies' cup with Alfred Colomb, Gabriel Luizet, Captain Christy, Countess of Oxford, Charles Lefebvre, and Marie Rady.

In the nurserymen's class Mr. B. R. Cant was first for thirty-six blooms with Merveille de Lyon, Duke of Edinburgh, Mons. Noman, Etienne Levat, Prince of Wales, Fisher Holmes, La France, Star of Waltham, Lady Mary Fitzwilliam, Sultan of Zanzibar, Maréchal Niel, Lord Macaulay, Duke of Wellington, Madame Marie Cointet, Annie Laxton, Mrs. Baker, Violette Bouyer, Madame Marie Verdier, Marchioness of Exeter, Comtesse d'Oxford, A. K. Williams, Captain Christy, Antoine Ducher, Souvenir d'Elise, Earl of Pembroke, François Michelon, Pride of Waltham, Madame Angèle Jacquier, Reynolds Hole, Madame Gabriel Luizet, Marie Baumann, Madame Eugénie Verdier, and Madame de Watteville. He was also first for twelve Teas with Etoile de Lyon, Madame Cusin, Souvenir d'Elise, Souvenir d'un Ami, Catherine Mermet, Innocente Pirola, Maréchal Niel, Jean Ducher, Prince of Wales, Marie Van Houtte, Niphotos, and La Boule d'Or.

Sutton always comes out very strong in the classes for table decorations, bouquets, sprays, buttonholes, baskets of Roses, &c., but they are classes of which it is impossible to give any description, and it will be therefore sufficient to say that the principal honours were taken by Mrs. Ernest Wilkins, Miss Russell, Miss Shaw, Mrs. Dart, and Miss M. Fisher. A great deal of good taste was displayed in many of these exhibits, but after all it must be sorrowfully confessed that the Rose does not lend itself so easily to decorative purposes as many other flowers do. The Exhibition was managed in its usual excellent manner, and its indefatigable and courteous Secretary, Mr. Ernest Wilkins, is to be congratulated on the success which has attended his and the Committee's efforts to popularise the Rose at Sutton.—D., Deal.

[Our correspondent accidentally omitted to give the name of the chief prizewinner in class 7.]

HITCHIN.

I AM puzzled to decide whether one gets more enjoyment from visiting places where one has been before, meeting old friends, hearing of all their doings, *roseally* and otherwise, or of breaking into fresh ground. However this may be, I had a very real pleasure in breaking up fresh ground on my visit to Hitchin, where indeed I was sure to meet old friends, but where the place itself was as yet unknown. And yet what a pleasant spot it is! and what a bustling place it must have been in the old coaching days, when it was one of the posting stations on the Great Northern Road, and where the fine old hotel, which still retains signs of its former state, when county magnates did not venture to London but were satisfied with the milder gaieties of county balls, &c.—now, alas! all departed; but they managed very well in those olden days, and in some ways the change of manners and customs is to be lamented. London was not then the all-absorbing monster that it is now, and county towns shone with some reflected lustre which has now all been absorbed.

The Hitchin Rose Show owes its origin to our energetic and cheery friend, the Rev. F. H. Gall, who for many years has managed it, and who must be pleased to see how it has improved and increased under his fostering care. As I have never been there before I can make no comparisons with former years, but I do know that it was a very excellent show, and that some very good blooms were exhibited. It was held in the grounds of S. Delmé Ratchiffe, Esq., close to the town, and, although compared with some shows it was small, yet several very good growers competed; Messrs. Burrell & Co., Merryweather, &c., amongst nurserymen; Messrs. Lindsell, Fellowes, Jackson, King, Curtis, and the worthy Secretary amongst amateurs. I have not this season as yet seen a more lovely box than the twenty-four set up by Mr. Lindsell. Some of the blooms were magnificent specimens, and there was little difficulty in picking out the premier blooms in it. The other exhibitors named showed well, but Mr. Lindsell was *facile princeps*. The following is the list of awards:—

For forty-eight distinct Messrs. J. Burrell & Co. were first with Madame Prosper Laugier, Lady Mary Fitzwilliam, A. K. Williams, Mons. Noman, Prince Arthur, La France, Mrs. Baker, Henrich Schultheis, Princess Beatrice, Mons. Boncenne, Annie Laxton, Mr. Harry Turner, Marie

Baumann, Jean Liabaud, Duchesse de Vallombrosa, Dupuy Jamain, Alphonse Soupert, Maréchal Niel, Louis Van Houtte, Marie Cointet, Dr. Andre, Pri e of Waltham, Alfred Colomb, Jean Soupert, Duc de Wellington, Madame Hippolyte Jamain, Charles Lefebvre, Queen of Queens, Dr. Sewell, Merveille de Lyon, Abel Carrière, Madame Eugénie Verdier, François Michelon, Marie Rady, Jean Ducher, Comtesse d'Oxford, Madame Montet, Duke of Teck, Marquise de Castellane, Star of Waltham, Beauty of Waltham, Violette Bouyer, Prince Camille de Rohan, Marie Verdier, Queen of Waltham, Marguerite de St. Amand, Duchess of Bedford, and Abel Grand. Messrs. Merryweather, Southwell were second; Messrs. Francis and Co., Hertford, third; and Messrs. Geo. Bunyard & Co., Maidstone, taking an extra prize.

For eighteen Teas, Messrs. Burrell & Co. were again first with Jean Ducher, Niphotos, Catherine Mermet, Amazone, Princess of Wales, La Boule d'Or, Souvenir d'un Ami, Rêve d'Or, Marie Van Houtte, Souvenir d'Elise Vardon, Souvenir de Paul Neron, Madame Angèle Jacquier, Caroline Kuster, Comtesse de Nadaillac, Souvenir de Gabriel Drévet, Etoile de Lyon, Madame Lambard, Devoniensis. The Rev. W. H. Jackson was second; Messrs. Merryweather, Southwell, third.

In the class for twenty-four distinct Mr. E. B. Lindsell had a very grand box of perfect blooms, containing Souvenir d'Elise Vardon, Prince Arthur, Duchesse de Vallombrosa, Xavier Olibo, Marguerite de St. Amand, Lord Macaulay, Madame Gabriel Luizet, Ulrich Brunner, Duchesse de Morny, Baroness Rothschild, A. K. Williams, La France, Alfred Colomb, Comtesse d'Oxford, Alphonse Soupert, Lady Mary Fitzwilliam, Innocente Pirola, Horace Vernet, Madame Lacharme, Heinrich Schultheis, Anna Ollivier, Violette Bouyer, Marie Baumann, Marquise de Castellane. In this box were the best H.P. Ulrich Brunner and the best Tea Anna Ollivier, and which also obtained the silver medal for the best box in the Show. The Rev. W. H. Jackson was a good second, and the Rev. E. L. Fellowes, Wimpole, third.

In eight trebles Mr. E. B. Lindsell was again first with Alfred Colomb, Duchesse de Vallombrosa, Caroline Kuster, La France, A. K. Williams, Merveille de Lyon, Dr. Andre, Violette Bouyer. The Rev. W. H. Jackson was second, and Mr. L. L. Curtis, Chatteris, third.

In class 5, for twelve distinct varieties, Mr. S. Tuke was first with Madame Charles Wood, Merveille de Lyon, A. K. Williams, Beauty of Waltham, La France, Marie Rady, Baroness Rothschild, C. Lefebvre, Duke of Edinburgh, Marie Van Houtte, Louis Van Houtte, Lady Mary Fitzwilliam; the Rev. F. Fox Lambert second, and Mr. F. Gosling third. In class 6, for four trebles, the Rev. F. Gall was first with Marquise de Castellane, Abel Carrière, Madame Marie Finger, Madame Gabriel Luizet; and the Rev. F. G. Jennyns second.

In class 7, for nine distinct varieties, Mrs. Times was first with Charles Lefebvre, Alfred Colomb, Madame Gabriel Luizet, Marie Baumann, Emily Laxton, Eugénie Verdier, Queen of Queens, Abel Carrière, Souvenir de Paul Neyron; Mr. John Barton, Sawtry, second; the Rev. E. T. Cavy third, and Mr. G. Monks extra. In class 8, for six distinct varieties, Miss A. M. Lucas was first with Marquise de Castellane, Ulrich Brunner, Mons. Noman, Duke of Wellington, La France, Alfred Colomb; the Rev. E. King, Madingley, second, Mrs. Times third, and Mrs. Wilson extra. In class 9, for twelve Teas, the Rev. W. H. Jackson was first with Jean Ducher, Souvenir d'Elise, Souvenir de Paul Neron, Madame A. Jacquier, Souvenir d'un Ami, Niphotos, Catherine Mermet, Triomphe de Rennes, Alba rosea, Madame Lambard, Peile des Jardins, Hon. Edith Giffard; the Rev. F. King second, and the Rev. C. L. Fellowes third.

In the class for nine Teas, Mr. E. B. Lindsell was first with Souvenir d'Elise Vardon, Anna Ollivier, Innocente Pirola, Etoile de Lyon, Souvenir d'un Ami, Elise Sauvage, Grace Darling, Hippolyte Jamain, Jean Ducher; and the Rev. C. T. Jennyns second. In the class for six Teas, the Rev. F. Fox Lambert was first with Belle Lyonnaise, Madame Lambard, Marie Van Houtte, Anna Ollivier, Hon. Edith Giffard, Jean Ducher; the Rev. F. H. Gall was second, and Mr. H. Ransom third. Mr. E. B. Lindsell was first with Marie Van Houtte in the class for six of one sort.

With table decorations, Miss Tuke and Miss A. M. Lucas were equal firsts, Miss L. Little second, Mrs. M. Pryer third, and Mrs. Hulson extra. For hand bouquet, Miss Grace Lucas was first, Mrs. Pryer second, Miss Florence Lucas third. In class 14 for buttonholes, &c., Miss Jennyns was first, and Miss McNeil second, and Miss Baily-Denton third.

HEREFORD AND WEST OF ENGLAND.

THE twentieth Exhibition of this old Society was held in the Shire Hall, Hereford. We regret to state that neither the competition nor the attendance of the public was up to the average. Perhaps it would hardly be right to expect the large Rose growers to compete at such distant places as Hereford during the few important days of the Rose exhibition campaign, still prizes of large money value are offered in a special class, to the exclusion of Herefordshire nurserymen, and in former years this plan was found to work most successfully, always two and occasionally three or four of the leading Rarian professionals putting in an appearance against the far-famed local Kingacre Nurseries. Your reporter pleasantly remembers on one occasion six grand seventy-twos being staged after the National Rose Show fashion. May history repeat itself, though from present appearances, this appears hardly likely.

In the professional class the Cranston Company carried all before them, and seldom have this celebrated firm exhibited better, there being hardly an inferior bloom staged. Their seventy-two varieties were as follows:—Comtesse de Serey, Exposition de Brie, Merveille de Lyon, Prince Arthur, La France, Reynolds Hole, Dr. Andry, Queen of Queens, Marie Baumann, Paul Neron, Princess Beatrice, Alfred Colomb, Henrich Schultheis, Louis Van Houtte, Alfred K. Williams, Mlle. Eugénie Verdier, Marquise de Castellane, Abel Carrière, Mlle. Sertor, Général Jacqueminot, Mlle. Marie Contet, Countess of Oxford, Duchesse de Vallombrosa, Marie Rady, Constantin Tretiakoff, Maréchal Niel, Mons. Alfred Dumaisnil, Elie Morel, Auguste Neumann, Marguerite de St. Amand, Baroness Rothschild, Sénateur Vaisse, Devoniensis, Star of Waltham, Pride of Waltham, La Duchesse de Morny, Madame Vidot, Madame Chas. Craplet, Madame Lacharme, Thos. Mills, Mlle. Marguerite Manion, Maréchal Vaillant, Dingée Conard, Egmont, Jeanne Sury, Victor Verdier, Madame Charles Wood, Madame Georges Schwartz, Catherine Mermet, Countess of Rosebery,

Madame Thérèse Lavet, Masterpiece, Princess Mary of Cambridge, Jean Liabaud, President Willemoz, Mons. Noman, Mons. Etienne Levet, Royal Standard, Duc de Wellington, Beauty of Waltham, Madame Gabriel Luizet, Mons. François Rive, Lady Sheffield, François Louvit, Marquise de Rohan, Duke of Edinburgh, Fisher Holmes, Marquise de Mortemart, Le Havre, Cloth of Gold, Prince Camille de Rohan, Hippolyte Jarnain. Specially grand in size, colour, and substance were the dark H.P.'s Reynolds Hole and Abel Carrière, H.P. Auguste Neumann, smooth and fine, superbly shown; H.P. Dingée Conard, magnificent, but of poor habit and very uncertain; Madame Chas. Crapet, grand bloom of this fine old Rose; and Madame Etienne Levet. Messrs. Davison & Co. took second prize, H.P.'s Empress of India and Rosy Morn were especially noticeable among their blooms. In thirty-six varieties, three trusses, Cranston Co. first prize, and Messrs. Davison and Co. second prize. In twenty-four varieties Mr. Thomas Griffiths, Tillington Nurseries, first prize, and also in eighteen varieties, three trusses; while the second prize fell to Messrs. Harkness & Son, Bedale, and Messrs. G. Cooling and Son in the order named.

In class A2, excluding Herefordshire nurserymen, seventy-two varieties, single trusses, first prize Messrs. Harkness & Son, second prize Messrs. Cooling & Son. Coming to the amateur class, the first prize for thirty-six varieties, single trusses, fell to Mr. Grant, the second prizewinner at the N.R. Show last week, and seldom if ever has this spirited exhibitor staged finer blooms. We noticed as specially grand H.P. Marie Rady, Captain Christy, François Michelon, Ulrich Brunner, magnificent; Souvenir d'un Ami, exquisite; H.P. Duchesse de Vallombrosa, and Madame Eugene Verdier. This gentleman's box was almost faultless, cleverly staged, and had the honour of containing the first and second prizes for the two best blooms in the Hall—viz., first H.P. A. K. Williams, and second H.P. Duchesse de Morny. This exhibit also carried off the National Rose Society's silver medal. Miss Bulmer took second prize with more loosely built but finely coloured and well-arranged blooms. The class restricted to Herefordshire was well filled. The leading prizewinners being J. Pulley, Esq., J. Rankin, Esq., and W. Farrar Ecroyd, Esq., in the order named.

The floral decorations were not quite so keenly or numerous contested as usual. Lord Bute's special prizes, first prize Miss E. M. Barrow, second prize Miss Watkins. In class D, open, the collection of twelve new Roses not in commerce previous to 1883, always a most interesting and useful exhibit, fell to Cranston Co., also twelve trusses of any new Rose not in commerce previous to 1883, with H.P. Duke of Albany, a most promising dark variety. Twelve Teas and Noisettes were deservedly won by Mr. Cant with splendid blooms of mostly old favorites—Souvenir de Paul Neyron, Jean Ducher, Nipbetos, Souvenir d'un Ami, Madame Lambard, Alba Rosea, Noisette Caroline Kuster, Devouienais, Catherine Mermet, Marie Van Houtte, and Rubens. Second prize Messrs. Jeffries & Son. Highly commended, Mr. F. R. Burnside and Messrs. Harkness & Son. This was a very fine class indeed of eight exhibitors. In twenty-four blooms of any one Rose, equal first Messrs. Cooling & Son and Mr. Grant with H.P. Alfred Dumesnil and H.P. Marie Rady, second Cranston & Co., H.P. Reynolds Hole.

May your reporter be allowed to suggest in the most friendly spirit, that a little more attention be paid to the artistic decoration, not to say domestic requirements, of the Exhibition Hall and its precincts. A grievous falling off in this respect cannot fail to produce a bad impression on visitors who are accustomed to associate so lovely a spectacle as a Rose show and all its surroundings with everything that is in perfect order, taste, and beauty. He would suggest also that a good string band be added as on former occasions to the floral attractions. Drawbacks and alterations like these in the opinion of the general public are apt to be dangerous experiments and bad economy. The Judges were the Rev. C. H. Bulmer, Credenhill Rectory, Hereford; Mr. W. J. Grant, Ledbury; Mr. Cooling, Bath; Mr. Harkness, Bedale; and Mr. Tresider, Cardiff.—THE HEREFORDSHIRE INCUMBENT.

SHREWSBURY.—JULY 15TH.

THE fourth annual Exhibition of this spirited Society was held in the lovely Quarry Grounds, and taking into consideration the counter-attraction of the N.R.S.'s provincial Exhibition at Birmingham on the same day, proved a marked success. Ninety-five entries were made, and although severe storms in the North kept off some intending exhibitors, we learn that over 3000 blooms were staged. Suffice it to say, as speaking volumes for the energies of the management, in spite of the formidable rivalry already alluded to, no less than five excellent seventy-tuos (single trusses) were staged, a signal proof of what can be done in the way of administrative talent. The exhibits, which were staged in a magnificent well-ventilated tent 48 feet in breadth, included a few flowers of other varieties besides Roses and some excellent Strawberries. The interior of the tent was decorated with ornamental foliage plants, and good taste, cleanliness, and order were the rule everywhere. To proceed with the division list:—

In class 1, seventy-two varieties single trusses, Cranston Co., Hereford, were first. Their collection consisted of the following varieties, very fresh, bright, and of fine size, chiefly noticeable for the revival of some old or disused varieties: H.P. Pierre Notting, Madame Vidor, Prince Arthur fine, Mme. Schwartz, Star of Waltham, Mary ille de Lyon, Mme. Countet, Ulrich Brunner, Dr. Andre, Duke of Wellington, Pride of Waltham superb, Xaver Olibo, Jean Liabaud, Baronne de Rothschild, J. S. Mills grand, Duchesse de Morny, Madame Caillat, Marguerite de Rohan (great acquisition), Duke of Edinburgh, Lady Sheffield superb, Alfred Colomb, Princess Beatrice, Countess of Oxford, Catherine Soupert, Eugénie Verdier, Louis Van Houtte, Marquis de Castellane fine, Madame C. Crapet, Captain Christy, Lord Macanlay, Le Havre, Madame Lacharme, Beauty of Waltham glorious, Duke of Albany, Madame Jean Twombly fine, Lælia, Marie Baumann, Reynolds Hole grand, Princess Mary of Cambridge, Duchesse de Vallombrosa, Madame S. Rochochanski for once perfect, Tea Jean Ducher, Duke of Connaught Victor Verdier, Abel Carrière splendid, Vicomte de Vigier perfect, Egeria, A. K. Williams, Tea Souvenir d'Elise, Henrich Schultheis, Prince Camille de Rohan, Marie Verdier good, Fisher Holmes, Etienne Levet, Madame Alfred Dumesnil (this Rose's year), Mlle. de St. Ama d, Madame C. Wood, Countess de Serenye, Madame Victor Verdier, Docteur Chalus, Sultan of Zanzibar, Queen of Waltham, Madame Masseault good new,

Charles Darwin, Queen of Queens, Gabriel Luizet exquisite, Countess of Rosebery, La France, Madame Noman. Second Messrs. Keynes & Co., Salisbury; third Messrs. Mack & Son, Catterick Bridge, Yorkshire. Class 2, twenty-four, three trusses, first Cranston Co.; second Mr. Thomas Griffiths, Tillington, Hereford; third Mr. E. Murrell, Portland Nursery, Shrewsbury. Class 3, twenty-four varieties, single, first Mr. Griffiths with a very grand lot of blooms; second Mr. Murrell; third Messrs. Davison and Co., Hereford. In the amateur class in both divisions B and C, the latter open, the competition was very large, and most of the prizes keenly contested. The blooms were, as a rule, smooth and fresh and very nicely set up.

In division D, restricted to the county (rather exclusive on the part of the proud Salopians), the first prize for Teas and Noisettes fell to a very creditable collection exhibited by Colonel Wingfield, who also won first prize for twelve Roses of any one variety. At this Exhibition there are no prizes offered for decorative floral art of any description whatever—a commendable exception to the general rule at Rose shows, except where sufficient money can be added to the schedule to attract floral artists; otherwise the standard of merit aimed at is low, and the taste of the public not likely to be improved. The Judges were the Rev. C. H. Bulmer, Credenhill Rectory, Hereford, and Mr. Farrant, Monklands, Shrewsbury.—THE HEREFORDSHIRE INCUMBENT.

BOILER CONTEST, LIVERPOOL.

WE should like, with your kind permission, to make a few remarks on the above. First, What is this contest for? To prove which boiler most nearly approaches the locomotive boiler in power to make steam; or which is the most suitable for a gardener's use and economical for his master's pocket? If the latter, why are not the conditions of the trial made as much as possible to correspond with the common conditions under which boilers are worked every day? Will the result obtained by one or two men firing a boiler as hard as they can, never leaving it, and putting on every shovelful of coke the boiler can be made to take, be much guide to a gardener who wants a boiler he can leave for hours? The boilers should only be fired at stated intervals, and special attention given to the point of maintaining a steady heat. We think the Judges should at once record their views on any improvements that can be made in the conditions of trial, and they will thus greatly assist those who may conduct such contests in future. If also some of our leading horticulturists and gardeners would ventilate the subject in your columns, while it is fresh in men's minds, it would enable the Council of the Royal Horticultural Society to draw up such conditions that the result should be generally accepted and add materially to our knowledge. This boiler question is most important to horticulture, and if the Royal Horticultural Society will organise a trial another year on more suitable conditions we will at our own cost erect a terminal end saddle with 2000 feet of 4-inch pipe as a standard to compare the other boilers with. This letter is a month too late, but we know rather more about a boiler contest now than we did before the trials at Liverpool. One word as to the Judges. No praise can be too high for the care, attention, courtesy, and downright hard work they gave to this subject, even if we disagree with their verdict.—FOSTER AND PEARSON.

SUMMER TREATMENT OF OUTDOOR CHRYSANTHEMUMS

LAST season I drew attention in the *Journal of Horticulture* to the more extended culture of Chrysanthemums for cutting, and the decoration of walls and borders, where practicable. I shall now say a few words as to early border Chrysanthemums. I have received so many communications in reference to outdoor Chrysanthemums, especially these, that although there are so many other brilliant flowers during August and September, they must have many admirers. Some of the most gorgeous summer flowers only last a day or two when cut, but the Chrysanthemum will last three weeks if the water is changed and the stem dressed. Only the early varieties should be grown in borders, as, if October and November varieties are planted there, premature frost may spoil all the care of the previous nine months. My first bloom will be from Préocité, a really good free-growing yellow. The next from La Petite Marie, blooms very large for the size of the plant, white and prettily recurved. At present the former is 10 inches high and the latter only 6, beautifully studded with buds. I intend having a bed of each next season. Fiberta, G. Wermig, and Salter's Early Blue I have had this year for the first time, and cannot yet speak definitely of them. Others having their buds now well formed, and that I can recommend, are Frederick Pélé, Golden Madame Domage, Madame Piccol and Pomponium. Whites are always useful, and the beauty of the dwarf Chrysanthemum is that they can be lifted without difficulty, potted, shaded, kept moist, and never lose a leaf. Best of all early whites is Madame Deszanges, but a month later than those named, blooming from September onwards. For lifting or cutting grow also La Vallée, Mr. Cullingford, St. Croix (dwarf), and Madame Jollivart. La Vierge (later) should be included, but Sœur Melanie, Félicité, Mandarin, and Alex. Dufour, and a few of the taller Pompons I prefer growing by a wall, otherwise the wind makes a sad havoc among them. I recently saw plants out of pots from Mr. Cannell, Swanley, for thus planting out, and they grew on without check. Thinning the buds, training and watering as usual are necessary.

Wall Chrysanthemums.—I may premise that summer and autumn Chrysanthemums will always be useful and have their admirers, success being almost certain with or without treatment; but give me the man who will grow blooms fit for an exhibition table, planted in the open air. Can it

be done? Some say "No," but I am certain it can. There are some late varieties that may not bloom until December, such as Eve, Duke of Teck, Fleur de Marie, and Daimio, say as representing the different sections. Well, I admit without a piece of strained canvas, tiffany, wall coping, or other protection over them, I never succeeded with those. But before I come to speak of their treatment one word as to the query, Why try to grow blooms fit for exhibition outdoors? First, to make their culture more general, so that every amateur and cottager with a piece of a wall and the desire to have superior blooms to cut either for himself or his neighbours, or for the local flower show, may do so. Secondly, success is more certain, and a greater profusion of blooms, even with imperfect treatment; and, thirdly, constant daily and hourly attention, which amateurs cannot generally afford, is not so indispensable. In my own case this is only a pastime, a variation from other duties, and if I am absent any small boy can water the plants. Even if not watered for a day or two, though there may be scorching sunshine, in my prepared border the plants do not suffer to the same extent, if at all. Fully exposed in pots this would be fatal to success. At present I have some 300 planted out, about two-thirds against a south wall and the remainder in other aspects, in, say, 100 varieties, not including some seedlings raised by myself. Every section is represented, and all are doing well, with that bright glossy dark green foliage down to the very soil that Chrysanthemum growers like to see. Many of the Japanese, as M. E. Pynaert Van Geert (early), Madame Audiguier, Agréments de la Nature, Fabian de Mediana, and Lord Beaconsfield I may mention as types, and tall-growing, they are about 3 feet high and otherwise in proportion. Every stem and branch is carefully spread out to catch every ray of sunshine, and then nailed with shreds of tape to the wall. When I commenced this system of growth the wind and storms were my great opponents. Now, as the stem-shoots progress I tie or nail them in, and the storm has nothing to catch hold of and consequently nothing to snap off. I have used no stimulants or chemical manures, as the border was specially made last winter of several loads of well-decayed manure and half a dozen loads of the purest yellow loam, in addition to what was there already. This was put in the bottom, so that the roots are only now reaching this. Recently I put out a thermometer (Fahr.), registered to only 120° full in the sun on this wall. The mercury quickly run up to that limit, and then smashed the bulb; the Chrysanthemum did not seem to suffer in the least, and the result I attribute to the specially prepared border. With the facility of thus getting the wood thoroughly ripened and matured I expect healthy foliage of leathery texture, and the stems are so woody and durable that I am using some of last year's for stakes for those I grow in pots. Growth is so rapid, but at the same time so matured, that constant attention is desirable, if not necessary. I have thinned out some of the lower shoots, what I may call the "breast wood," and later on I will thin the buds. Beyond this general eye to them now and then, and of course a plentiful supply of soft water and syringing the foliage in the evenings now and then, no further care is necessary for some months to come. What I do with some difficulties to contend with, thousands who never have a Chrysanthemum can do as well.—W. J. MURPHY, *Clonmel*.

MASDEVALLIA ROSEA.

"QUEEN of the Masdevallias" is the title with which Professor Reichenbach has honoured the species named above, and although all orchidists may not be willing to accord it the same dignity, yet all will admit that *M. rosea* is, when well grown, one of the prettiest of its type. Few were, however, prepared to see such a specimen as that shown by Sidney Courtauld, Esq., Bocking Place, Braintree, at the Royal Horticultural Society's meeting on June the 8th this year. Well deserved was the cultural commendation awarded for it by the Floral Committee, and no doubt many of those who saw the plant in question were surprised at its vigorous floriferous condition. This specimen, which is represented in the woodcut (fig. 11), was in a 48-size pot, was furnished with numerous healthy leaves, and bore over 120 expanded flowers, with other young flowers to open. These were curiously disposed round the sides of the plant near the rim of the pot, and thus imparted an appearance of a fringe of rosy flowers, very distinct from the habit of other Masdevallias related to this species. The flowers are of good size and easily recognised, the lower sepals elliptical and tapering into narrow points, which curve slightly outwards; the upper or dorsal sepal tapers very slightly from the base, being nearly linear and very narrow, curving over and between the two other sepals. The colour is a rather pleasing rosy hue, with a tinge of lilac in the lower sepals, and of crimson in the upper one. In some of the small Masdevallias the scapes are so short that the flowers are hidden amongst the leaves, but this is not the case with *M. rosea*, as the flowers are borne well above the points of the leaves, and are consequently seen to the best advantage.

M. rosea is interesting in several respects apart from its cultural value, as, although known for about forty years, it was not introduced to gardens until 1880. The species was discovered by Theodor Hartweg at Loxa, and was described in 1845 by Lindley in the "Annals of Natural History," xv., page 257; it was also described in "Walpers Annales Botanices"

some time after—namely, in 1861, vol. vi., page 192, where reference is given to a description by Reichenbach in the "Bonplandia" (11, 116). In "Walpers Annales" it is grouped with *M. coccinea*, *M. amabilis*, *M. militaris*, and *M. racemosa*, as of the first-named type, an arrangement which I believe, was adopted by Lindley. The plant was subsequently described in other works, but although found by Professor Jameson and collected by several travellers, all attempts to import it had been unsatisfactory until a few years back, when a healthy consignment made its appearance at Mr. Stevens' sale rooms. It seems that owing to the species frequenting a very cool region the transportation through hot tracts on its way to the ports for shipment causes the loss of numbers; but this matter should also be a guide to cultivators, for it requires a low temperature to ensure its success, being impatient of artificial heat.—L. C.

WALK EDGINGS.

WHATEVER may be the merits of the various articles used as edgings to walks, it seems agreed on, by usage, that one of Box stands pre-eminent; and whether we take it for its hardihood, durability, or general appearance, as a live edging it would seem the first in its class. Nevertheless, there are places where it is inexpedient to have Box; places where neither that nor anything else will grow; and places where it almost refuses to grow, from a dislike to the soil. Now, though we profess to advocate the use of Box in all cases where it will thrive, unless other circumstances render another edging necessary, we will, nevertheless, advert to other kinds for the special purposes for which they may be wanted.

From time immemorial edgings for paths have been deemed requisite for appearance, and in some respects for stability. The various Roman canseways, which intersected the cultivated parts of this country during the time that wonderful people held possession of it, have all a row of larger stones at the edge than in the centre, showing that "an edging" was not unknown at that early period; and from them, down to the present period, some sort of margin seems to be considered necessary to all sorts of pathways, be that a turnpike foot road, a street pavement, or the more humble crossing that carries the cottager from his backdoor to some outhouse. To all an "edging" of some sort seems requisite, and all have their edging accordingly.

Like many other plants, more noticed perhaps, the Box has divided itself into varieties, differing in their dwarf or robustness of habit, the extremes being denominated "tree," and "edging Box;" but, independent of these extremes, there are (as in most other things) intermediate kinds, too coarse for edging purposes in many places, though not in all; and in those situations where the very dwarfest kind refuses to grow, this stronger growing one may be introduced to advantage. Which ever may be used, be sure that all the edging planted in one place be all of a kind; for though we advocated cutting and trimming, yet the jagged and very uneven growth that takes place when the dwarf and robust are intermixed, or, what is equally bad, half one, and half the other, in the same line, renders it necessary to be very exact in having it true. We will not here go into the details of planting, which are well known, but merely say that we cut but little (seldom any) of the top at the time of planting. It is likewise necessary to be careful that the ground on which it is planted be all alike in quality, and not to have the roots of one piece luxuriating in the rich soil of the kitchen garden squares, and another struggling for existence amongst the hungry gravel and other substances the walk may be made of. These matters are often neglected, and the edging presents afterwards a diversity of growth not to be wondered at when we consider the circumstances in which it was placed. It is scarcely necessary here to point out the best season for this duty, for it rarely happens that any regard can be had to that; we have planted it at all seasons, but prefer the month of April. Whenever it is planted in dry weather, it should have the advantage of water for some time afterwards, and it will seldom fail to grow, even when its roots have been much curtailed. In moist, cool districts, large quantities are often put in without any root at all. The middle of the growing season is the worst for planting, but we have done that in a case of necessity, and been tolerably successful.

Notwithstanding the reputed hardihood of Box, we have seen it show more signs of suffering from spring frosts than many things supposed to be more tender. Some frosts we had in the early part of one spring, followed by a bright sun, "cut up" the tender growth of Box edging on the east sides of those lines which run north and south, and were exposed to the morning sun. This, we suppose, to be owing to the cold air floating nearest the ground, and the sudden exposure to unclouded sunshine after. Nevertheless, we need not be afraid to plant it in exposed situations; for, though it suffered severely, and for some days was quite black, still it recovered itself without any portion falling a victim to the ordeal to which it had been subjected.

We have heard it said, "There cannot be any good gardening where Box edging will not grow." From this we entirely dissent, as we have seen an excellent and well-kept garden, where, after repeated trials, in which the Box perished piecemeal, its use was given up, and a dead edging, we believe of timber, substituted in its place. This proves that there are some soils which do not possess in sufficient quantities the necessary ingredients on which Box lives, or some which it dislikes; consequently, after dragging out a miserable existence, it dies, piece after piece, until the edging becomes no edging. It would be difficult to describe the

precise kind of soil the Box dislikes, but we may say that where Sorrel is found very abundantly it is often a proof that the Box will not be at home there; while we have seen it thrive on a sandy soil that would almost drift before the wind, and it thrives equally on a retentive loam.

Though it cannot be planted at this season, yet it may be successfully trimmed into order, which is a point equally necessary to its general appearance. For this purpose damp, dull weather is the most suitable time. Its mutilated leaves are not then subjected to the scorching influence of the sun until a partial recovery takes place; and the same may be said of those interior leaves which, having been long concealed, are not able to bear exposure to hot sunshine with impunity. By cutting Box at this season a part of its summer's growth also will be retained, which will look well the remainder of the year.

As we have before said, every walk ought to have some visible edging, or margin, whereby its outline is distinguished from the ground which

things, all employed for that purpose; but, excepting the last, it is seldom that any good is derived from them.—GARDENER.

GROWING CALANTHES IN MOSS.

YOUR excellent engraving on page 47, and notes of culture of *Calanthes* on page 46, recalls to my mind how excellently Colonel R. Trevor Clarke, the veteran horticulturist, Welton Place, Daventry, grows *Calanthes vestita* vars., C. Veitchi, &c., in common hedgebank or wood moss. The pseudo-bulbs are placed aside after flowering until they push fresh growth and roots in spring, when they are potted in the moss freshly gathered, the bulbs being placed on the moss, which is also rammed firmly at the sides to keep them erect, and low down, so as to allow space for watering, the surface of the moss being at least a couple of inches below the rim of the pots. No other material is used besides the moss,



Fig. 11—MASDEVALLIA ROSEA.

adjoins it. Even the back paths, or thoroughfares, ought to have boundary marks to denote how far they ought legitimately to extend; these, however, had better be either brick, or stone of some sort sunk in the ground. Common bricks make a very good edging, laid either edge or endways up, where traffic is supposed to pass over them; but they look best when laid angle-ways up, like the ridge of a house, and, if done carefully, they look remarkably neat. Rough stones or flints will do in certain situations where there is not much traffic to displace them; but in a wilderness or other romantic situation they are the most proper; while in the precincts of the mansion, or dressed grounds, a prepared kerb-stone, or something that represents it in the terra cotta or plaster way, will doubtless be preferred; the increasing uses to which the last of these has adapted itself will most likely lead to many pleasant forms of edging and other ornamental work, so that we have no doubt but the others will be eventually driven out of the market. Slate may be used in some places, and so, likewise, may cast iron; but the first is too thin to look well, and the last liable to many objections—not the least being its expense, where perhaps a mile of it be wanted.

We are aware that in a kitchen garden many live edgings are turned to profit, or intended to be so, but their disorderly appearance more than counterbalances any good likely to be derived from them. We have seen Thyme, Hyssop, Pennyroyal, Strawberries, Parsley, and many other

and as this decays it is forced down around the sides of the pots, and fresh moss added at the surface. In this the *Calanthes* make enormous pseudo-bulbs, and the spikes of bloom are correspondingly fine. The decomposition of the moss must be a source of food to the *Calanthes*, and that is what we seek by mixing sphagnum with the material used in potting Orchids and Aroids. The gentleman named proves wood moss superior to sphagnum, he having a dislike to the latter for mixing with the compost, and only uses it, and that sparingly, for surfacing. Orchids grow with him like weeds. He has scores of *Phalenopsis* growing on bare board or a piece of stick not thicker than the thumb, as many roots in the air as on the wood. The plants were suspended over a tank, and in front of a wall covered with *Ficus repens* kept constantly damp. The *Phalenopsis* are in the best possible condition, very strong and healthy.

On a painted roof support was a *Dendrobium* sp., the roots running riot on the painted surface, they being quite fixed on the painted (white lead) surface without any moisture-holding substance, and this, not for an isolated root or two, but upon a length of between 2 and 3 yards of plant, or plants, it being a remarkable specimen. These matters I thought would be interesting to your readers, especially "L.C." who may be interested to know that the Colonel uses chemicals largely. Is that the secret of his success? I saw the many different varieties of Cotton by

which the Colonel has laid Cotton growers under such obligations to him, also Tobacco, green and manufactured, with Cape and other bulbs of which I shall not attempt description, the Colonel following in the steps of Dean Herbert, and I fancy outside Kew possesses an unrivalled collection, besides curious and interesting plants without number, everyone with a history.

Colonel Clarke also showed me his home-manufactured superphosphate in three degrees of fineness, and he has hope of manufacturing a home manure that will answer all purposes, and such as may be used by a lady. Superphosphate from bones, ammonia in soot, potash from night soil and urine, enough on every place for its requirements. I only wish the Colonel would inform us on some at least of the many subjects he is so experienced in, and is so accomplished an expositor. It would indeed be a treat to the readers of the *Journal of Horticulture*, which holds a foremost place in his esteem, and from which he told me he had derived much valuable information. I spent the best part of two days and a night at his charming place, and regret not being able to tell more of the many rarities that are loved and tended by their gifted owner, and whose kindness and hospitality will never be effaced from my memory.—G. ABBEY.

HORTICULTURAL SHOWS.

CHISWICK SHOW.—JULY 15TH.

THE local Horticultural Society, which has its headquarters in Chiswick, but includes Turnham Green and district within its sphere of operations, appears to be making substantial progress judging from the steadily improving exhibitions provided each summer. The one held on Thursday last was the most extensive and meritorious the Society has yet held, and was in every respect satisfactory, plants, flowers, fruit, and vegetables being fairly represented. Two marquees were devoted to plants; the large conservatory contained the floral decorations, fruit, vegetables, and miscellaneous exhibits, the old orchard house being appropriated to the cottagers' classes and special prize competitions. The latter are being made a feature in this Show, as at Richmond eleven classes being provided, in which the prizes are offered by the Duke of Devonshire, the Marquis of Bute, Lady George Hamilton, Leopold de Rothschild, Esq., G. F. Tautz, Esq., W. J. Compton, Esq., E. H. Watts, Esq., J. R. Starling, Esq., H. G. Lake, Esq., and Messrs. Sutton and Sons, and James Carter & Co., all of which brought numerous competitors.

The leading attractions on the occasion under notice were the groups of plants arranged for effect, and the large marquee devoted to these comprised a display that is very seldom equalled even at the best shows in the country. Few exhibits give more general satisfaction to the public than groups of plants tastefully arranged. All can understand and appreciate them, and they constitute an admirable foundation to a show, besides being really instructive. The principal class was for a group arranged in a space of 100 square feet, and in this Messrs. Hooper & Co., Covent Garden and Twickenham, were first with one of their customary handsome groups, but their tasteful manager had even surpassed his previous efforts. The taller and background plants were Palms, *Cocos Weddelliana* at the sides, *Acer Negundo* variegata, and the bright red narrow-leaved *Dracena superba*. These larger specimens were surrounded by *Petunias*, *Hydrangea paniculata* and *Caladium argyrites*, which showed them off admirably. The groundwork was formed of *Adiantums*, *Asparagus plumosus*, *Carnations*, a few *Tuberous Begonias*, and *Coreopsis*. *Phalænopsis*, *Cattleyas*, *Sophrontes*, and *Disas*, the margin consisting of *Gloxinias* with *Isolepis* and *Panicum*, very informal and beautiful. The second place was taken by Messrs. W. Fromow and Sons, Chiswick, who also had a charming contribution of Palms, *Crotons*, *Lilies*, *Orchids*, *Petunias*, and other plants, together with Ferns arranged in a similar style to the first, but with a little more colour. Mr. W. Brown, Richmond, was third with an effective group, very bright and well arranged, but not quite so light and free as the two preceding.

In the class for a group to occupy a space of 60 square feet there were four competitors, Mr. Hudson, gardener to H. J. Atkinson, Esq., Gunnersbury House, Acton, securing chief honours with one of the lovely groups for which he is famed. The background consisted of *Crotons*, *Humeas*, *Palms*, with *Lilium longiflorum*, a ground of *Adiantums*, *Caladium argyrites*, and *Kalosanthes*, a few *Dracenas*, *Gloxinias*, *Streptocarpus*, and *Clerodendron fallax*, edged with *Gloxinias*, *Caladium argyrites*, and *Panicum*. Mr. Chadwick, gardener to E. M. Nelson, Esq., Hanger Hill, Ealing, followed, and Mr. Wright, gardener to E. H. Watts, Esq., Devonhurst, Chiswick, was third, both showing well. Several other groups were staged in a third class, the prizetakers being G. F. Atkins, Esq., H. G. Lake, Esq., and B. Hardy, Esq., who secured the prizes in the order named. Non-competing groups were entered by several firms, very notable being a grand contribution from Messrs. C. Lee & Son, Hammersmith, which was highly commended by the Judges. It comprised a number of Palms, Cycads, ornamental shrubs, and *Ivi*s at the back, with a foreground of *Lilium auratum*, the bluish-tinted *C. Krameri*, fine banks of the rosy *Spiræa palmata*, the blue *Statice floribunda*, and the white *Spiræa paniculata floribunda*, with abundant small *Roses* in pots formed a charming contrast of colours, edged with *Bambusa Fortunei* variegata, an excellent plant for margins. From the same firm came a large group of variegated shrubs and trees, including many fine varieties. Messrs. W. Fromow & Sons also had a handsome group of *Hydrangeas*, *Crotons*, *Lilies*, and miscellaneous plants. Messrs. J. Veitch and Sons, Chelsea, had eight boxes of fresh and beautiful *Rose* blooms, representing a large number of varieties. Mr. J. Roberts, gardener to Messrs. Rothschild, Gunnersbury Park, Acton, and Mr. May, gardener to the Marquis of Bute, Criswick House, also staged large and handsome groups that were highly commended. In the general plant classes the principal prizewinners were Mr. Bates, gardener to Mrs. Meek, Poulett Lodge, Twickenham, E. H. Watts, Esq., E. M. Nelson, Esq., and H. G. Lake, Esq.; fine-foliage plants and Ferns being especially well shown.

The vases and stands of flowers in the conservatory were mostly very good, especially those in competition for the Duke of Devonshire's prizes, offered for three vases. Mrs. Hudson was awarded the first honours for a tasteful arrangement of *Humea* flowers, *Grasses*, *Rhodanthes*, and *Lonicera sempervirens* at the top, *Stephanotis*, *Roses*, and *Tacsonias* in the second

stage, with base of *Water Lilies* and other flowers. Mr. J. R. Chard, Clapham, was second with a simple yet very pleasing arrangement of white *Rhodanthes*, *Miss Jolliffe Carnations*, *Bouvardias*, with a base of white *Lilies*, *Chrysanthemum frutescens*, and *Rose La France*; the centre stand was furnished with red, white, and yellow flowers, the side stand with pink and white flowers only. Mr. J. Prewett, Hammersmith, was third, *Centaureas*, *Rhodanthes*, white *Lilies*, *Water Lilies*, *Cattleyas* and *Allamandas* forming the chief features. A stand from Mrs. Phippen of Reading was highly commended. Mr. J. Compton's prizes for one stand of flowers were gained by Miss S. A. Fromow, J. Prewett, and Miss H. Haywood; the awards for three bouquets being secured by Messrs. J. R. Chard, J. A. Morris, and W. Brown. The prizes for cut *Rose* blooms were adjudged to Messrs. Rumsey, Bunyard, and Turner in the order named.

The best collection of fruit came from Mr. W. Bates, of white Grapes from Mr. J. Coombes, and black Grapes from W. Lindell, Esq.; the vegetable prizes going to Mr. C. J. Waite, Mr. J. Coombes, and J. R. Tindall, Esq. Messrs. J. Carter & Co., High Holborn, offered prizes for a collection of six dishes of vegetables, which brought seven competitors, Messrs. R. J. Waite, A. J. Robbins, and J. R. Tindall taking the honours. Messrs. Sutton's prizes for vegetables were gained by Messrs. Waite, Coombes, and Tindall amongst six exhibitors. The Royal Horticultural Society's silver medals for the two leading prizewinners were awarded to E. H. Watts, Esq., and Mr. C. J. Waite.

The day was an extremely fine one, and a number of visitors assembled during the afternoon. Much credit is due to the Hon. Sec., Mr. Fromow, and the Committee, for the success of the Show.

BEDFORD AND BEDFORDSHIRE HORTICULTURAL SOCIETY.

THE third annual Exhibition of this Society was held on Wednesday last in grounds on the Goldington Road, Bedford, when a large and in most respects a satisfactory display resulted. As, however, the aims and objects of this Society are mostly confined to the county the show of plants was ineffective and largely mediocre, the prizes offered being meagre, and had it not been for an extensive and tastefully arranged collection from Mr. J. C. Shppard of the Bedford Nurseries, exhibited not for competition, and a few good Ferns from the gardens of Mr. F. Howard and Miss Rose Trevor of Burnham Hall, the plant tent would not have appeared to advantage, the few plants that were put in competition being mounted on a most unsightly and unbecoming wooden stage. It is, however, to the credit of some of the local amateurs that they were able successfully to compete in the gardeners' class, the *Pelargoniums* from Mr. J. W. D. Harrison of Bedford being especially noticeable. In the classes for fruit some good collections were staged, the chief prizes falling to Mr. J. R. Allis, gardener to Major Shuttleworth, Old Warden; Mr. Galloway of Burnham Hall Gardens; and Mr. Waller, gardener to James Howard, Esq. The prizes for black Grapes were awarded to Mr. Allis, Mr. Galloway, and C. Howard, Esq., of Biddenham; and those for white Grapes to Mr. C. Howard, Waller, and Galloway in the order named. Mr. Allis was also successful in the classes for Melons, Peaches, and Strawberries, the fruit upon the whole being an advance in quality and quantity upon the last year's display.

Vegetables were well represented for the season, Mr. Waller in the leading class for twelve kinds secured first place, closely followed by Mr. Robinson, gardener to F. Howard Esq., Abbey Close, Bedford, and Mr. Ellis, gardener to —Nixon, Esq., Petherley, Bedford. Fine collections of Peas were also put up, Mr. Waller taking first place with very fine and handsome specimens, the most noticeable amongst which were *Duke of Albany*, *Laxton's British Lion*, and *Sir A. F. Milbank*. Mr. Waller was also first for a collection of Potatoes, but here and throughout the Show the "noble" tuber was somewhat ignoble both in size and appearance.

The cottagers' department was most satisfactorily represented and well contested in the classes for fruits, vegetables and flowers, showing that the Society's efforts in this direction are well appreciated both in Bedford and the rural parishes. A noticeable feature of the Show was the well-represented exhibit of wild flowers and Grapes, botanically named, both mounted dry and in the natural, classes being provided both for boys and girls. The collections, which were generally correctly named, showed a considerable and increasing botanical taste, for which there is ample scope amongst the large number of boys and girls who receive their education in Bedford, and as this taste has been ably and zealously fostered by Mr. A. Ransome and a few other residents, it is gratifying to find their labours bearing such good fruit.

The *Rose* and cut herbaceous and bulbous flowers in the special class open to all England, were, as last year at Bedford, the most attractive and important part of the Show, the flowers being above the average shown this season, and the competition good. In the class for forty-eight cut *Roses* (open to all) Mr. B. R. Cant of Colchester set up a stand which has been perhaps only surpassed by himself on one occasion this season; the blooms were remarkably fresh, high coloured, of large size, and evenly matched; to this stand the Judges had no difficulty in awarding the cup. Mr. Cant's most striking flowers were *Mary Pochin*, a beautiful shelly petalled bloom; *Reynolds Hole*, *Countess of Rosebery*, *Annie Laxton*, *Jean Souperet*, *Marie Verdier*, *Ulrich Brunner*, *Julie Curétien*, *Harrison Weir*, *Merveille de Lyon*, *A. K. Williams*, *Lady Sheffield*, *Mons. Beuot Comte*, *Prince Arthur*, and *Madame de Watteville*. For second and third places the competition between Messrs. J. Barrall & Co. of How House Nurseries, Cambridge, and Messrs. Paul & Son, the Old Nurseries, Chesham, was close, the former firm being ultimately placed second and the latter third. In Messrs. Barrall's stand, *Marie Bouman*, *Mlle. E. Verdier*, *Madame Nichury*, *Comtesse d'Oxford*, *Chas. Lefebvre*, *Dr. Sewell*, *Henri Ledehaux*, *Julie Touvais*, and *J. S. Mill* showed to best advantage, and in Messrs. Paul's, *Nipheos*, *Madame de Watteville*, *Princesse de Reigate*, *A. K. Williams*, *Boileau*, and *Abel Carrière* were conspicuously good. For the eighteen *Teas*, open to all, Mr. B. R. Cant was again first, having *Comtesse de Nadaillac*, *Innocent Piroia*, *Souvenir d'Elise*, *Devoniensis*, *Souvenir d'un Ami*, *Madame Cusin*, *Madame Baby*, and *Beauté de l'Europe* in good form. The Rev. W. H. Jackson of Stagden Vicarage was second with very clean and beautiful blooms of mostly the same varieties; and Messrs. Paul and Son third.

In the amateurs' open class for twenty-four cut *Roses* Mr. E. B. Lindsell of Bearton, Hitchin, well sustained the prominent position he has assumed

this season, and was deservedly first with a very fine stand, his flowers being very clean and fresh, the most attractive of which were Heinrich Schultheis, Horace Vernet, Maréchal Niel, Madame Luizet, Merveille de Lyon, Beauty of Waltham, Duc de Wellington, Chas. Darwin, Catherine Mermet, and Lady Mary Fitzwilliam. Mr. E. Mawley, Reigate, was second, having good blooms of Madame Lacharme, H. Ledebaux, François Michelin, Marie Verdier, and Horace Vernet. Mr. J. L. Curtis, Chatteris, Cambridgeshire, was an approximate third. In the same division for twelve Teas and Noisettes Mr. Lindsell was again first, Mr. Jackson second, and Mr. Curtis third. Mr. Jackson was also successful with a fine stand of twenty-four Roses in the local class for amateurs, and in several other local classes. For the collection of cut hardy herbaceous or bulbous flowers there was a fine display and good competition, Messrs. Burrell & Co. and Messrs. Paul & Son being nearly equally matched, the Judges, however, placing Messrs. Burrell's very attractive stand first, and Messrs. Paul second; the latter firm, however, had a large collection richer in rarities. Altogether the Show was a decided success, and although there is room for a considerable improvement in the plant department, a material advance on last year's display in most departments was apparent. In connection with the Show the Bedfordshire Bee-keepers' Association had their annual gathering.

NOTTS HORTICULTURAL AND BOTANICAL SOCIETY SHOW.

In dull but otherwise pleasant weather the fourth annual Show of this Society was held in the charming grounds of Mapperley Hall, the picturesque residence of his worship the Mayor of Nottingham, Alderman William Lambert, J.P., which is distant from the heart of the town about one mile, and readily reached by trains which run frequently to the Show ground. The Mayor personally attended, and in a few well-chosen remarks declared the Show open, which during the afternoon was visited by a good number of the *élite* of the neighbourhood, and in the evening by the general public. The arrangements reflected the greatest credit upon the indefatigable Secretary, Mr. E. Steward; the Treasurer, Mr. Alfred Page; and the energetic Chairman of Committee, Mr. F. W. Cooper, whose untiring efforts on behalf of the Society is worthy of the greatest praise. The Show remained open two days, about 2000 people attending on the second, whilst 10,000 persons paid for admission in the evening to witness a display of fireworks by Pain of London, plainly showing the desirability of introducing popular amusements at popular prices in connection with flower shows where a good financial result is needed.

Class 1.—Groups of plants, in a space of 255 super. feet, brought three exhibitors, £15, £10, and £7 being the amounts off-red. The first prize was worthily taken by Lady Ossington of Ossington Hall, Newark (gardener, Mr. Lyons). The centre plant was a well-furnished example of *Areca lutescens* well raised above the level of the ground, and was backed up with many well coloured *Crotons*, *Pandanus Veitchii*, *Eulalia japonica* variegata, and a few pretty *Saccolabiums* were suspended over the group. Standing prominently in bold relief were several pretty plants of *Dracæna Goldiana*, and *Asparagus plumosus* with berried plants of *Nertera depressa* peeping from a groundwork of common wood moss. The second prize was secured by that noted competitor, who on all former occasions occupied the premier positions, Mr. Samuel Thacker. The specimens were fresh and healthy. A large *Seaforthia elegans* was the centre plant, which was surrounded by *Cycas revoluta* and *Cocos Weddelliana*, and many well coloured *Crotons* and *Dracænas* were worked into a massive bank of foliage, from which sprung some *Lilium auratum*, which did not furnish any additional charm to the whole. Smaller plants in great variety were judiciously employed near the sides. The group was a very striking one, and had it not contained too many bulky specimens in the centre it would no doubt have taken a higher position. The third prize went to T. H. Oakes, Esq., Riddings House, Alfreton (gardener, Mr. Ward), who put a most creditable group, containing many fine examples, many of which were too large as in the previous case.

In class 2, for a group of plants in a space of 120 feet, the prizes being £8, £5, and £3, William Lambert, Esq., J.P., Mapperley Hall, Nottingham (gardener, Mr. Massey), carried off the first award with a very evenly balanced group, which was arranged with a groundwork of common moss. *Crotons*, *Dracænas*, *Caladiums*, and *Palms* were conspicuous amongst foliage plants, whilst *Canterbury Bells*, *Gladiolus*, and *Francoa ramosa* were the chief amongst flowering plants with a good sprinkling of *Nertera depressa*. Second honours fell to Lieut.-Col. Seely of Sherwood Lodge, Nottingham (gardener, Mr. Swanwick), who had an effective arrangement, a number of *Cocos Weddelliana* giving a beautiful finish to a combination of fine-foliage and flowering plants very skillfully disposed. The third award went to Mr. Samuel Thacker with a rather heavy group. For six stove and greenhouse plants, three in flower and three fine or ornamental foliage, the first fell to T. H. Oakes, Esq., with good examples of *Erica ventricosa* and *Kalosanthus coccinea*, &c.; second C. J. Cox, Esq., Basford (gardener, Mr. Meadows), whose chief plants were a good *Bougainvillea* and *Stephanotis*, Lady Ossington being third. For six ornamental foliage plants C. J. Cox, Esq., was first with a well-balanced collection, his best plants being *Areca lutescens* and *Alcasia gigantea*; Lady Ossington was second with a good half dozen, amongst which was remarkably well-grown plant of *Pandanus Veitchii*. For a single specimen stove plant in flower Messrs. J. R. Pearson and Sons, Chilwell, gained the first honours with a huge fairly well flowered *Dipladenia holiensis*; no other prize being awarded in this class. For one ornamental foliage plant Mr. S. Thacker was first with a fine *Croton* *Queen Victoria*, the second falling to C. J. Cox, Esq. Table plants were well shown, T. H. Oakes, Esq., leading with fresh healthy plants, Lady Ossington second, and Lieut.-Col. Seely third.

Ferns were well represented. Lady Ossington was first with six, her best plants being *Davallia Mooreana*, *Adiantum Sanctæ Catherineæ*, *Patynerium alcyonæ*, and a good *Gymnogramma*; C. J. Cox, Esq., was second. For three Ferns C. J. Cox, Esq., was the only exhibitor; and for a pair of Tree Ferns W. H. Farmer, Esq., Alexandra Park (gardener, Mr. Attenborough), was first with small *Dicksonias*; and J. Booth, Esq., Fern House (gardener, Mr. Ralph), second with the same species. *Caladiums*, *Pelargoniums*, *Fuchsias*, and *Begonias* were all poorly represented. Orchids were also poorly shown, C. J. Cox, Esq., being the only exhibitor with three plants and one specimen.

Cut stove and greenhouse flowers were well shown. For twelve varieties

T. H. Oakes, Esq., was first; Mr. C. J. Ince, Wollaton Hall Gardens, second; and C. J. Cox, Esq., third. Bouquets, wreaths, and head-dresses were excellent, Messrs. Perkins & Sons, Coventry, carrying all leading honours. In the class for dinner tables laid for ten persons there were two entries, each table being heavily laden with plate and glass, little attention being paid to fruits and flowers. Alderman Manning was first, and Mr. J. R. Bingham second. Messrs. J. R. Pearson & Sons obtained first honours for a charming collection of herbaceous flowers; C. J. Ince and H. Ashwell, Esq., Woodthorpe Grange, sharing the remaining honours.

Fruit was well represented. For collections of six distinct varieties the Duke of St. Albans, Bestwood Lodge (gardener, Mr. Edmonds), secured the first prize with remarkably well-coloured Black Hamburg Grapes, Royal George Peaches, Lord Napier Nectarines, Brown Turkey Figs, Prestagne M 1 m, and a Queen Pine. Second, Hussy Packe, Esq., Prestwold Hall (gardener, Mr. Roberts); third, T. H. Oakes, Esq. The Duke of St. Albans obtained leading honours with single dishes of Royal George Peaches and Lord Napier Nectarines. For two bunches of Black Grapes Hussy Packe, Esq., was first with well-coloured Black Hamburg; J. T. Fairfield, Esq., Staplefield (gardener, Mr. Forrests) being a close second. For two bunches of white Grapes Hussy Packe, Esq., was again first with well-finished Muscat of Alexandria; and T. H. Oakes, Esq., second. Melons and Pines were good, the Duke of St. Albans being the chief prizewinner. Vegetables were fairly well shown, T. H. Oakes, Esq., and Mrs. Hornsby, Grantbam, being the principal prizetakers.

Mr. B. S. Williams, Holloway, had a large and varied collection of new and rare plants, for which the Society's certificate of merit was awarded. Messrs. J. R. Pearson & Sons, Chilwell, also sent a fine group; and Mr. S. Bardell of Stapleford had a large collection of hardy shrubs, summer arbours, rustic chairs, and rockwork.—J. H. W.

HULL.

It is not easy to imagine a more suitable place for an exhibition of the products of horticulture than the Botanic Gardens, Hull. The inhabitants of the town ought to be proud of these gardens, and support them well, for they are assuredly very enjoyable. Though only planted some six years, the trees have made such satisfactory progress that the appearance of "newness" is fast passing from the grounds. Mr. McMahon, the energetic and talented curator, has worked wonders in completing and beautifying the gardens. The clump of trees, margined with a profusion of hardy flowers in formal masses of annuals, groups of *Canterbury Bells*, and magnificent *Foxgloves*, are quite imposing, the grounds being altogether most cheerful and in excellent order.

Great preparations had been made for the Exhibition, which opened on Thursday last, the schedule containing no less than 127 classes, apart from nineteen more in the implement, &c., department. The plants, flowers, and fruit were arranged in four marquees, two of them of great magnitude; and if these had not been of great strength too they must have been blown away, for the wind swept like a tornado across the level country and caused some injury. The fruit tent could with difficulty be kept up till the judging was completed, and the produce was then removed to safer quarters. A great portion of one side of the marquee that contained the specimen plants and Roses was blown out, plants were knocked over like ninepins, and if the lids had not been quickly placed over the Roses the blooms would have been driven out of the stands. Mr. Cypher's grand plants were in great jeopardy, but had not sustained material injury when we left the grounds. Everything was done that could be done to mitigate the inconvenience arising from the hoisterous day, which was fortunately fine, and a goodly company attended the opening ceremony. This, in the unavoidable absence of the Mayor, was conducted by Mr. George Bohn, C.E., the esteemed Chairman of the Hull, East Riding, and North Lincolnshire Agricultural Society, and a supporter of all good works.

It is not possible to give anything like a complete report of the exhibits, as no prize cards were attached to them for some hours after the judging was completed. This is disappointing to early visitors, who are the best supporters of shows, and are naturally desirous of seeing to whom the honours are awarded. The Secretaries worked laboriously, but the "system" was against them, and it cannot be very difficult to devise a method that would be easier for the officials and better for all. The Secretary is still young, and the competitors have perhaps yet to learn that experienced and independent judges would as soon put their fingers into a fire as to run up a card containing the name of an exhibitor on the other side. All they care to see are the class and exhibitor's number on the back of the cards, and as soon as the awards are made the prize tables can be attached in a moment. That plan, or some modification of it, is adopted at all the best shows in the kingdom and answers well.

Apart from the grand plants with which Mr. Cypher of Cheltenham won the Society's gold medal and first prize of £15, perhaps the most interesting and successful department of the Show as regards plants was that embracing the groups arranged for effect; not that the arrangements were of the highest possible merit, or anything of that kind, but because the competition was good. The groups were semicircular in form and disposed at intervals round the sides of the tent, decorated dinner tables being placed at intervals down the centre, separated by Tree Ferns and tall Palms, abundance of room being left for visitors to inspect the exhibits.

Four groups of 200 square feet were placed in competition, the prizes being awarded to Sir A. R. Rolfe, M.P., Mr. G. Cottam, and Mr. R. Simpson, in the order named. The first prize group was composed mainly of Palms, White Lilies, *Agapanthus*, *Tuberous Begonias*, *Orchids*, *Crotons*, &c., edged with *Isolepis*, *Gloxinias*, small *Coleuses*, and Ferns. The plants were fresh, clean, healthy, and not crowded, but too smoothly arranged towards the front. The back was particularly good, and the group undoubtedly merited its position. We regret our inability to give the name of the gardener who grew the plants and arranged them so well. The second prize group consisted of Palms, Ferns, Yuccas, and *Dracænas*, rising from a bed of low Ferns and flowering plants, edged with *Isolepis*, *Panicum*, and *Sedum Sieboldi* variegata, all clean and healthy, but the base too much packed, several of the flowering plants being almost buried. The third group was at the first glance very formidable by prominent Tree Ferns, a good *Cordyline*, and several variegated Maples, but the arrangement was in a great measure spoilt by the "crushing in" of *Pelargoniums*, *Petunias*,

and Coleuses. In the smaller group class, space 100 square feet, Messrs. G. Cottam, R. Simpson, and W. Glossop were the successful competitors, the first named being far ahead with a free, elegant, yet bright arrangement of flowering and fine-foliaged plants. The second prize group was weakened by packing plants of variegated grass on the top of other pots, imparting an artificial appearance that nearly lost it its position. The third prize arrangement was a bold mass of, or bank of, plants, but all the pots in the front row visible, a great fault in arranging plants for effect. While noticing these collections it will not be inappropriate to refer to a particularly meritorious and diversified assortment of plants arranged by Messrs. E. P. Dixon & Son, nurserymen, not for competition. Very striking amongst other healthy stove and greenhouse plants were *Hydrangea hortensis* and *Paniculata grandiflora*. Orchids imparted richness and choice Conifers massiveness to this valuable contribution to the Show. It was very highly commended by the Judges.

Mr. Cypher was without a competitor in the class for sixteen specimen plants, ten in flower, but he none the less merited the prize above mentioned, for he staged splendidly. His plants have so often been mentioned that it would be superfluous to repeat their names. Mr. Cypher was also the only exhibitor of Orchids, winning the chief prize offered for six plants with *Saccolabium guttatum*, *Cattleya Mossiae*, and *Wallisi*, *Dendrobium Pierardi*, *Epidendrum vitellinum majus*, and *Cypripedium Lawrencianum*, all of medium size and well flowered. Sir A. R. Rolit secured the first prize for ten ornamental-foliaged plants with fine specimens, followed by Mr. Simpson. Prizes in other classes for stove and greenhouse plants were won by Mr. Glossop, Mrs. Ross, Mr. A. Wilson, and Mr. W. F. Jameson. The Rev. Canon Newton staged very fine Lycopodiums, and well won the first prize. Passing the minor classes for plants we come to the cut flowers.

Roses were both numerous and good, not a few stands being of first-class merit, notably those of Messrs. Harkness & Son, Bedale, who received the first prize for thirty-six, and Mr. Ismay Fisher, Scawby, who was the premier exhibitor of twenty-four blooms: Mr. Swales, Beverley, and Mr. May having the remaining prizes in those classes. The Bedale Roses were very fine indeed, and included the finest Rose of the Show, if not of the season, a magnificent bloom of *Merveille de Lyon*. Mr. Fisher far outdistanced all other amateurs and, as intimated, some nurserymen. His varieties consisted of *Louis Van Houtte*, *La France*, *Souvenir d'Elise* (all very fine), *Felix Genero*, *Princess Beatrice*, *Queen of Queens*, *Madame Gabriel Luizet*, *Egeria*, *Charles Lefevre*, *Thérèse Levet*, *E. Y. Teas*, *Fisher Holmes*, *Jean Cherpin*, *Belle Lyonnaise* (beautiful), *Richard Wallace*, *Senateur Vaisse* (very bright), *Dupuy Jamain*, *Jean Ducher*, *Madame Lamhard*, *Madame Cusin*, *Princess of Wales*, *Marie Baumann*, *Marie Verdier*, and *Marie Rady*. Messrs. H. May, H. Norton, J. H. Fisher, R. Simpson, and H. Staunton were successful in the smaller classes.

Hardy flowers were well exhibited by Messrs. A. Wilson, H. Staunton, and G. Cottam, who were adjudged the prizes in the order named; and Messrs. Harkness & Sons, W. Hotham, and J. H. Fisher were the prize-winners with bright and excellent stands of Pansies.

The display of fruit was limited but generally good. Mr. A. Wilson was awarded the first prize for a collection, the best Grapes, and very fine they were, coming from the gardens of Lord Hotham, Black Prince, Buckland Sweetwater, Foster's Seedling, and Black Hamburgh being specially meritorious. Mr. A. Wilson, Mr. G. E. Sbaw, Mr. W. Glossop, and Mrs. E. Smith also exhibited successfully and well. Mr. Wilson staged the best Melon, Mr. A. Swanson the best Peaches, and Mr. Ridsdale, gardener to the Marquis of Ripon, the best hush fruits. He was also the most successful exhibitor in the vegetable classes with excellent produce.

The display of garden structures, implements, and appliances was somewhat extensive. The greatest aggregate contributions were from Messrs. Richardson & Co., Darlington, and King & Co., Hull, to whom silver medals were awarded. Messrs. Richardson were also awarded a certificate for their *Ivanhoe* boiler for heating small greenhouses—an excellent little apparatus, square in form, two sides lined with fire clay to retain heat, the other two sides containing water. The Darlington powerful hooded tubular boiler was also exhibited; also useful span-roofed frames, for which a bronze medal was adjudged. A similar award was granted to Messrs. Inman for garden seats and rustic work, also to Messrs. Alfred Peel & Sons for amateurs' greenhouses, and a certificate was awarded to the Horticultural and Agricultural Chemical Company, Tonbridge, for their syringing stand, used for dressing plants with insecticide without wasting it. The above is an outline of the Show, anything like a complete report being impossible under the circumstances. We trust the event would prove very successful.

BRISTOL SUMMER SHOW.—JULY 14TH AND 15TH.

It is some years since the Clifton Society held a summer show, and in all probability the experiment will not again be repeated. No better place than the Zoological Gardens for holding an horticultural exhibition could well be found, while everything was done on the part of the Secretary, Mr. Polkinhorn, and Committee of practical gardeners to make the Show a success; but all apparently to no purpose, the attendance of visitors in the early part of the opening day being very thin indeed.

STOVE AND GREENHOUSE PLANTS were well shown by local growers, the fine-foliaged section being the most creditable. With nine specimens of these Mr. W. Rye, gardener to J. Derham, Esq., Snayd Park, was easily first, these including very fine *Crotons* *Weismanni* and *irregularis*, *Cycas revoluta*, *Areca sapida*, and *A. lutescens*. Mr. A. Hancock, gardener to A. W. Summers, Esq., was a creditable second, his best plants being *Latania borbonica*, *Croton undulatum*, and *Croton Youngi*; the remaining prizes being well won by Mr. F. Edwards, gardener to J. Lysaght, Esq. With six varieties, Mr. R. Morse, gardener to S. Budgett, Esq., was first, *Croton pictus*, *Dracæna Greigi*, and *Areca lutescens* being most noteworthy. Mr. Rye was second, and Mr. J. Lee, gardener to T. M. Miller, Esq., third. The first prize for six flowering plants was awarded to Mr. Rye, who had *Bongaiuvilla glabra*, *Statice Holfordi*, *Dipladenia Brearleyana*, and *Allamanda Hendersoni* in fairly good condition. Mr. W. Dobson was a creditable second, his best being *Clerodendron Balfourianum* and *Stephanotis floribunda*. Mr. Rye was also first for three specimens; Mr. F. Perry, gardener to H. C. Miles, Esq., second, and Mr. J. Lee third.

Table plants were well shown, though the majority were rather larger

than are usually preferred. Mr. R. Morse was first, having *Croton Johannis*, *C. Warreni*, *Dracæna Wilsoni*, *D. nigro-ruhra*, *Pandanus Veitchii*, and *Cocos Weddelliana* in good condition. Mr. W. H. Bannister, gardener to H. St. Vincent Ames, Esq., was a good second; and Mr. G. Shelton, gardener to W. K. Wait, Esq., third. The best six *Caladiums* were shown by Mr. Rye, the second prize going to Mr. J. H. Vallance, gardener to J. C. Wall, Esq.; and the third to Mr. J. Lee. Coleuses were largely shown and in good variety. With these Mr. Vallance was first, Mr. Bannister second, and Mr. E. T. Hill third. Mr. F. Edwards was first for *Gloxinias*, and Mr. Rye for *Achimenes*. Begonias were well shown by several growers, but the varieties, as a rule, were very poor. Mr. G. Shelton was first; Mr. H. Maidment, gardener to Mrs. Naish, second; Mr. F. Perry third, and an extra was given to Mr. R. Morse. Only a few Orchids were shown, and some of these were poor. Mr. F. Perry was first with four varieties, these consisting of *Disa grandiflora*, *Epidendrum vitellinum*, *Odontoglossum Lindleyanum*, and *Aerides odoratum*. With a single plant Mr. J. Lee was first with a strongly flowered *Oncidium flexuosum*, Mr. Perry second with a good pan of *Disa grandiflora*, and Mr. J. Stapleton third with *Oncidium flexuosum*, extra strong. Fuchsias were principally exhibited by Mr. J. Harris, gardener to the Zoological Society, and his plants fully merited the awards of first and extra prizes. Mr. Rye was first for Ferns, and Mr. Bannister second, both having good examples of well-known varieties.

CUT ROSES.—On the whole the display of these was highly creditable, though the lateness of the fixture evidently affected the quality of the exhibits in nearly every case. The best forty-eight distinct varieties were shown by Mr. J. Mattock, Oxford, and included good fresh examples of *Madame Ferrier*, *Sophie Tropot*, *Marie Baumann*, *Alfred Colomb*, *Maréchal Niel*, *Merveille de Lyon*, *Madame Rothschild*, *Senateur Vaisse*, *Souvenir d'Elise Vardon*, *Comtesse de Nadaillac*, *Souvenir d'un Ami*, *Dupuy Jamain*, *Thérèse Levet*, *Mons. E. Y. Teas*, and *Etienne Levet*. Messrs. Cooling and Sons, Bath, were a good second, their best being *Duke of Wellington*, *François Michelin*, *Duke of Teck*, *Maurice Bernardin*, *Alfred Dumesnil*, and *Fisher Holmes*. Messrs. Keynes, Williams & Co., Salisbury, were third, and three other lots were brought. Messrs. Curtis, Sanford & Co., Torquay, had the best twenty-four distinct varieties, the pick of the lot as we saw them consisting of *Duke of Edinburgh*, *Annie Wood*, *Ulrich Brunner*, *Alfred Colomb*, and *Charles Lefevre*. Messrs. Cooling & Son were again second, and Mr. J. Mattock third. The best twelve varieties were staged by Messrs. Cooling & Son, who had fine fresh examples of *Lady Sheffield*, *Julie Touvais*, *Lady Mary Fitzwilliam*, *A. Dumesnil*, *Madame L. Pernet*, *H. P. Wilder*, *Lady McKeith*, *François Michelin*, and *Marie Baumann*. Messrs. Curtis, Sanford & Co. were second, and Mr. J. Mattock third. Mr. J. Mattock was very easily first for eighteen Teas, distinct, these including fine fresh blooms of *Niphetos*, *Souvenir d'Elise Vardon*, *Maréchal Niel*, *Madame Hippolyte Jamain*, *Souvenir d'un Ami*, *Catherine Mermet*, *David Pradel*, *La Boule d'Or* (a lovely yellow), *Comtesse de Nadaillac*, and *Madame Willermoz*. Messrs. Cooling & Sons were second, and Mr. W. Smith third. The amateurs' exhibits, with one exception—viz., those which won nearly all the first prizes—were very poor. Mr. J. Campbell, gardener to S. P. Budd, Esq., Bath, had firsts for twenty-four distinct, twelve distinct, and six distinct varieties, and also for twelve Teas. Other successful exhibitors were Mr. E. S. Cole, gardener to W. Pethick, Esq.; Mr. J. Pearce, gardener to H. Derham, Esq.; Mr. F. Edwards; Mr. J. Clarke, gardener to J. S. Pope, Esq. Mr. E. S. Cole was also most successful with baskets and bouquets of Roses, and also with *epergues* and bouquets of mixed flowers, displaying excellent taste in each instance. Messrs. Hookings and E. T. Hill were also prizewinners in this department, while the successful exhibitors of collections of hardy perennials and hardy annuals, of which there was a grand display, were respectively Messrs. A. A. Walters, R. Richards, and W. Smith, and Messrs. W. Smith, A. A. Walters, and F. Perry, who received the awards in the order given in each instance.

FRUIT AND VEGETABLES.—Nine fairly good stands of Black Hamburgh Grapes were shown, the first prize going to Mr. J. H. Vallance, who had medium-sized well-finished bunches; Captain Alcock, who had smaller bunches and larger berries following, and Mr. W. H. Bannister was a creditable third. Fewer white Grapes were shown, and none were really ripe. Mr. Vallance was first for Foster's Seedling, Mr. E. Robinson second with *Golden Champion*, berries large but spotted somewhat, and Mr. J. Stapleton third. Melons were not very good. Mr. J. Gaskell, gardener to W. A. Jones, Esq., was first with *Blenheim Orange*; Mr. Rye second with the same variety, and Mr. E. Miller, gardener to F. Tagart, Esq., third. The latter exhibitor was first in the class for Peaches, having fairly good *Royal George*, and Mr. Vallance was second, and Mr. Miller was also first for Nectarines, winning with a pretty dish of *Pine Apple*. The display of Strawberries, considering the season, was remarkably good. Mr. J. House had the best four varieties, these consisting of *Loxford Hall Seedling*, *Countess*, *Souvenir de Kieff*, and *British Queen*, all in fine condition. Mr. J. Fudge was second and Mr. W. H. Bannister third. Mr. Bannister was first with a single dish, having a fine dish of *Countess*, a flat-fruited variety with seeds very prominent and of fairly good quality; Mr. Garraway, Bath, being second with *Goliath*, large and good, and Mr. Fudge third with *Loxford Hall Seedling*. The best collection of vegetables was staged by Mr. G. Garraway, Mr. W. H. Bannister being second and Mr. E. Miller third. Mr. R. Bow, gardener to F. W. George, Esq., had the best Cucumbers, a fairly good brace of *Carter's Champion*, and a pretty dish of *Tomato Hatbaway's Excelsior*, staged by Mr. P. Garnish, also won a first prize. Mr. R. Bow was first for both round and kidney Potatoes, showing *Sutton's Early Regent* and *Sutton's Kidney* respectively.

MISCELLANEOUS EXHIBITS.—Messrs. Garraway & Co., Durdham Down Nursery, Clifton, arranged a pretty group of flowering and fine-foliaged plants and Ferns, and Mr. T. Bush, nurseryman, Bristol, also sent a number of good plants, which were effectively grouped in different places. A good strain of *Petunias* was exhibited by Mr. J. Bradner, Arley Hill Nursery, and several stands of cut Roses were also contributed by a few growers.

THE FLOWER AND FRUIT SHOWS.

As far as my memory serves the subject of borrowing and buying fruits and vegetables by would-be exhibitors was slightly ventilated last summer or in autumn, and now is the time to draw attention of secretaries

and judges to the same subject, one that will stand considerable thrashing just now if you can find space in our valuable Journal. In a flourishing town in the midlands, and at their successful flower, fruit, and vegetable Show last September, two greengrocers told me they had been applied to for International Kidney Potatoes to make up dishes and numbers of sets by exhibitors who could not quite make up the number for the dish, be it six or twelve. In the same town and county a gardener of a friend of mine was asked to lend a Melon for the day. The variety, I think, was Eastnor Castle, seed of which I gave to the said friend, and he had much finer specimens than I saw at the Show. This practice is an old one, but means ought to be found to stop it. It is not confined to professional gardeners, it has been done by both amateurs and cottagers. Some cottagers' exhibits of International Kidney Potatoes were so remarkably fine they attracted my attention. I thought these exhibitors were decidedly going ahead, better samples were not produced from some of the first Potato growers. I found out that at least two exhibits were made up to the required number by purchases from shop-keepers who buy from some of the first gardeners in the midland county referred to. Now is the time to give a caution.

Another subject might also be mentioned, in all fairness to the real amateurs, of those who are now obliged to show in classes where other persons claim to be amateurs, but who show their Roses from Rose farms of acres of extent—à la Cranston, Cant, Paul, Rivers, Jefferies and Co., who keep professional Rose gardeners, who do all the budding and grafting. Amateur gardeners used to be understood to consist of ladies and gentlemen, the clergy to a large extent, who do all the culture themselves with members of their families, but who cannot indulge their floricultural tastes in acres, professional gardeners, &c., and who do all the work *con amore* without acres of Roses, and without help, quite different from those who are now showing one day at Liverpool, next at Crystal Palace, next at Hereford, next, perhaps, far north or far south. Do not you agree with me that things are not at present quite fair to the real amateurs, and want a little supervision by those whom it concerns to keep each class as it ought to be—purely professional, and purely amateur? I apologise for the length of this letter, but I have not troubled you with one for the past two years, though I read my Journal regularly, and bind it, too, for reference.—SAXORING.

[No apology is needed for a letter of this kind, and everything that can be done should be done to check the reprehensible practices above indicated where they are found to exist.]

PENLLERGARE.

THE residence of J. T. D. Llewelyn, Esq., stands on one of the finest sites for natural beauty that could be found in the county of Glamorgan. The elevation is some 300 feet above the level of the sea. The house, a commodious building of two storeys, commands extensive views from all sides, embracing rock, wood, water, hill and dale, and rich pasture land. The principal entrance to the demesne is a mile and a half from the Cockett station on the Great Western Railway, and about four miles from the town of Swansea. The private approach is a mile and a half in length. It is conducted through the park and along the breast of a wooded hill, and cut out of the solid rock in many places. As it ascends the hill the scenery increases in grandeur till the house is reached. On the left the ground rises to a considerable height above the drive, and on the right it descends far down to the valley, where flows the river Llan, a rapid trout stream, which passes through two lakes at different levels as it winds its way through the picturesque grounds of Penllergare on its course to the sea. The banks on both sides of the valley are covered with heavy timber, principally Oaks, in the best of health, while here and there large trees of Hemlock Spruce (*Abies canadensis*), *Taxodium sempervirens*, *Wellingtonia gigantea*, and *Cryptomeria japonica* stand out in bold relief, lit up in many places by a glorious undergrowth of the best species and varieties of Rhododendrons and hardy Azaleas, some of which are of large dimensions and in the most luxuriant health, the soil and situation being favourable to their growth.

As the house is neared the scenery becomes still grander. The valley narrows and deepens, and the drive for some distance runs close to the edge of a precipice, with only a frail rustic wooden rail between the road and it for protection; or, what is more reasonable, to mark the edge of the cliff, which descends perpendicularly 100 feet or more below the road. The view from this point, looking to the right over the tops of the trees and down to the bottom of the glen, is charming. The ground from the foot of the precipice sweeps boldly down to the river, and then rises rapidly to a great height on the opposite side, completely shutting in the view. The view from the left side of the road is hemmed in by the rock out of which it is cut, and the rising ground above it. Advantage has been taken of the narrowness of the valley here to make a lake by throwing a bank across it and damming the stream. The lake is beautifully situated, and its surface along the margin is covered with different kinds of Water Lilies, while the steep banks on all sides are wooded down to the water's edge. In the middle of the bank, at the lower end of the lake, there is a strong bulwark composed of large blocks of stone, which forms the resisting power to the heavy weight of water at a point where the lake forms a cascade, which leaps holdly over a fall of 18 feet, and then the river assumes its natural course down the valley till it is again interrupted, where it forms another lake of greater dimensions. Both lakes are well stocked with trout, which afford good sport to Mr. Llewelyn and his friends from boats during the fishing season. From this point the drive continues to rise gradually till it emerges in front of the mansion on

a small open plateau, which is neatly laid out in shrubberies, flower beds and plots of well-kept short grass. Here the ground immediately to the right descends to the lake, and for some distance past the east side of the house. Shady winding walks lead from the mansion down to the lake, and along its side nearest the house, past the cascade, and down the right side of the stream for a great distance till it is crossed by a bridge, where the walks diverge into the woods and ascend the opposite bank. *Osmunda regalis* and other British Ferns in great variety grow luxuriantly in every available spot, and fringe the banks and sides of the stream abundantly.

The immense quantities of Rhododendrons, species and hybrids, that are grown here form one of the principal features of the place. Rhododendrons are growing everywhere about the grounds—in shrubberies, woods, and in clumps on the open lawn, with a luxuriance to be met with only in a few places favoured by soil and climate. Mr. Llewelyn and his father before him have taken great interest in the cultivation and introduction of new species and varieties of Rhododendrons that will stand the climate of Penllergare, and their efforts in this, as evidenced by the fine collections, have been crowned with no small degree of success. Thousands of seedlings from the best species and varieties are raised annually in boxes and planted out in nursery lines in succession, where they remain until they are large enough to be planted permanently in favourable situations in the woods or elsewhere. The seeds are sown early in spring and the boxes placed in a vinery for the seeds to germinate, which they do freely to judge from the boxes I saw covered with young plants as thickly as if it had been Mustard and Cress. The varieties consisted of the choicest kinds in cultivation, amongst which I observed the following:—*R. Viviani*, *R. eximium*, *R. Hodgsoni*, *R. harhatum*, *R. fulgens*, *R. cinnabarinum*, *R. ciliatum*, *R. Fortunei*, *R. Thompsoni*, *R. arhoreum*, *R. calophyllum*, and many others. In passing, I may say the Rhododendrons, at the time of my visit, were in full flower. I am sorry, however, that time did not permit of my noting the names and giving the dimensions of some of the adult plants which are growing here so plentifully.

The forcing and plant houses, with the exception of the conservatory, which is attached to the west side of the mansion, and some small plant houses to the right of it, are all in the kitchen garden, which lies on a higher level a little to the south of the residence, and is hidden from it and the finely kept grounds around it by a plantation of large trees.

The conservatory, a substantially built half-spanroofed structure, is slightly curved in its length to suit the wing of the building to which it is attached. It is about 60 feet long, 20 feet high, and broad in proportion, with a fountain and beds in the centre, and a narrow stage at the side of the path round the back wall. The wall is covered with Camellias and Orange trees, and the bed in the centre of the house is planted with large Camellias, Tree Ferns, and other greenhouse plants. Fuchsias and various climbers cover the rafters in front, and hang down in graceful festoons. The house contained a general collection of greenhouse plants, which were clean and healthy, and everything looked neat and orderly. Besides the plants in the conservatory the entrance hall of the mansion was neatly furnished with a miscellaneous collection of flowering plants, amongst which were a hatch of well-grown plants of an extra fine strain of *Calceolaria*.

Mr. Llewelyn devotes a great deal of time to the pursuit of natural history. He is a good entomologist, a keen florist, hybridiser, and arboriculturist, and it is but right to say he is ably assisted in horticulture and arboriculture by his genial and intelligent gardener, Mr. Warmington.

The observatory garden, which is entirely devoted to the culture of the rarest and choicest florist flowers, is laid out in small oblong beds for minutely observing the plants and flowers at all stages of their growth. Besides these and rockeries, it contains a great many pits and frames for growing rare and tender varieties. The large collections of Auricula, Carnation, Primula, Pansy, and other florist flowers grown here can scarcely be surpassed, if indeed equalled, in any private place in the kingdom. What is called the new garden adjoins this, and is partly enclosed by large shrubberies. It is a delightful piece of undulating pleasure ground tastefully laid out and planted with the choicest kinds of trees and shrubs. Amongst coniferous trees were good specimens of *Cryptomeria japonica*, *Thuopsis borealis*, *Cupressus Lawsoniana*, *Wellingtonia gigantea*, *Araucaria imbricata*, Hemlock Spruce, and many others, ranging in heights from 30 to 60 feet, and furnished to the ground with the most luxuriant growth. The bank of Rhododendrons and Azaleas were magnificent, and arranged in colour so as to produce the best effect while in flower. The broad gravel walks which wind through it are bordered by rich shrubberies, rare flowering plants and well kept short grass. The garden contains a good lawn tennis ground for recreation, and a cosy summerhouse to rest in and shun the heat, or to shelter from pelting showers. In an adjacent shady Pine plantation Mr. Llewelyn showed us a collection of some of the new and more tender kinds of Rhododendrons that he is trying to inure to the climate of Penllergare. The plants were making strong healthy growths, and Mr. Llewelyn is sanguine that many of them will prove hardy when planted in sheltered situations in the woods.

The kitchen garden, which lies high and exposed to the north-east, contains five acres, the forcing and plant houses, Melon ground, gardener's house, and hothy. The inner portion of the garden is enclosed by walls, and the outer portion by tall hedges and shrubberies for shelter. The ground is laid out in convenient quarters for cropping, which are divided by gravel walks. The borders on either side of the principal walks are planted with espalier and pyramidal fruit trees at suitable distances from the walk. The trees, however, do not grow freely nor bear fruit satisfac-

torily on account of the exposed situation of the garden. It is different with the trees on the walls, which grow vigorously and mature heavy crops of fruit in good seasons. There is a good Peach wall here with a projecting framework of glass under the coping, which affords protection to a fine lot of trees in the best of health, and at the time of my visit were laden with fruit the size of pigeons' eggs. The varieties consisted of Lord Palmerston, one of the best of the large late varieties which ripen in the end of September; Prince of Wales, another excellent late variety, fruit tender, melting, and juicy; Barrington, an old standard variety that should be grown in every collection; Early Alfred, which ripens in the beginning of August; Dr. Hogg, an excellent variety ripening in August; and Hardwick Nectarine, which is one of the hardiest and most prolific in cultivation. The different quarters in the kitchen garden were cropped systematically, each being filled with vegetables of one kind, the dwarfier and choicer sorts by themselves, and the cooler and stronger-growing kinds were treated in like manner, a quarter being devoted to Rhubarb, Artichokes, Asparagus, Peas, &c. The smaller fruits—Gooseberries, Currants, Raspberries, and Strawberries—were grown on the same principle.

The Melon ground is one of the best I have seen for some time. It is convenient to the forcing and plant houses, and is completely shut in and sheltered by high hedges. It contains a good many pits and frames for bedding and other plants, and plenty of open space for growing and plunging plants during the summer, and for storing hardy plants in winter. It is here that the seedling Rhododendrons, Azaleas, and coniferous plants are grown in boxes until they are sufficiently large to be bedded out in nursery lines. Mr. Warmington had growing here an excellent assortment of Lilliums in 11-inch pots, amongst which were *L. Fortunei*, *L. speciosum*, *L. longiflorum bicolor*, *L. marmoratum*, *L. sanguineum*, and others. They were growing in a compost of equal parts of peat and loam, which seemed to suit them admirably.

After leaving the Melon ground with its many objects of interest, we were shown through the forcing and plant houses. The first of these, a lean-to greenhouse, was furnished with a good selection of Tuberoses, Begonias, Vallotas, Pelargoniums, and a choice collection of cool Orchids. The roof was partly covered by a large plant of *Lapageria alba*, which grows vigorously and flowers freely, the flowers lasting for a long time in perfection before fading. Next to this is an Orchid house, which contains a rich collection of well-grown plants, clean and healthy. Mr. Llewelyn is a good orchidist, and perhaps it would not be too much to say that he inherits his love for them from his late father, who was deeply interested in their introduction and cultivation, that he and another gentleman employed a collector of Orchids between them long before Orchids became so common in this country. The following are a few of the varieties that were in flower or throwing up spikes at the time of my visit—*Cypripedium barbatum*, *C. Lowi*, *C. niveum*, *C. caudatum*, *C. Pearcei*, *C. superbiens*, *C. Lawrenceanum*, *C. Parishii*, *C. concolor*, *C. hirsutissimum*, *C. venustum*, *C. purpuratum*, and *C. Stonei*. In close proximity to the latter was a large plant of *Peristeria elata* throwing up five spikes of great strength, and five large clumps of *Dendrobium nobile* in 14-inch pots, each pot having a little forest of pseudo-bulbs. Besides these, there were fine pieces of *D. Dalhousianum*, *D. Wardianum*, *D. macrophyllum*, *D. pulchellum*, and others growing in boxes 2 feet square. There were also good pieces of *Aerides odoratum*, *A. crispum*, and a large plant of *A. odoratum purpurascens*, with seventy spikes, *Phalaenopsis grandiflora*, *Vanda Cathcarti*, *Phaius maculatus*, *Dendrochilum filiforme*, *Oncidium ampliatum*, with strong spikes 2 feet long. Besides these, there were large batches of *Calanthes* and other winter flowering varieties, some large plants of *Eucharis* strong and healthy, and a few specimen Pitcher Plants.

The next range consists of three lean-to vineries, each about 50 feet in length. The first of these was filled with a Black Hamburgh Vine some eighty years old. It is planted in an inside border and produces heavy crops of medium-sized bunches yearly. The second division is planted with Lady Downe's Seedling and Black Hamburgh, which were carrying heavy crops of large bunches. The third division is planted with late varieties, which prolong the supply of Grapes to the end of March. The Vines in all the divisions were clean and healthy, and showed signs of good culture throughout.

In conclusion, I have to thank Mr. Llewelyn and his courteous gardener for my enjoyable visit to Penllergare.—A. PETTIGREW, *Cardiff*.

VIOLETS IN POTS.

There are various methods of growing Violets in pots which will be treated separately, each having its particular advantages.

I. PLANTS GROWN OUTDOORS AND LIFTED IN LATE SUMMER.—These afford the largest plants, the largest blooms, and are most useful for general purposes. The plants are treated in every respect the same as for lifting to plant in frames. Select the most promising—*i.e.*, those plants with strong central crowns, sturdy habit, and bold persistent foliage, clean and healthy. Lift carefully about the middle of September, preserving all the roots possible, and with the hand reduce the ball to a size that will allow of its being placed in the pots with a couple of inches clear space all around, and preserving the roots. The large-growing varieties will require pots 8 or 9 inches in diameter, and the medium growers 6 or 7 inches, the small growers being accommodated in 5 or 6-inch pots. Place one large crock or an oyster shell at the bottom of the pot, and two or three of larger size over it, and then some rough leaf soil and lumpy loam to raise it to the required height, so that the neck of the plant will be just level

with the rim of the pot. Use turfy loam, with a fourth of rather rough leaf soil, and a quart of soot to a bushel of compost for potting. The compost is best rough so as to admit of the plants rooting freely through it, and the air that is taken down through using the rough soil and frequent watering seems to exert a beneficial effect upon the roots, and with these feedings can be practised largely. In a close soil there is danger of its becoming sodden, the roots are sparse, and the flowers are poor. Work the soil in amongst the roots, and make it moderately firm, leaving about an inch space below the rim of the pot for holding water in the larger size, and less in those of smaller size. Stand on a north border on a bed of ashes, and sprinkle them morning and evening with water from a rose pot, a good supply being given directly the plants are placed in position after potting, and the soil being moist when potted, they will not require any water but the sprinklings overhead for a week, when roots being emitted, supplies will be required at intervals. The soil must not be made too wet, and it must not be allowed to become too dry.

In a fortnight remove them to a pit or frame with a sunny aspect. If frost can be kept out, stand on ashes, otherwise plunge the pots in ashes to the rim. The plants should not be crowded, but have space every way, and not more than 6 inches clear of the glass. Here they will need water when necessary, a thorough supply when the soil is getting dry and before the foliage flags. Air should be admitted as advised for Violets in frames. From the frames the plants can be taken to the greenhouse for accelerating the flowering preparatory to use in the house, &c. Assign a position near the glass and near the ventilators, the temperature artificially not exceeding 45° to 50°. Afford weak liquid manure, and clear, every time water is required.

Varieties for the Lifting System of Pot Culture.—*Victoria Regina*, September to spring. *Princess of Prussia*, September to spring. This is the finest shaped of all single Violets; purple; flowers of great substance, very sweet. Raised by Mr. G. Lee, and not sent out by him. I have, however, grown it many years. *Prince Consort*, September to spring. Foliage large, round or cordate; bluish purple; large flowers, footstalks very long, the longest in Violets. Not in commerce; raised by Lee. *White Czar*, September to spring. Those have all large foliage and flowers, and require the largest size pots. In those that are useful for decorative purposes we have *Double Pink*, September to spring; *New York*, September to spring; *White Neapolitan*, September to spring; *De Parme*, September to spring. Those suitable for the second size pots are—*Patrie*, September to spring; and *Russian*, winter, only given because a great favourite with many. These are suitable for the lesser sized pots. If a light one be wanted, *Parmaensis plena* may be added. The spring bloomers are omitted. N.B.—The very best for pots are *New York*, *White Neapolitan*, *De Parme*, and *Patrie*, a quartette of gems, flowering from September to March inclusive.

II. PERMANENT POT CULTIVATION OF VIOLETS.—This may be annual or perennial. We take the first as best. Early runners or suckers are taken in spring from plants in frames or otherwise, and rooted in gentle heat as advised previously, and instead of planting them out they are potted, first into 3-inch pots, and plunged in ashes duly watered and attended to. When the plants are established, and have filled the pots with roots, they are shifted into their largest pots before they become much root-bound, or early in June. Five and six-inch pots are most suitable. The pots should be clean, have a large crock over the hole, and then a few half-inch bones. The soil may consist of turfy loam of medium texture, torn up with the hand into moderately small portions, four parts, one part leaf soil or thoroughly decayed manure, half a part old mortar rubbish, and a similar proportion of charcoal broken so as to pass a half-inch sieve. Mix, and add a quart of soot to every bushel of soil, and a similar quantity of Amies', Clay's, Beeson's, Jensen's, or other artificial manure. Pot moderately firm. Stand on ashes, and plunge in the same in a sheltered situation. Water as necessary, not over-watering so as to sodden the soil, and do not withhold it so as to cripple the growth. Feed with liquid manure so soon as the pots are filled with roots. Sprinkle the foliage in the evening of hot days. Keep the plants clear of all runners and weeds, stirring the surface of the soil if it becomes green with a label pointed so as to form a spud. Remove the loose soil and surface-dress with leaf soil or decayed cowdung, and repeat as necessary. If red spider attack the plants dip them in a solution of soft soap, 2 ozs. to the gallon, commencing with its first appearance. It is equally efficacious against aphides. Remove to cold frames in October, and to the greenhouse as required. In a cool house they will flower through the winter, or according to the variety. Frames erected against the sides of greenhouses are the most suitable, and should be of a kind that will afford a free circulation of air in favourable weather.

Varieties for Pots Flowering in Autumn.—*Neapolitan*, *New York*, *Marie Louise*, *White Neapolitan*, *De Parme*, *Patrie*, *Tree* (*Viola odorata arborea plena*, double, bluish purple, and var. *alba*), *Double Pink*, *Parmaensis plena*, and *Blandiana*, purple, striped white, and *Duchess of Edinburgh*, a *Neapolitan* of very variable character, but when in condition lovely.

Varieties for Pots Flowering in Early Spring.—*King of Violets*, *Double Purple or Scotch*, *Double White or Compacta*, *Queen of Violets*, *Double Russian*, and *Empress*, double blue, a form of *Belle de Chatenay* or *Queen of Violets*, very closely allied to the variety of the latter named *cœrulea plena*. Very fine. Single varieties:—*Neapolitan*, lavender, white eye, very sweet, flowering with the double varieties; *Russian* or *Scotch*; *rubra*, spring; and *Devoniensis*, winter. The singles are not so much valued in pots as the doubles.

All Violets may be kept many years in pots. After hardening the

plants in the frames, take them to the potting bench, turn them out, reduce the ball two-thirds, cutting it clean away with a knife, and at the base just clear of the drainage. Replace them in clean pots, making the fresh soil rather firm. Arrange them outdoors, and treat as in the previous season. Another plan is to turn the plants out of the pots, shake away all the soil, trim in the roots, and return to the same size of pot, or preferably a smaller one, and afterwards transfer to the flowering size when the roots have taken possession of the soil. Such plants are not in any sense equal to what they are in the first year, hence treating them as annuals is advised.

III. Bouquets of Violets in Pots.—Plants that have flowered in pots may be turned out in late April or early May in good rich soil in an open situation, planting 2 feet apart every way for the small and medium growers, and the large growers in rows 3 feet apart, making the soil firm about the roots, and supply water until established. Old plants that have passed the winter outdoors may have every alternate plant and row taken out, leaving the others undisturbed, and the ground should have a good dressing of manure, and have it pointed in. Strong runners of the current year and suckers rooted early in gentle heat and grown on being placed out in May at the distances named are equally available for our purpose—viz., to get well-rooted runners in quantity of the current year. Instead of removing the runners make a slight cavity when the runners show leaves at the end of the hine, and place the runner wire in it just below the runner plant, securing with a peg. Repeat this with every runner that shows up to September, disposing them over the ground so that each will have a fair share of space, and if likely to become crowded cut away the superfluous runners. It is essential that the runners have exposure to light so as to make a sturdy, thoroughly solidified growth. In early October lift all the runners, detaching them from the parent, and arrange them into two kinds—viz., early runners or strong plants, and late runners or small plants. Shake all the soil from them, but preserve a good amount of root, being careful not to break them off near the runner. The roots, if long, may be trimmed, and the runner wire cut away or that part unrooted. About 2 inches of runner wire is sufficient to reserve. Prepare some pots as for lifted plants and some of the same soil, and fill the pots with runners as thickly as they can be placed together without touching, the outer ones close to the rims of the pots all around, and only slightly below it, the crowns just clear of the soil. The old leaves may be removed, but care must be taken not to damage the centre ones and crowns. Stand them in a cold frame, give a good watering, and shade from sun until established. Afterwards keep them well up to the light, and freely ventilated as advised for Violets in frames generally. Remove all decayed leaves as they appear, and whenever water is necessary afford liquid manure.

These plants will develop freely, bearing blooms abundantly, and by introducing them to a house after November with a temperature of 45° to 50° artificially they will come in early or at midwinter, and by introducing fresh batches a succession for the boudoir and drawing room can be secured. Neapolitan varieties are the best for this purpose—viz., New York, Marie Louise, De Parme, and White Neapolitan. All others are amenable to the practice. Of all Violets for pots De Parme is the best.

TREE VIOLETS—Violets naturally in old plant's form stems, growth taking place by the apex. The stems are elongated by each succeeding year's addition, and it is accelerated by removing the side growths—i.e., the runners and suckers. The tendency to form stems is inherent in some varieties, or they keep the central or main crown longer than others. There are many that possess this characteristic, but there are some that have it in a marked degree, and as a rule are not much given to runner or sucker production, but most Violets by keeping off the side growths can be had with stems, but what purpose is served thereby I could never see. They are not remarkably pretty, and in no sense useful above Violets grown in other manner. The Tree Violet is very like our wild Violet (*Violet odorata*), if not a variety of it, and distinguished by the appellation of *arborescens*, or *arborescens*, and I believe is a native of Spain. I have, however, had the double form from the Levant and Greece. The single form is hardy, and so is the double, but, flowering in winter, protection is necessary to insure its blooms coming in perfection. The single form is not worth growing except as a curiosity; flowers light purple. The double varieties are much the best, and should be grown in pots, though they succeed very well planted out in May after being hardened and listed and potted in autumn, but as some like these best in pots we will advise accordingly.

In spring the plants are potted after flowering or in late April. The balls are reduced and most of the old soil removed, returning them to pots that will hold the roots easily, they being trimmed in to an inch or two of the stem. Place in a frame, shade, and keep them rather close and moist until established, then harden off and shift into the larger size in June, standing in a sheltered situation indoors. Keep off all runners, offsets, or side growths and suckers. Remove them to cold frames in October, or place in a light airy position in the greenhouse. If the crown divide cut away all but one stem, reserving the most erect. Damp should be carefully guarded against, as if it get into the crown it will decay, therefore ventilate freely, and remove all decayed leaves and flowers. The white variety is most tender.

The best for forming "trees" are *Viola odorata arborescens*, fl.-pl., double blue; *Viola odorata arborescens alba*, fl.-pl., double white, and King of Violets, double indigo-blue, but by selecting plants of other varieties with single stems or crowns in spring, shaking them out, cutting in the roots to an inch or two of the stem removing all suckers or side growths and planting out a foot apart every way, keeping off all side growths during the summer, pretty little trees will be had for lifting and

potting in autumn. The Neapolitans are amenable to this practice, and treated in other respects as pot plants, they flower all the winter, and are much appreciated by ladies for the pendant flowers through the stems of the plants being kept clear of the soil. With care they live several years, adding to the stem annually, but drip or damp in the centre will spoil a year's labour.—*VIOLA*.

IXORA GRIFFITHI.

THIS is known to many gardeners by the more descriptive name of *hydrangeiformis*, for both in its heads of flowers and its foliage it has considerable likeness to the *Hydrangea*. It was discovered by Mr. Griffiths at Mergui, and introduced in the year 1845 by Messrs. Low of the Clapton Nurseries. It is a large branching shrub, the branches terete, rich brown. Leaves large, oblong-ovate, acuminate, somewhat cuneate at the base, tapering into a short stout petiole, penninerved, with



Fig. 13.

numerous transverse veinlets, glabrous, as is every part of the plant. Stipules broad, short, acute. Cymes large, broad, nearly flat at the top, compound, with a great number of salmon-coloured (or sometimes yellow and scarlet) flowers, with a pair of leafy bracts at its base. Calyx very small, with four short blunt teeth. Corolla salver-shaped, salmon colour (or at first orange yellow, then red orange); the tube long, slender; the limb of four rotundate, very obtuse, spreading lobes.

Numerous *Ixoras* are grown, but that named above is seldom seen in gardens, yet, as will be seen from the cut, it is, when treated well, a handsome plant.

CHOICE PERENNIALS.

(Continued from page 509 last vol.)

PRIMULA SIEBOLDI (*P. cortusoides amœna*).—All the varieties of this section are beautifully adapted either for culture in pots for conservatory decoration, or for the open border, and comprise some charming colours. We have pure white flowers in *grandiflora alba* borne in grand trusses, very free and fragrant. The type is an excellent free-flowering plant, having long trusses of crimson magenta flowers, with a faint band of white suffused with rose in the centre. This is of good habit and vigorous constitution. *Lilacina* has flowers of a deep lilac hue, distinctly fringed, and one of the most effective of the colour. There are many other forms, but these are among the most distinct in colour.

DORONICUMS.—That sharp biting frost which we experienced late this spring played sad havoc with these flowers, and their season was in consequence a short one. The most handsome of all perhaps in *D. Harpur-Crewe* (*Syn. Clusii*), the flowers of which are of rich gold, and from 3 to 4 inches in diameter, height 2½ feet. *D. austriacum* and *D. caucasicum* are both highly ornamental, and may be classed as among our earliest C. composites to flowers.

SENECIO DORONICUM.—A plant growing a foot, having large entire somewhat downy leaves and flowers of a rich golden yellow. This is a highly decorative border perennial, and one which cannot be too strongly recommended. It delights in abundant moisture, but that is not absolutely essential in its cultivation.

FAIR MAIDS OF FRANCE AND ST. BRUNO'S LILY.—In passing from these we may find some highly valuable plants with pure white flowers. These two plants are the Fair Maids of France (*Ranunculus acutifolius*, fl.-pl.) and the St. Bruno's Lily (*Anthericum liliastrium*). The former has pearly white button-like flowers, which are borne in profusion for some time on branching spikes. The latter are arranged on erect spikes, and take the form of a drooping bell. Of the latter plant I must not omit the major variety, which grows 2½ feet high, and which just now is one of the gems in the border. It is much more vigorous and larger in all its parts than the type.

THE DOUBLE WHITE ROCKET.—Another plant among old favourites is the double White Rocket (*Hesperis matronalis* fl.-pl.), with sturdy spikes of milky white flowers 2 feet or more high. The density of these fragrant spikes, combined with their massive appearance, render it one of the best of our hardy flowering plants. Indeed, so freely does it flower that it is not uncommon for it to die in very hot seasons in exposed positions, and for this reason it must not be allowed to retain the flower stems too long, unless there is plenty of good plants in reserve. A word, by the way, as to planting it to insure success. Presuming good sized plants are preferred to quantity, it may be divided sufficiently for the purpose, the plants having been cut down as soon as the flowers commence fading will have the effect of hastening the young growths about the base of the plants. By the end of August these growths will have reached a good size with several leaves each, and at this time, with favourable weather, they may best be planted. By the appearance of frost they will have a good hold upon the soil. It is by planting in spring time that causes this Rocket too often to assume a puny miserable growth and produce poor spikes of bloom in place of the giant massive spikes which at the present time make it so conspicuous.—J. H. E.

(To be continued.)



HARDY FRUIT GARDEN.

STRAWBERRIES.—Care should now be taken to induce runners to put forth roots freely, so as to have plenty of vigorous young plants for making new beds by the end of the month or early in August. Soil that is mellow, rich, and tolerably firm, but not hard, is the best for our purpose, and however rich we may have made the soil of the bed in which the old plants are established, it will have been trampled so much in the gathering of the fruit that the runner roots cannot easily lay hold of it. We have tried many plans in the preparation of runners for planting, and have long had strong reason to prefer the use of small pots filled with rich loam pressed firmly into them. The pots are then plunged to the rim in the soil between the old plants, and a strong runner pegged down so securely upon the soil in the pot that as the roots grow they must enter it. If the weather proves very hot and dry frequent waterings through the rose of a waterpot help the runners to become established in the pots quickly. When the roots have spread to the sides and bottoms of the pots the stolons bear separation from the old plants, and they are immediately taken to the new bed, turned out of the pots, and planted in permanent quarters. Deep rich soil, in which vegetables grow and thrive, answers well for Strawberries, but if the soil does not contain plenty of small stones it should have enough coal ashes mixed with it to insure porosity, a heavy soil very retentive of moisture often proving fatal to Strawberry roots in a cold wet winter, as we have found to our cost. Turn out the plants carefully, so as not to break the ball of soil, make a hole with a trowel, press the soil gently but securely around the roots, cover the top of the ball with a little fine soil, but do not bury the crown of the plant, and water well at once through a coarse rose to settle the plants well in the soil. The use of flower pots involves a little extra labour, but it prevents any check being given to the plants during the transplantation, and tends materially to insure success. By success we mean the formation of new beds which shall afford a supply of fine large early fruits the first season, instead of a few small fruit or none at all till the second year after planting. The fruit of new beds ripens early because it is not so much shaded by foliage as that of old beds. Two feet apart is the best distance for the plants, but in small gardens the rows should be 2 feet apart, and the plants a foot apart in the rows. We have made new beds with the plants and rows only a foot apart, and after the fruit was gathered the first season every alternate row was hoed up. By this method double the quantity of fruit is obtained in the first season and the permanent plants sustain no injury, a dressing of manure being dug in between the rows as the extra plants are cleared off. Do not forget to plant beds of early sorts both on sunny slopes and out in the open quarters of the garden, and the late sorts in the open and on north borders, so as to prolong the season of ripe fruit as much as possible. New sorts of Strawberries are introduced every year, and all which have reliable recommendations should be tried. Of sorts of proved excellence we recommend as being the most useful dozen sorts in general cultivation—Black Prince, Marguerite, Sir Joseph Paxton, James Veitch, Bicton Pine (white), Lucas, Dr. Hogg, President, Hammonia, Unser Fritz, Frogmore Late Pine, and Loxford Hall Seedling,

FRUIT FORCING.

VINES.—*Earliest Vines.*—The Vines will now require a dry atmosphere to thoroughly ripen the wood, but it will not be necessary to employ artificial heat to insure the requisite warmth, as that can be effected by regulating the ventilators according to the weather, but avoiding a close atmosphere, especially at night, which would have the effect of inducing lateral growths that must now be restrained, keeping the laterals and all late growths well in hand, and seek complete rest by keeping the border cool and dry. To effect this cover the outside border with dry

bracken or litter, and in case of heavy rain use tarpaulin, and keep the inside border dry.

Vines in Pots for Early Forcing.—Those for next season's early fruiting will have completed their growth, and cannot have too much light. The watering should not be more than necessary to keep the leaves fresh. Keeping the soil too dry will induce premature ripening. If they do not ripen freely keep them rather warm during the day, and ventilate freely at night.

Young Vines.—Vines of this season's planting should, if the light is not too much obstructed, be allowed to grow unchecked, it being presumed they will be cut back to the bottom of the trellis, or to three or four eyes at the winter pruning. Any supernumeraries intended for next year's fruiting should be regularly stopped at a length of 7 or 8 feet, removing the laterals from the buds intended to give fruit next year, preserving the old leaves, and encouraging lateral extension above the part it is intended to prune to, so as to stimulate root-action, and prevent the eyes starting from an excess of sap. If required for starting early the wood must be thoroughly ripened, admitting a free circulation of air, and if the weather should prove wet and cold gentle fire heat will be necessary.

Scalding.—At this period when scalding occurs we may repeat our advice to afford increased night temperature and abundant ventilation by day, so as to reduce the atmospheric moisture until the critical stage is past. After then fire heat may be economised by closing early, so as to admit of the sun raising the temperature to 90° or 95° on fine afternoons.

Regulating Growth.—Keep these so disposed that light and air will have access to the foliage equally. Adopt the extension rather than the restrictive system where there is room for it without crowding, keeping gross laterals stopped so as to cause an equal flow of sap throughout the Vines. Avoid large reductions of foliage at a time, it only tends to check root-action, and has an evil effect on the fruit, very often resulting in canker and other ills.

Grapes Ripening.—Houses in which the Grapes are ripening should have a free circulation of air constantly, less of course at night than during the day, and provide less moisture in the atmosphere. A minimum temperature of 70° to 75° will be necessary for Muscats, and 5° less for other varieties, air being given freely whenever the weather admits.

Late Grapes.—The bunches must have a final examination, removing all the small seedless berries, and thinning where likely to be too crowded, and small berries and lack of symmetry are great defects, often spoiling the appearance of an otherwise fine bunch. Allow a liberal extension of the laterals, but permit no more foliage to form than can have full exposure to light.

Watering.—Vines with the Grapes swelling will require water frequently, inside borders not more distantly than once a fortnight, and where they are somewhat restricted and well drained it may be given once a week, as it is scarcely possible to overwater Vines in full growth, provided they are in well-drained borders of porous material and are not too luxuriant in growth. Outside borders will scarcely require any water as yet, but they must not be allowed to get too dry, or the roots will descend in quest of moisture, and so be seeking it at the drainage when it should be provided for them at the surface.

Feeding.—Besides water it will be necessary to give a stimulant of some kind, especially where the crops are heavy, than which nothing answers better than the liquid from manure tanks, the drainings of stables, manure heaps, &c. This diluted when too strong with tepid water will make a wonderful difference in the size of the Grapes, and we may mention sulphate of ammonia as a capital stimulant for weakly Vines, applying it at the rate of 1 lb. to 30 gallons of water. Guano is also good, 1 lb. to 20 gallons of water. The best mulch is fresh horse droppings scattered rather thinly, and renewed from time to time, especially for inside borders, on account of the ammonia supplied to the atmosphere. Care should be taken not to give an overdose, as it is highly inimical to the foliage when powerful. A slight sprinkling once a week is sufficient.

CUCUMBERS.—Pot the seedlings for autumn fruiting as they become ready, pinching out the growing point above the second rough leaf of such plants as are required for growing in pits, but for trelliswork place a small stick to each plant as they advance. Prepare fermenting materials to afford bottom heat to plants in pits, and have the structure thoroughly cleaned, especially houses, cleansing the woodwork with hot water, soap, and a brush, the glass with clear water, and limewash the walls. All old soil must be removed, and all made as clean and sweet as possible. Nothing answers better than light turfy loam stacked until the grass is dead, and if at all strong add an equal quantity of fibrous peat, a tenth part of charcoal, and a sixth of old mortar rubbish thoroughly incorporated.

Although fire heat is not at this time of year necessary, especially in bright weather, yet in prolonged dull periods of dull damp weather the nights are cold, and the low temperature induces stunted yellow fruits, canker at the collar, and mildew on the foliage. In such weather employ gentle fire heat at night, and by day if dull and cold. Sulphur dusted freely about the foliage is the best cure for mildew, and against canker there is nothing better than quicklime rubbed well into the affected parts until dry. Upon a return to bright weather after a dull period shade from bright sun, so as to prevent flagging, which if allowed wastes the energies of the plants, resulting in ill-shaped stunted fruits, and offers a strong inducement to red spider. Keep the growths regularly attended to twice a week, and keep up a succession of bearing wood by removing exhausted growths and replacing with young fruitful growths. Close early, running up to 90° to 100°.

PLANT HOUSES.

Celosias.—Young plants intended for winter decoration, and now in small pots, or still in pans and boxes, should be potted as they require more root room. If in the latter, transfer them into 3-inch pots, but if in small pots already they may be transferred into 5 and 6 inch pots. They are free-rooting, and no harm will be done by giving them a liberal shift, provided they are carefully watered until they are rooting freely in the new soil. They should be hardened at once to cool treatment, for they are soon ruined if kept in a close atmosphere. The object should be to produce dwarf sturdy growth, and then finely developed plumes are certain. Seed may still be sown if sufficient plants have not been raised.

Primula obconica.—All plants that are well advanced in their largest pots may be stood on a bed of ashes outside. Select a situation with a northern aspect where they will be shaded from direct sunshine. The ashes upon which they are stood should be kept moist, so as to keep the surroundings of the plants as cool as possible. This plant cannot endure a dry hot position where they are fully exposed to the sun. If well cared for in the position indicated the plants will do better than if confined in a frame.

Calceolarias.—If seed was sown as directed, the seedlings will be ready for pricking off singly into pans or boxes. They should be placed from 1 to 2 inches apart in a compost of light moderately rich material, and when this space has been filled they will be ready for 3-inch pots. They must be grown in a frame with a northern aspect, and stood upon a cool moist bottom. If the stock from the first-sown seed is insufficient for the various successional batches required, sow a little more at once.

Cinerarias.—These must be potted as they require more root room, for if checked in small pots they seldom do well, as they become a prey to insects. Grow the plants in a similar position to that advised for *Calceolarias*, and give them room to develop their foliage. Abundance of air must be admitted, and as much light as the plants will bear, or the foliage will soon become drawn and weakly, when no after treatment will remedy the evil. Seedlings should be pricked into pans and boxes, and a little more seed sown at once for succession.

Rhodanthes.—These are amongst the most useful of plants for various purposes of decoration, and they last in good condition for a considerable period of time. A good batch should be sown at once, and they will be found most useful indoors from the early part of October, and will last in good condition into the following month. They are usually three months before they are in bloom from the time of sowing the seed—that is, when cool treatment is given. The seed should be sown in 5-inch pots that have been nearly filled with rich soil composed of good loam, one-third leaf mould, one-seventh of manure, and a little sand. The pots should be placed in a cold frame until the seed has germinated, then harden the young plants, and grow them cool; in fact, when they are 1 inch high they should be grown without any lights over them. It is useless sowing seed after the close of this month.

Stocks.—Very useful in pots, and a little seed of Ten-Weeks Stocks and intermediate varieties of various colours should be sown in a box at once in a cold frame. Directly the seed has germinated the box or pan must be stood outside, for Stocks are very liable and certain to damp if kept close. When the seedlings are large enough they may either be potted singly, or pricked into boxes to be afterwards placed in pots. They do not transplant well, and therefore it is better to sow in small to commence with.

Chrysanthemums.—The varieties of *C. tricolor*, which are of various shades of colour, are very beautiful when well grown in pots for conservatory decoration. Seed of each should be sown separately in 6-inch pots, and when the seedlings are large enough thin them out to five or six plants, and then grow them perfectly cool; in fact, they are best outside when once the seed has germinated. In the early part of the year they are best grown singly; two or three seeds should be sown in each small pot, and then thinned out to one. The leading shoot of the plant should be pinched to induce them to branch, and they will by this treatment form dwarf bushy specimens when they come into flower. At this season sow the seed as directed, and grow the plants without pinching.

THE BEE-KEEPER.

SEASONABLE NOTES.

THE season has until the last few weeks been one of unprecedented severity. Far and wide the cry of despair has gone up from numerous bee-keepers who had not sufficient buoyancy to hope against hope for a change in the weather and their prospects. Those who have given proper attention to their bees during the last two months, who have supplied them with food when necessary, and kept them warm and snug, will now almost certainly be able to reap a small but welcome harvest. The white Clover is in full bloom, and the tropical heat of this month so far, following on a cold wet May and dull sunless June, will enable the bees not only to replenish their empty cells but to store an average quantity of surplus for the benefit of their master. In my

own apiary honey is already being stored in quantity in supers, and a continuance of fine weather for even ten days longer will enable me to repay myself for the little extra trouble bestowed upon the stocks in their hour of need. During the last few days scores of swarms have been thrown off, but it is absolutely hopeless to expect any surplus from either the swarms or old stock this year, and almost impossible without great care and attention to get the swarm and old stock in a proper condition for wintering. The swarms given in May and June, if proper attention has been paid to their wants, will now be at work in supers, but where no assistance has been given the Clover will be gone and all hope of supers be lost before they are in a fit state for supering. Those who had swarms not later than early June, and have fed them carefully but sufficiently, returning the casts to the old hive on the day of issue, will now be able to place supers with success on both swarm and stock, and it will not be at all surprising if a great success attends their efforts. It is, of course, impossible, and certainly not wise, to attempt to say what the weather of this month will be; but I am only considering our prospects in the event of a fine warm sunny month after the bleak, cold, wet, and miserable weather we have experienced since last September.

At the close of the Clover season, unless it is intended to try for a harvest from the Heather, attention must be given to every stock, and later on a supply of food be afforded sufficient to last not only over the winter months but well into spring. No one can imagine the trouble and anxiety saved by having a sufficiency of stores in every hive to tide over periods of adversity; but it is perhaps early to consider the question of wintering, although the foundation for success in a future year must be laid in the preceding summer or autumn, and if no such pains are taken for the welfare of the bees in the winter months no profit can fairly be expected in the summer season. Success follows energy.

It may be well to warn those who are this year attempting to follow the tiering system, that great judgment will be required in order that the super room may not be in excess of what it may reasonably be hoped the bees will require, while on the other hand no stock must be in the least cramped for room, or the swarming impulse will be awakened. At present my stocks are working sixty-three 1-lb. sections each in various stages of completion, but if fine weather continues it may be necessary to considerably augment this number; while, on the other hand, if wet again follows, the number will be reduced and the comb carefully stowed away for another season. Sections filled with clean white comb are invaluable, especially for placing in the racks of sections at the beginning of the season. The honey, if any is in them, must first of course be cleared by the bees unless sufficient in quantity to make the honey more valuable than the comb. Let each one use discretion and judgment.—FELIX.

THE HONEY SEASON.

NOTWITHSTANDING the hot weather at the beginning of July, owing to the arid winds very little honey has at yet, July 12th, been stored in supers; consequently where hives are in good condition bees in tiered hives have had an inclination to swarm. Wherever this occurs we will keep the swarm off and place it on the site of the old stock. The combed supers on the old stock will be transferred to the swarm in two hours after hiving. This little delay will enable the bees to prepare the comb foundation for the reception of eggs, which we have seen deposited in foundation in less than an hour after hiving. The old stock, after getting as many bees outside as possible, will be removed to some secret place until the flying bees have all taken to the swarm. When this precaution is not taken and carefully carried out, both in natural and artificial swarming, many of the bees will search out and return to the old stock. The other day, in a case I had, the hive was carried inside the house, and yet the flying bees found it. As the much-needed rain both for bees and vegetation has now fallen, one week's fine

weather will, with the combed supers, give us a fair honey harvest, and two weeks a large one. In my remarks lately upon the superiority of the Syrian and Carniolian bees, I omitted to state that superior to either of these sorts is the crossed Cyprians, which, as usual, is far ahead of every other variety. So superior are they in honey-gathering that strangers notice it the moment they enter and scan the apiary.

It is with deep regret I learn that Mr. F. Benton is seriously ill at Cyprus, and approve of the proposition to present him with a testimonial for his energy in hunting up the different races of the eastern bees, which give promise of great superiority over some other varieties. But honour must only be given to whom honour is due. It was not Mr. Benton that introduced the Carniolian bee. I had these from Mr. A. Neighbour a number of years before Messrs. Jones and Benton set out for the East. I had also a stock of Cyprians from the same gentleman about that same time. The present capital honey-gatherers I have are descended from them. The foregoing need not hinder any who has a mind to pay a tribute to Mr. Benton for the courage he has displayed and the great risk he has incurred in the aid of bee-keeping.

In all cases where hives are to be removed to the Heather a young and fertile queen should supersede the present reigning ones not later than the third week of July. I observe in many cases this season, owing to so long-continued a strain on the queen keeping up the population this cold year, many of them are already old-looking, with ragged wings, though not twelve months old yet. All such queens if not deposed are sure to be deposed before next spring, which would result in having queenless stocks at the very time the presence of a prolific one is most desired.—A LANARKSHIRE BEE-KEEPER.



* * All correspondence should be directed either to "THE EDITOR" or to "THE PUBLISHER." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

TO CORRESPONDENTS.—We desire to assure those of our correspondents whose letters and communications are not promptly inserted that they are not the less appreciated on that account. Our pages are practically filled several days prior to publication, and letters arriving on Wednesday morning, except by special arrangement, are invariably too late for insertion. The delay in the publication of some of these is not of material importance, but reports of meetings and shows held a week previously lose much or all of their value if not received in time to appear in the current issue.

Water Lilies and Filmy Ferns (A. C.).—Your letter arrived too late to receive attention this week. Full particulars will be given in next issue.

Secretaries of Flower Shows (D. H.).—We regret that we cannot oblige you, but if letters are addressed "The Secretary" at each of the towns mentioned, naming the Society, they will probably reach the right person.

Making Tennis Court (Young Gardener).—A court for single-handed tennis should be 27 feet wide and 78 feet long; for double-handed tennis, 36 feet wide and 78 feet long. We do not think you could make a court satisfactorily without proper implements and some knowledge of how the work is performed. The better plan would be to communicate with one of the large makers of tennis requisites, such as F. H. Ayres, 111, Aldersgate Street, London, E.C., who probably sends out assistants to do such work.

Rhynchospermum (W. G.).—As the plant is not healthy, its root-action is probably defective, and fresh soil is needed to incite free growth. The stems and foliage may also be infested with insects, and, if so, every part must be thoroughly cleansed. If the soil is loose much of it may be removed, and a mixture of turfy loam, peat, and sand applied, working it well amongst the roots, then pressing it down firmly. If the roots are materially disturbed in the process of potting the plant must be shaded afterwards, and frequently syringed to keep the foliage fresh. It will be better in a warm than a cool house, and when growth starts freely it must have light and air for its solidification, this being essential to floriferousness.

Insects on Leaves (C. D., Holywell).—The leaves enclosed have upon them the tiny knobs or purses, as they are sometimes called, produced by a species of Phytoptus or gall mite. These galls are generally attached to the veins of the leaves, and each contains one or more of these mites, the transformations and history of which are as yet imperfectly understood. There is no remedy, and they disfigure, rather than injure, in most cases where they appear on leaves. We presume these were the insects about which you inquire, no others were to be found in the box.

Grapes Scalded (Omega).—The berries sent us are scalded. It is caused by excessive evaporation from the berries, the sun acting upon them powerfully whilst cold, the berries not absorbing heat nearly so quickly as the atmosphere. The only remedy we know is to maintain a rather warm atmosphere at night with enough ventilation to insure a circulation of air, the temperature being about 70°, or between that and 65°. Air should be freely admitted throughout the day, increasing it early and with the sun heat. When the berries commence ripening danger from scalding is usually past, but there is no need to keep the house close, as a free circulation of warm air is highly favourable to a good finish in the Grapes.

Mushrooms Decaying (M. A. Scott).—Mushrooms can only be grown large, fresh, and fleshy in summer under exceptional conditions by which they are kept cool. Containing much nitrogen, they naturally putrify quickly in hot weather, the same as meat does. You had better purchase a copy of the fourth edition, with supplement, of "Mushrooms for the Million." It is much larger than the previous editions, but the same price, and contains much valuable information that you may turn to profitable account if you read attentively and act according to its teachings. The supplement contains the solution of many difficulties that have been experienced by amateurs, and earlier editions are on that account necessarily incomplete.

Root-pruning (F. J.).—If the Plums are growing very exuberantly you may sever a few of the strong roots now to check the vigour of the trees, and root-prune more systematically when the leaves change in the autumn. Thin out the branches if crowded, so that the sun can shine on the leaves towards the base of the shoots. Overcrowding the growths is as great an obstacle to productiveness as excessive root-action is. You have perhaps been giving the trees sewage, which you say does no good in your garden.

Strawberries (Idem).—After the crops are gathered all runners and decayed leaves should be removed, retaining healthy foliage for the support of the crowns. It is an excellent plan to spread manure between the rows in the autumn, not packing it round the crowns so as to blanch them, and the surface dressing will be washed clean by the spring, only bleached particles of straw remaining for the fruit to rest on. You cannot adopt a better practice than that in light soil. If the sewage does no good do not use it. It is perhaps too strong. We find it beneficial to many crops in light soil.

Clay for Roses (Delta).—The clay or marl would be best procured now and spread out thinly in the open, so that by exposure to the atmosphere it will become ameliorated and in a better condition for mixing with the loam. The clay exposed to the sun so as to get dried through will fall in pieces on rain falling, being acted on much in the same manner as by frost, and is similar to what the brickmakers term tempering, and what farmers seek for their clayland by fallow, the land being thrown up roughly with the plough so as to expose it as much as possible to the influences of the atmosphere, thereby securing a better tilth than is effected by frost. Get the clay now, expose it to the atmosphere, and turn it over in the lumps, but always when dry, then smash it. In the autumn it should be mixed with the loam in fine particles when the soil is in good working order. It would be well to mix the clay and soil together before putting in the bed, and so insure thorough incorporation. There is no better plan than drying the clay till it can be smashed into small particles, then store it in a dry shed till it is required for use.

Strawberries Dying (E. D. O.).—The most probable cause of the plants dying suddenly is being attacked at the roots by the grubs of the spotted garden gnat (*Tipula maculosa*), which is, however, most fatal to the crop by cutting off the flow of stalks near the ground. The larvae of various other insects prey upon the roots, the plants attacked are marked by decreased vigour and suddenly collapse. There is no remedy but searching for the grubs, which are usually secreted in the soil about the plants. As the plants are so unfruitful we should make a new plantation, selecting runners from fruitful plants only, and if done at once a good crop may be had from them next year. Plants that have been layered in small pots or turves are the most suitable. Destroy the old plantation, burning the plants on the ground, using some brushwood to assist in the burning, and then dress the ground with gas lime at the rate of a peck per rod, distributing it evenly on the surface, and after allowing it to lie a couple of days point in lightly with a fork. In the course of a week or ten days after the ground may be dug and used for vegetable crops. Three years on many soils is as long as Strawberries are profitable.

Black Tartarian Cherry (R. G.).—The excellent Cherry to which you refer is known under a variety of names, Black Circassian being one of the most frequently used; others are Fraser's Black, Ronalds' Black, and Black Russian. The following description and history are given in the new edition of the "Fruit Manual":—"Fruit very large, obtuse heart-shaped. Skin shining, of a dark blackish brown, becoming quite black when ripe."

Stalk $1\frac{1}{2}$ to 2 inches long, inserted in a flattened cavity. Flesh purplish, rather tender than firm, juicy, and very richly flavoured. The stone is small for the size of the fruit, and obtuse heart-shaped. This most delicious Cherry is ripe the end of June and beginning of July, and is in greatest perfection when grown against a wall. The tree is quite hardy, a free and vigorous grower, at first having an upright habit, but more spreading as it becomes aged. The leaves are large, and well sustained on stout footstalks. It is an abundant bearer, and well adapted for forcing. The merit of having introduced this excellent Cherry is due to the late Mr. Hugh Ronalds of Brentford, who, in 1794, issued a circular, a copy of which is in my possession, in which he signifies his intention of distributing it at 5s. each plant. It was subsequently brought from Russia by the late Mr. John Fraser, who distinguished himself first by his botanical discoveries in North America, and afterwards by his travels in Russia. He purchased it from a German, by whom it was cultivated in St. Petersburg, and introduced it to this country in 1796."

Propagating Roses from Cuttings (Omega).—Immediately the flowers are shed is the best time to insert Rose cuttings, as the wood is then sufficiently ripe. They succeed well under handlights or in a cold frame in a compost of three parts loam and a fourth of leaf soil, and a fifth of sand well incorporated, surfacing with an inch of sand. Cuttings of two or at most three joints are best, cutting them transversely below the lowest joint and removing the leaf from it, also the next if the cutting have more than two joints; but the leaf at the uppermost joint should be preserved entire, and the cuttings inserted so that the uppermost joint with its bud is clear of the sand. Make the compost firm about the cuttings, and supply water so as to settle the sand about them. Place on the lights and shade from bright sun; a size of whiting and skim milk placed on with a brush is suitable, and saves much trouble. The cuttings should be sprinkled lightly every morning, and the lights at once replaced. In a month or six weeks the cuttings will be rooted, and should then have ventilation, gradually increasing it from the beginning, so as to thoroughly harden them. If wanted for pots they may be lifted carefully, potted singly, and placed in a frame, kept close, and shaded until established, when they should be hardened. All the Tea-scented and China Roses succeed well on their own roots, and the more vigorous kinds of Perpetuals, as Alfred Colomb, Beauty of Waltham, Charles Lefebvre, Boule de Neige, Auguste Neumann, Countess of Rosebery, Duke of Connaught, Duchess of Connaught, John Hopper, La France, Mons. E. Y. Teas, Madame Victor Verdier, Princess Mary of Cambridge, Reine du Midi, Senateur Vaisse, Souvenir de Madame Berthier, White Baroness, and Royal Standard.

Myrrh (W., Surrey).—The plants that yield the gum resin known as Myrrh are species of Balsamodendron, chiefly B. Myrrha, which produces African Myrrh, and B. Opobalsamum, which affords Arabian Myrrh. The former is a small tree, with a stout trunk, covered with a whitish-grey bark, and furnished with rough abortive branches, terminating in spines. It grows in Arabia Felix, in the neighbourhood of Gison, in dwarfish thickets, interspersed among Acacias and Euphorbias. The juice exudes spontaneously, and hardens on the bark. Myrrh is in small irregular fragments, or tears, or in larger masses very irregular in shape and size, being sometimes not larger than a pea, and sometimes though rarely as large as the fist; when of good quality it is reddish yellow, or reddish brown, and translucent, of a strong, peculiar, somewhat fragrant odour, and a bitter aromatic taste. It is brittle and pulverisable, presenting, when broken, a shining surface, which in the larger masses is very irregular, and sometimes exhibits opaque, whitish, or yellowish veins. It is partly soluble in water, alcohol, and ether; and either alcohol or water will extract the whole of its odour and taste. By distillation a volatile oil rises, having the peculiar flavour of myrrh, and leaving the residue simply bitter. Myrrh is a stimulant tonic, and is employed in debilitated states of the system, in the absence of febrile excitement or acute inflammation. The plants are members of the natural order Burseraceæ.

Grapes Shanking (Merchant).—We doubt if your Grapes are "shanked." Shanking is a gangrene of the footstalks of the berries, commencing as a small speck which spreads round the stem like a wire. Sometimes the shoulder of a bunch is affected in that way, but more frequently the footstalks of some of the berries. When "whole shoulders" turn black, and remainder of the bunch being quite healthy, it is often the result of a twist of the stem in thinning or other manipulation to which the bunch may have been subjected. We have known much injury arise from rough handling and the consequent rupturing of the sap vessels, though it did not show itself immediately or until the demands of the fruit were considerable. Shoulders of Grapes also "turn black" through the direct action of the sun on them after the removal of a number of laterals. We have seen a very striking and destructive instance of this during the present week. If your Vine border is well drained it is not likely to be so wet as to cause the injury you complain of if you have, as you say, followed the instructions that have been given in our "Work for the Week;" still, the character of the soil must always be taken into consideration when watering, some loam being much more retentive than others, and consequently require less water to keep them moist. Moist they must be from the surface downwards right to the drainage, but must not be made sour by excessive watering. This is a question on which cultivators must exercise judgment, and more of them fail in keeping the borders too dry in summer than too wet. As your Vines are old the probability is that there are more roots outside what you term the border than in it. Do you find an abundance of surface roots? If so, your treatment is right, and the root of the evil is not in the soil.

Names of Plants.—We only undertake to name species of plants, not varieties that have originated from seed and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in firm boxes. Slightly damp moss or soft green leaves form the best packing, dry cotton wool the worst. Not more than six specimens can be named at once. (Pen and Ink).—Veronica Traversi. (T.).—Veronica longifolia. (G.M.).—1, The Rose resembles the Garland, a hybrid Musk Rose, often classed with R. multiflora; 2, Malva moschata alba; 3, Common Fennel, Foeniculum vulgare; 4, Colutea arborescens; 5, Centaurea montana; 6, Escallonia macrantha. Hybrid Perpetual Roses are so named because they usually

flower more than once in the season, and occasionally three times. (C.B.).—1, Brassia verrucosa; 2, Francoa ramosa; 3, Cannot be identified without spores, but it resembles a Polypodium; 4, Davallia elegans; 5, Gardenia florida.

COVENT GARDEN MARKET.—JULY 21ST.

Our market heavily supplied, with prices lower. Business dull.

FRUIT.

		s.	d.	s.	d.			s.	d.	s.	d.
Apples	½ sieve	0	0	to 0	0	Melon	each	1	0	to 2	6
Cherries	½ sieve	2	0	4	0	Oranges	100	6	0	12	0
Currants, Black ..	½ sieve	3	0	3	6	Peaches	per doz.	4	0	10	0
" Red	½ sieve	2	6	3	6	Pine Apples English ..	lb.	2	0	3	0
Figs	dozen	3	0	4	0	Plums	½ sieve	0	0	0	0
Grapes	lb.	1	0	3	0	St. Michael Pines ..	each	4	0	6	0
Lemons	case	10	0	15	0	Strawberries	per lb.	0	6	1	0

VEGETABLES.

				s.	d.	s.	d.					s.	d.	s.	d.			
Artichokes	dozen	1	0	to	0	0	Lettuce	..	..	..	dozen	1	0	to	1	6
Asparagus	bundle	2	0		5	0	Mushrooms	..	..	..	punnet	0	6		1	0
Beans, Kidney	lb.	0	6		0	0	Mustard and Cress	..	..	..	punnet	0	2		0	0
Beet, Red	dozen	1	0		2	0	Onions	..	..	..	bunch	0	3		0	0
Broccoli	bundle	0	0		0	0	Parsley	..	..	..	dozen bunches	2	0		3	0
Brussels Sprouts	$\frac{1}{2}$ sieve	0	0		0	0	Parsnips	..	..	..	dozen	1	0		2	0
Cabbage	dozen	1	6		0	0	Potatoes	..	..	..	cwt.	4	0		5	0
Capsicums	100	1	6		2	0	.., Kidney	..	..	..	cwt.	4	0		5	0
Carrots	bunch	0	6		0	9	Rhubarb	..	..	..	bundle	0	2		0	0
Cauliflowers	dozen	4	0		6	0	Salsafy	..	..	..	bundle	1	0		1	6
Celery	bundle	1	6		2	0	Scorzonera	..	..	..	bundle	1	6		0	0
Coleworts	doz. bunches	2	0		4	0	Seakale	..	..	..	per basket	0	0		0	0
Cucumbers	each	0	3		0	6	Shallots	..	..	..	lb.	0	3		0	0
Endive	dozen	1	0		2	0	Spinach	..	..	..	bushel	3	0		4	0
Herbs	bunch	0	2		0	0	Tomatoes	..	..	..	lb.	0	4		0	6
Leeks	bunch	0	3		0	4	Turnips	..	..	..	bunch	0	4		0	6

PLANTS IN POTS.

		s.	d.	s.	d.			s.	d.	s.	d.
Aralia Sieboldi ..	dozen	9	0	to 13	0	Ficus elastica ..	each	1	6	to 7	0
Arbor vitæ (golden)	dozen	0	0	0	0	Fuchsia ..	per dozen	4	0	9	0
" (common) ..	dozen	6	0	12	0	Foliage Plants, var.	each	2	0	10	0
Arum Lilies ..	dozen	0	0	0	0	Heliotrope ..	per dozen	4	0	8	0
Bedding Plants, var.	doz.	1	0	2	0	Hydrangea ..	per dozen	6	0	12	0
Begonias ..	dozen	6	0	9	0	Ivy Geraniums	per dozen	3	0	6	0
Calceolaria ..	per dozen	4	0	9	0	Lilium anarratum	per doz.	2	4	0	60
Cineraria ..	dozen	0	0	0	0	" lancifolium	per doz.	9	0	18	0
Cockscombs ..	per dozen	4	0	6	0	" longiflorum	per doz.	18	0	30	0
Cyclamen ..	dozen	0	0	0	0	Lobelia ..	per dozen	3	0	4	0
Cyperus ..	dozen	4	0	12	0	Marguerite Daisy	dozen	6	0	9	0
Dracæna terminalis,	dozen	30	0	60	0	Mignonette ..	per dozen	3	0	6	0
" viridis ..	dozen	12	0	24	0	Musk ..	per dozen	2	0	4	0
Erica, various ..	dozen	12	0	24	0	Myrtles ..	dozen	6	0	12	0
Eunonymus, in var.	dozen	6	0	18	0	Palms, in var. ..	each	2	6	21	0
Evergreens, in var.	dozen	6	0	24	0	Pelargoninms, scarlet,	doz.	3	0	6	0
Ferns, in variety ..	dozen	4	0	18	0	Pelargoninms	per dozen	6	0	15	0

CUT FLOWERS.

		s.	d.	s.	d.			s.	d.	s.	d.	
Abutilons ..	12 bunches	2	0	to	4	0	Lily of the Valley, 12 sprays	0	0	to	0	0
Anemone ..	doz. bunches	0	0	0	0	0	Marguerites .. 12 bunches	3	0	6	0	
Arm Lilies ..	12 blooms	4	0	6	0	0	Mignonette .. 12 bunches	1	6	4	0	
Azalea	12 sprays	0	0	0	0	0	Myosotis .. 12 bunches	2	0	3	0	
Bouvardias ..	per bunch	0	6	1	0	0	Pelargoniums, per 12 trusses	0	9	1	0	
Camellias ..	12 blooms	0	0	0	0	0	„ scarlet, 12 trusses	0	4	0	8	
Carnations ..	12 blooms	1	0	3	0	0	Roses .. 12 bunches	2	0	9	0	
„ .. 12 bunches		3	0	6	0	0	„ (indoor), per dozen	0	6	2	0	
Chrysanthemums 12 blooms		0	0	0	0	0	„ Tea.. .. dozen	0	9	2	0	
Cornflower ..	12 bunches	1	6	3	0	0	„ red dozen	1	0	2	0	
Cowslips ..	doz. bunches	0	0	0	0	0	„ Moss .. 12 bunches	6	0	12	0	
Daffodils ..	12 bunches	0	0	0	0	0	Primroses, Yellow, dozen					
Epiphyllum ..	doz. blooms	0	0	0	0	0	dozen bunches	0	0	0	0	
Encharis ..	per dozen	2	0	4	0	0	Pyrethrum .. 12 bunches	4	0	9	0	
Gardenias ..	12 blooms	2	0	4	0	0	Spiræa 12 sprays	9	0	0	0	
Hellebore ..	doz. blooms	0	0	0	0	0	Stephanotis .. 12 sprays	2	0	3	0	
Hyacinths, Roman, 12 sprays		0	0	0	0	0	Stocks, various 12 bunches	3	0	5	0	
Iris	12 bunches	0	0	0	0	0	Sweet Peas .. 12 bunches	2	0	4	0	
Lapageria, white, 12 blooms		0	0	0	0	0	Sweet Sultan 12 bunches	3	0	4	0	
Lapageria, red .. 12 blooms		1	0	2	0	0	Tropæolum .. 12 bunches	0	0	0	0	
Lilac	per bunch	0	0	0	0	0	Tuberose .. 12 blooms	0	6	1	0	
Lilium candidum 12 blms.		0	6	1	0	0	Violets 12 bunches	0	0	0	0	
„ .. 12 bches.		9	0	18	0	0	„ Czar, Fr., .. bunch	0	0	0	0	
„ longiflorum, 12 blms.		3	0	6	0	0						



CLEAN SOIL.

THE term "clean soil," so frequently used when mention is made of farm improvements, is a comprehensive one, pointing unmistakeably to a clearance of all noxious weeds that rob the soil of fertility, and which may possibly prove a serious hindrance to the growth of whatever crops we may have in cultivation. Of such weeds the perennials are undoubtedly the most difficult to eradicate, but there are annuals such as Charlock, which, if suffered to ripen a seed

for a year or two, require years of careful culture to get rid of them. Surely if we could only realise the cost of negligence in letting Charlock become established in the soil, we should always be on the alert to prevent the use of unclean seed corn, and to destroy those first few hundreds of Charlock plants which so often are left to ripen and deposit seed in the soil which so often springs up next season by tens of thousands.

Readers of the Journal must know full well how repeatedly and strongly we condemn fallows, more especially long summer fallows. There are, however, exceptions to all rules, and we have known land farmed out and left out of cultivation for a year or two, in the reclamation of which a long fallow and steam cultivation proved indispensable. It is in the regular course of good practice in farming that we consider fallows so objectionable; yet as it is quite probable that many of our readers have to deal with foul land now, a few hints may prove useful at the present time. We may as well own that we have to deal with a somewhat large area of foul land this summer, and our own difficulties doubtless render us sympathetic, for it is no light matter to reclaim neglected farm land.

If steam tackle can be had it is preferable to horses both on the score of economy and utility. Take, for example, Fowler's Grubber. By means of it we can break up soil to a depth of 2 feet, or if necessary a foot deeper. If used in the ordinary way, to stir the soil and subsoil to a depth of 2 feet, we have the surface well broken up in readiness for subsequent cleaning, the subsoil stirred and aerated, and the quick action of drainage insured. Then, too, we have various cultivators—horse hoes, harrows, and clod-crushers, with which to break up and clear the soil of weeds. In a hot dry summer we are able to destroy most of the roots near the surface by simply stirring the soil occasionally; but failing such assistance from the harrows we have recourse to burning couch grass and any other roots we are able to collect. Very highly do we value the effects of fire upon foul land, and whenever paring and burning of the surface is possible we do it. The advantages of burning are self-evident. We effect a total destruction of roots and seeds of weeds as well as of the larva of insects, and we impart much fertility to the soil by means of the ashes. This process of paring and burning would probably prove a cure for Clover-sick land, and also tend to impart great vigour to the next crop of Clover.

No special rules can be laid down for the cleaning of land; rather should we resolve to turn every opportunity to account for doing so. Before all things we must have the soil clean, or it cannot yield full crops. A free use of horse and hand hoes among root crops is a valuable means to that end at the present time; and later on, as the corn is harvested, a prompt use of implements for breaking up and clearing stubbles is most important. Most misleading and faulty was the advice given last season in some agricultural papers, to leave all land intended for spring corn undisturbed till spring; the reason given for such advice being the singular one that when soil is ploughed in autumn there is some risk of a loss of nitrogen through the drains in winter. It may be that there is a trifling loss of fertility, Sir J. B. Lawes claims to have proved it; but we are quite willing to incur such a loss if only we can get the soil broken up, well stirred, and cleaned before winter sets in; for we cannot forget how very speculative a matter the doing such work in spring is, and if a heavy rainfall during winter does carry off some nutriment down the drain pipes it also leaves much behind it in the soil. Let us not forget that the fact of rain water imparting fertility to the soil should lead us to expect to find some fertilising matter in the superfluous water carried off by drains.

Not a day should be lost, then, in breaking up the land immediately as it is cleared of the summer crops. Golden is the opportunity of a few weeks of fine weather in autumn for such work, and we should now try and make arrange-

ments to be ready to turn such weather to full account if we are so fortunate as to be favoured with it. If only we can obtain steam tackle it could at once be set at work to follow the harvest waggon, for which all our horses are usually required.

WORK ON THE HOME FARM.

The heating of hayricks has been so moderate this season that thatching soon followed the rick-building, and the whole of the work has been done quickly and well. We have been surprised to see the hay put into cocks on so many farms this year, for with such settled weather haycocks were unnecessary, and were, therefore, the cause of a waste of time and labour. Still more surprised were we to see much hay carted from the cocks to the ricks, for we know that when this is done there is a risk of musty hay. When hay is put into cocks and so left for a day or two, the hay in contact with the soil is certain to become damp, and it therefore requires to be shaken about and dried before it is put upon the waggons. Before the thatching is done all loose hay is pulled by hand from the sides and ends of the rick. Especial care is taken to have the thatching done well and neatly, and if the ricks have been well made upon a double layer of faggots they may be left undisturbed for a year or two if necessary. When the ricks are finished they should at once be insured in order to avoid all risk of loss by fire. The rate of insurance for a year is 5s. per £100 worth of hay. Hoeing by hand and with horse hoes among root crops has had attention. Mangolds and the early-sown Swedes are now thinned, hoed, and in full growth. As Mustard becomes ready—that is to say, when the seed pods are formed, it is ploughed in. On the whole we have been successful with our early crops of Mustard, and much good work has been done in ploughing-in this green crop to impart fertility to the soil. Winter Oats are fast passing out of the milky stage, and will now soon be ready for harvesting. This useful crop is a good one upon each of our farms this year, a remarkable improvement having taken place in it when real summer weather set in. The straw is long, and the grain abundant. Spring Oats, on the contrary, will have very short straw, nor can the crop at all equal that of Winter Oats. As the horses could be spared from the haymaking, carting of coal and coke for storing for winter has been done. We like to get such odd jobs well out of hand before harvest, so as to be able to keep the horses upon the land after harvest as long as fine weather lasts, and thus get the land clean, ploughed, and also be ready to sow winter corn early.

OUR LETTER BOX.

Improvement of Farm Land (A Young Gardener).—If the weeds in the field where Buckwheat was grown last year are only annuals, then we approve of your intention to plough them in at once with some stable manure. If, on the contrary, there are perennial weeds among them, such as couch grass, plough the land, get out the weeds by using harrows, horse hoes or forks, burn the weeds, and apply the manure and plough it in. You may then sow White Mustard—20 lbs. of seed per acre, to be ploughed in when the seed pods are well developed. If you are successful with the Mustard crop you will have done much to store the soil with fertility, but with hot and dry weather now and in August there is much risk of the Mustard proving a failure. With land in such poor condition you cannot hope to obtain a really useful green crop for the cows so late in the season in your northern county; it will be well, therefore, to confine your efforts to doing all you can to render it clean and fertile for next season. Two courses are open to you in your treatment of the poor pasture—either apply early in March a few pounds per acre of mixed grass seed and Clover seed, procured from one of our best seed firms, and well worked in by bush harrows, or pare and burn the poor pasture, plough in the ashes, and as early as possible next spring sow about 40 lbs. per acre of the best sorts of grass and Clover, with a dressing of artificial manure. We shall soon write another paper on permanent pastures, in which the names and quantities of the grasses and manures we use will be given.

METEOROLOGICAL OBSERVATIONS.


CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude, 111 feet.

DATE.	9 A.M.					IN THE DAY.				Rain
	Barometer at 32 nd and Sea Level	Hygrometer.		Direction of Wind.	Temp. of Soil at 1 foot.	Shade Temperature.		Radiation Temperature.		
		Dry.	Wet.			Max.	Min.	In sun.	On grass	
1886.										
July.										
	Inches.	deg.	deg.		deg.	deg.	deg.	deg.	deg.	In.
Sunday	11 30.181	63.3	56.6	S.W.	62.8	75.2	49.4	115.1	43.8	0.168
Monday	12 30.005	62.1	61.4	S.W.	63.4	68.2	59.9	83.0	58.8	0.249
Tuesday	13 29.983	62.5	58.6	N.E.	61.9	73.2	50.1	121.3	46.1	0.242
Wednesday ..	14 29.416	65.4	61.2	W.	61.4	69.7	53.4	120.6	53.7	—
Thursday	15 29.804	59.0	52.1	W.	60.8	70.3	51.3	110.5	46.3	—
Friday	16 29.759	65.2	58.0	W.	60.4	73.4	51.2	130.2	44.8	—
Saturday	17 30.031	63.4	57.2	S.	61.2	67.1	53.7	93.8	46.7	0.254
	29.883	63.0	57.9		61.7	71.0	52.6	110.6	48.6	0.913

REMARKS.

11th.—Generally fine, and rather windy; a few drops of rain about 7 P.M.
 12th.—Heavy rain early; dull drizzly morning; soaking afternoon and evening.
 13th.—Fine and bright early, but frequently cloudy during day. Heavy rain from 11.30 P.M. and 2 A.M.
 14th.—Unsettled morning—sunshine, cloud, and showers; fine afternoon and evening.
 15th.—Fine, but rather cloudy morn; bright afternoon; cloudless night.
 16th.—Bright pleasant day.
 17th.—Cloudy early; heavy rain all the morning; fair, but damp after.
 A dull damp week, and much cooler than the two previous ones.—G. J. SYMONS.



COMING EVENTS

29	TH	Salisbury Show.
30	F	
31	S	Southampton Show (two days).
1	SUN	6TH SUNDAY AFTER TRINITY.
2	M	BANK HOLIDAY.
3	TU	
4	W	

CARNATIONS AND PICOTEEES.

JULY-FLOWER is an erroneous rendering of the Gilloflower or Gilliflower of the old writers; but though it originated in mistaking the anglicised form of the French Girofle or Giroflée for the correct name, the title is to some extent an appropriate one, for with very little variation we have our Carnations and Picotees at their best from the middle to the end of July. Following the Roses so closely, flowers of less beauty would suffer greatly by the comparison, but if the Carnations cannot equal their regal predecessors in imposing attractions, they yet possess very much to recommend them. Rich, bright, soft, and delicate tints are represented; in the more refined varieties the florist obtains that symmetry of form which is requisite to satisfy his critical eye; the garden-lover who does not strive after such exactitude is delighted with the fragrance and beauty of more robust varieties; and the gardener finds the plants invaluable as affording an abundant supply of flowers acceptable to all, useful for buttonholes, bouquets, or vases, and possessing the important quality of great durability when cut. The whole group of Carnations, Picotees, and Pinks constitute one of the most useful series of garden plants, for with the Tree or Perpetual Carnations now grown so extensively under glass, we secure flowers throughout a great portion of the year, and it is not surprising that they are rapidly gaining more admirers, especially in the neighbourhood of towns where plants that will succeed are so restricted in numbers.

There is some uncertainty in the early history of the Carnation, as indeed there is in that of most cultivated plants; but the earliest mention we have seems to refer to the Clove Carnation, the spicy fragrance and rich dark colour of which render it a favourite in many gardens. The old poets, Chaucer and Spenser, notice the "Sops in Wine," a popular name applied to this plant from the fact of the flowers being used to impart an agreeable flavour to wine and other beverages. "Coronations" was another designation that appears to have been applied to these plants, and some have thought the more modern title of Carnation was derived from this source; but whereas in the case of the Clove the name indicates the distinctive fragrance, in the Carnation it has reference to the colour or what was probably the prevailing tint of the earliest varieties—viz., a flesh or pinkish hue, something like we have now in that charming variety Miss Jolliffe. When the Clove Carnation was first cultivated in England I do not know, but the introduction of the other Carnations seems to date from the middle of the sixteenth century—at least, we have it on the authority of Stow that they were brought here from the Low Countries in 1567.

Thirty years later Gerard's "Herball" appeared, and in that several varieties of Carnations and Gilloflowers were described, their introduction being ascribed to a Master Nicholas Lete. Then followed Parkinson's works, in which many forms were enumerated, and it seems that the plants

were then finding their way into the gardens of many persons, for they are mentioned in some of Shakspeare's plays in a manner that implied they were by no means strangers. Their numbers must have been very rapidly increased, either by seedlings or introductions, for in 1676 Rea gives 360 varieties, considerably more than are named in catalogues of the present time. As garden plants they undoubtedly steadily advanced in popularity, but it was not until many years later that special attention was paid to them by the florists, and the real history of the plants commenced.

At the end of the eighteenth and the commencement of the nineteenth century professional and trade growers were increasing, and a race of varieties of Carnations and Picotees distinguished by their refinement of form and colour was gradually constituted. Early in the nineteenth century Mr. Hogg of Paddington became noted as a cultivator and raiser of these plants, and in 1820 he issued a work which embodied the principles of his practice, together with much of a generally interesting character in reference to exhibiting Carnations and Picotees. A short time ago I was fortunate enough to procure a copy of this book that had been originally in the possession of W. B. Williams, M.A., of Homerton, who was a devoted admirer of Carnations, and had grown them for forty years. The book is interleaved, and abounds in manuscript notes elucidating the culture, or with apposite quotations and remarks of a general character that testify to the observation and knowledge of the writer. Thus, appended to the chapter on "the description of a fine Carnation" is the following note, that appears to me worthy of reproduction. "There is no doubt that whilst we are indebted originally to the Dutch and Flemings for the improvement of the Tulip, Hyacinth, and other bulbous roots, the French (whatever they may be now) were much before us in the cultivation of the Carnation. The old English flowers, and in such estimation with our forefathers, were chiefly what is termed 'Burstins,' and one double pod made, we are told, a very grand display, but these are entirely superseded by the superior properties of the 'French Flakes,' as they were first called. It may not be irrelevant to give the estimate as to the properties of a fine flower which our neighbours had about one hundred years since. 'The Carnation has its stripes formed in the strongest opposition to the predominant colour, into which they never should be softened. They are greatly prized when they have a multitude of leaves, because they form a more elegant head. It is also much more graceful when the head is beautifully rounded than when it is only flat. Too great a number of spots is a deficiency as it creates confusion in the flower, and when indented instead of being properly arched or round, the whole makes a wretched appearance.'" This quotation must refer to a date early in the eighteenth century, if the writer's statement be correct that it indicates the standard amongst the French florists one hundred years before the publication of Hogg's book, and is therefore especially interesting.

About 1826 the Shows devoted to Carnations and Picotees, or at which they constituted the chief features, became numerous, and in "London's Magazine" of the year named are reports of such exhibitions at Lancaster, Manchester, Preston, York, Windsor, and Uxbridge, all held from July 12th to 21st. At most of these the prizes were offered for single specimens of blooms and not for collections, as at the National Society's exhibitions at the present time, yet the competition was sometimes very keen and much interest was excited. Hogg tells with what eagerness the principal London florists would enter the lists at Windsor for instance, where they could compete with Mr. Gould, then in charge of the Royal Gardens there, and how earnestly they endeavoured to defeat him. We could scarcely imagine now seeing Mr. Jones, of Frogmore, or Mr. Penny of Sandringham, entering the lists of the Carnation Show at South Kensington against Mr. J. Douglas or Mr. Turner of Slough; but we can fancy how much it would add to the interest of the competition. About this time there were several noted growers besides

Hogg, for at Northampton Mr. Cornfield had such a large and excellent collection that he challenged all England to surpass him; and Mr. J. Knight of Chelsea is reported to have said that he might challenge all Europe. There were also a Mr. Woollard at Ipswich, and a Mr. Weltjie at Hammersmith, who had gained some fame as cultivators, and who took prominent places at the chief shows. The rapidity with which the varieties were being increased is indicated by the fact that a Paddington catalogue of 1827 enumerates 700 forms, the majority of which are now lost, or only a very small per-centage can be found in collections.

A rather important event, as bearing on what may be termed the modern history of the Carnation, occurred in 1832, for in that year the late Mr. Charles Turner, then only a lad fourteen years of age, secured his first prize for Pinks, and this induced him to turn his attention to a family of plants that in subsequent years he did so much to improve and popularise. One result of these efforts was that a Show was held at Slough in July, 1850, the National Carnation and Picotee Society was instituted, and a second Show was held the same year at Derby. The annual exhibitions held since that date at which Messrs. Turner, Douglas, and Dodwell became such successful competitors, have served to maintain the popularity of the flowers, for though the number of florist competitors does not increase, the amateur cultivators advance steadily, and they value these shows as fixing a standard of quality and as a direction to them in their efforts to develop the best characters of the flowers.—AMATEUR.

THINNING THE FRUIT CROPS.

THERE would appear to be extra heavy crops of some fruits this season, and more especially Pears and Plums. It seems to me there are really too many of the former, not only for the good of the trees, but also for the good of the owners where these market all or a certain proportion of the crops. A heavy crop of fruit exhausts the trees more than we sometimes anticipate, and the consequence is a failure in the next, and it may be following seasons. We had a few trees which perfected an extra quantity of fruit last season, but although these bloomed freely, more so in fact than others near them which bore few or no fruit last year, yet they have completely failed to set any fruit worth preserving. The bloom was imperfectly formed, hence the failure to set. I find that there is every prospect of abundance of Pear and Apple blossom next season, but in order that this bloom shall be of a nature likely, weather permitting, to set properly, we must see that the trees are not unduly weakened at the present time. Apples will not require much thinning, the only noteworthy exception being the invaluable Lord Suffield; but the case is very different with the Pears, as the crops of these are simply enormous. It is true if the trees are left to themselves a certain amount of natural thinning will take place, and with orchard trees this may be the only course open, but it is a "bad business" to weaken trained trees to such an extent as this.

It has been remarked in my hearing, "I wonder if Iggulden practises what he preaches?" Well, I admit I have not thinned crops of choice fruit under glass nearly so much as I ought, but I am not making this mistake with the Pear and Plum trees, for at least two-thirds of the fruit of the former have in many instances been removed. A quantity are cut away every time I pass by the trees, and that too after a thinning given when all the lateral growths were shortened to about 5 inches of the main branches. Nearly every cluster of two or three is reduced to one fruit, and even then there are too many on such sorts as Williams' Bon Chrétien, Beurré d'Amanlis, Beurré Diel, Beurré Clairgeau, Easter Beurré, Doyenné du Comice, Doyenné Bonsoch, Marie Louise, Pitmaston Duchess, Duchesse d'Angoulême, Glou Morceau, Ne plus Meuris, General Todleben, and other large or medium-sized varieties which are generally of poor quality unless fully developed. Not merely is it necessary to thin out the Pears freely in order to prevent an undue exhaustion of the trees, but this thinning must be resorted to if the crops are to be of any marketable value. The market will be flooded with inferior produce, much of which will be almost given away, at any rate so far as the growers are concerned, and it is only the very prime samples that will sell at a fair rate. This alone ought to induce many to thin their crops who are usually very careless in the matter. Young trees, again, that have been planted recently ought not to be cropped this season, or if any fruits are left on them they should be only sufficient to test the sort. Let them grow vigorously, and thereby lay the foundation for future profitable bearing. One of the

best gardeners in the country recently told me in a conversation about fruit trees that he was never in a hurry to crop them. "Let them grow," he remarked, "they will become fruitful enough by the time they have arrived at something near their natural size." He finds that if the knife is not too freely used there is little or no necessity to severely root-prune the trees with a view of causing them to be fruitful. Root pruned trees are wonderfully fruitful this season, but as might be expected they are making little or no growth, and unless the crops are severely thinned out a check will be given to the trees from which they may never recover. Stunted pigmies are of but little service, and overworked large trees in the long run are not nearly so profitable as those that are cropped judiciously.

Plums are very heavily laden with fruit, such free-bearing sorts as Victoria, Magnum Bonum, Washington, Rivers' Prolific, Orleans, and Goliath being much too plentiful; while the Green Gages, Jefferson, Coe's Golden Drop, and Kirke's, are all carrying good crops. On some of the farmers' houses in this neighbourhood there are some very fine Plum trees, but nothing I can say to persuade the owners to thin the crops has much effect; yet, unless they are freely thinned, the fruit will be small and poor in quality. A Plum cannot be too large, as the finer they are, according to the respective sorts, the richer they are. If all are allowed to ripen that the trees can support only a very few of the fruit will be of a presentable size and quality, and the tree's attempt to perfect such heavy crops is bound to materially weaken them. The market growers thin their crops when the green fruit is large enough for tarts and other purposes, and many tons of green fruit will this season find their way into the markets. It does not follow that if the thinnings cannot be sold that it does not pay to thin out, but on the contrary it is the surest plan of securing plenty of fine produce of the best description for either home use or for sale.—W. IGGULDEN.

CUTTING ASPARAGUS.

My first brief note on this subject does not appear to have been sufficient for "A Thinker," and I am asked to "Try again." Well, anything to oblige. There is no question of other growths springing from the same crowns if the first heads are cut, nor is there any doubt of other growths appearing if the first are not cut. It is the same whether there is cutting or no cutting. The heads or growths are produced successively up to a certain time, and we get from the same crown or stool a number of growths without any cutting whatever. By cutting the first heads other growths are produced more quickly than if the first were retained. Are these other growths likely to get even stronger than the originals would if they were left unchecked? The growths rise in priority of their formation. The first growths are fruitful (make a note of the fact, Mr. Thinker), the later growths are less fruitful or sterile; but the early growths or heads are of consequence for cutting. Suppose, however, the first growth is weak, it may be a seedling, a weak plant that produces it. It makes a poor growth without seeding. Cut off its head. It will only take support from the other growth. Put on your thinking cap Mr. Thinker, and tell us what you think about that phase of the subject. I see the fruit bud question is uppermost in his mind. I may tell him the "cut in" on that subject is in the hands of the Editors, and has been for some days, awaiting publication. To resume. The first growth of Asparagus is weak. Leave it. Another growth will follow, and be much stronger. Why? Did you ever raise Asparagus from seed, Mr. Thinker? It only sent up a tiny thread like head; it grew larger, and formed a lovely spray. Did you cut its tiny head off? No, otherwise you would not have seen the beautiful spray. Yet before summer is out the tiny thing has pushed other shoots as strong again as itself. It has formed buds at its base, the soil is good, and the buds cannot wait until another year. The first growth ought to be cut away if the other growth gets stronger without it. You do not do that, however, nor cut any "grass" the following year. How is this?

The growths of seedling Asparagus are not cut at all in the first, the second, and very often third year, and in the fourth the plants have, by retaining all growths, sufficient strength for forcing or giving heads fit for cutting. Oh! but had the first growths been cut in the second and third years would not the grass have been much stronger in the fourth? How many beds have been ruined by too early cutting of the grass? If any are cut at all it is the first heads, so that others do not get any larger for it. Then have you never had the first heads cut off by frost or damaged, if not broken off, in transplanting. Yes, many times in a forty-years experience, and the plants always made a strong second growth and did well afterwards. The plants made the strongest growth after the weather became warm; therefore the first growth cut gave a much stronger aftergrowth than when the first growths were allowed to remain. We have seen that it does not answer with young Asparagus wanted to get strong as soon as possible, and yet it answers with frosted or transplanted.

Nothing of the sort. It is a difficulty that cannot be overcome in any other way, and establishes no fact in this case.

Now for cutting the young growth or "sprue." When I was a lad my place was to serve the kitchen. The chief was nearly four-score. Cut all the heads as thick or thicker than the thumb for the "room," any smaller cut for the pigs; cut all. These were my instructions, yet there were, I think, twenty beds I was not to cut at all. These were for forcing, and I certainly should have liked to have had a "cut in" at them many a time, for the heads were neither too large nor too plentiful for the supply in the permitted ground. After a time I was told to leave some of the grass; only cut the strongest, and where there were many together thin some of them out. Peas came in in June. The Asparagus was less called for, but I was to keep on cutting until the 10th June, then I was not to cut any without consulting him. Peas did not come on fast enough. I had many a "cut in" at the Asparagus after the 10th; in fact, we ceased on the 21st. The bed or plantation was too thick of grass. We cut so that the grass could have light and air, thinned it where thick, cutting away the weak, and leaving the strong. The Asparagus had been so treated the last fifty years, the old man said, and he was considered clever in a kitchen garden, but I hardly think the beds in question were more than twenty-nine years old. We did not let the grass grow up in any shape until May was far spent, certainly none until after the middle of the month in an early season, and the earlier the season the sooner we left off cutting the grass. Did the practice answer? It answered well for those times, but I have grown much finer Asparagus heads in three years than were then grown in six—*i.e.*, from seed. I followed the old plan on my own account some years, but as "sprue" was never much valued I gave up growing it, and simply let the grass grow until it gave heads fit to cut, and I have every reason to be satisfied with the result; only seeding was prevented as much as possible by cutting first growths having that tendency, as seeding weakens the plants considerably. There is much to be said both for and against both practices. Cutting small early grass is no great injury—it may even strengthen the buds that remain; but I find a good haulm infinitely more so, especially to young plants: yet thinning, judiciously practised, can only have one effect—namely, strengthening those growths that are to remain for forming buds to furnish the next year's crop. There is one thing, however, that cannot be too strongly impressed upon the minds of growers of this esteemed vegetable, and that is not to cut more grass after the beginning of June than can be helped, and none at all after the middle of that month. The necessity of thinning at that time or soon after will be apparent; but this is not so important now as thirty years ago, through the plants being now given fully twice the space or more as obtained at that period.—G. ABBEY.

I SHOULD like to have a line in on the above subject. I have a fine piece of Asparagus sown in 1832, and planted in 1834, 2 feet apart in rows, the same distance asunder on the level, and I have not seen anything yet to match it. Last year, it being fairly strong, I was foolish enough to cut it too late—up to July, with the result that this spring I saw it was wrong. Then I decided not to cut for use or sale, but simply to keep all weak growths down. I did so weekly, and the sight now is good. However, having a quantity, I varied my treatment by cutting a few in the usual way, cutting all the heads down of some others, except two or three of the stronger, and these are undoubtedly the best, and are now throwing up heads as thick as my fingers. Some I left entirely alone, but I think this is wrong, as they are now a mass of crowded growths. In the case of the two or three best first crowns which were left the strength of growth is marvellous, standing 6 or 7 feet high, with the finest seed pods I ever saw.

When commencing cutting, I think if two or three of the strongest crowns were left alone, and all but these cut away as usual, we should be on the right track. I think cutting the strong and leaving the weak is wrong. I have gone so far as to select one crown only, and left it to grow alone. The result I will note next year. I believe there is more in the cutting than growing. My main bed is 36 yards by 17 yards. I have also a bed the same length, 4 yards wide, just as it was sown. The rows, however, are 3 feet apart, as I took up every alternate row for planting. This seed bed, though not so strong, caused by the plants being thicker, looks very promising. Some of this I have thinned and kept to three or four crowns, but most of it I have let grow wild. I expect something good will come from my single crowns, and also the two or three or four clumps. In any case I fail to see what good the weak sprue can be to the plant. I prefer keeping all down until I have done cutting, then leaving a few good shoots. Any reader of the Journal is welcome to see my Asparagus.—STEPHEN CASTLE *West Lynn*.

ORCHID NOMENCLATURE.

IN reference to *Oncidium macranthum* Southgatei, mentioned in the Journal, p. 66, I think that the Royal Horticultural Society has no right

to authorise a Latin name of this character, because the use of a Latin name, constructed as this was, would imply that the plant had been duly named, registered, and described or figured by competent authority; whereas it was clear that this was a chance variety which made its appearance in the exhibitor's Orchid house, and to which the exhibitor or his gardener had applied the name without attempting to describe it.

If a botanical name be given it should be in conformity with botanical usage, if a garden name be given there is no law to prevent anyone doing as he pleases. *O. crispum* Hrubyanum was, I believe, authoritatively named and described by Prof. Reichenbach. If so the name must stand, if not it should be called Hruby's variety. The Committee should, for the avoidance of confusion, uphold law and order, but, of course, it cannot control individuals, and if Baron Hruby or Mr. Southgate choose to call their plants Hrubyanum or Southgatei there is nothing to prevent them, only the Society should not recognise unauthorised names.—A BOTANIST.

CULTIVATION OF THE STRAWBERRY.

(Continued from page 62.)

FORCING STRAWBERRIES.

VARIETIES.—Perhaps no fruit is so generally acceptable as forced Strawberries. It is the first ripe, and the most readily accommodated, for the amateur can have good dishes from plants on the shelves of his greenhouse. It is essential that free setters, good swellers, free cropping varieties be selected for forcing, the fruit large and highly coloured, bright, shining, and fresh. Dull-coloured fruits, however good in flavour, find no favour at table or market. The varieties are best divided into sections, as they are not all equally influenced by heat, and are differently affected by time of forcing.

I.—Varieties for starting before the new year for the early crops—*La Grosse Sucrée*, *Vicomtesse Hericart de Thury* (*Garibaldi*), *Princess Frederick William*.

II.—Varieties for starting with the new year for second early crops—*Sir Harry*, *Bothwell Bank Prolific*, *Empress Eugénie*.

III.—Varieties for starting by the middle of February for midseason crops—*President*, *Marshal MacMahon*, *Sir Charles Napier*.

IV.—Varieties for late crops requiring to be brought forward very gently and not subjected to artificial heat before early March—*British Queen*, *Dr. Hogg*, *Cockscomb*.

The best of each section are, all points considered, I, *Vicomtesse Hericart de Thury*; II, *Bothwell Bank Prolific*; III, *President*; IV, *Dr. Hogg*. Two of each section—I, *La Grosse Sucrée* and *Vicomtesse Hericart de Thury*; II, *Sir Harry* *Bothwell Bank Prolific*; III, *President* and *Sir Charles Napier*; IV, *British Queen* and *Dr. Hogg*. A few good sorts grown well are better than a number of varieties. Three of each section are:—

I—*King of the Earlies*, *Black Prince*, and *Pauline*. II—*Ne Plus Ultra*, *Duke of Edinburgh* (*Moffat*), and *Sir Joseph Paxton*. III—*Sir John Falstaff*, *James Veitch*, and *Prince of Wales* (*Ingram*). IV—*Mr. Radclyffe*, *Premier*, and *La Constante*. Perhaps the richest in flavour of all forced Strawberries are *Filbert Pine* and *Myatt's Eliza*.

A dozen varieties for very large fruit in cool houses, such as orchard houses, Peach cases, &c., irrespective of quality, are *Marguerite*, *Abd el Kader*, *Mammoth*, *Goliath* (*Kitley's*), *Eleanor*, *James Veitch*, *Sir Charles Napier*, *President*, *Dr. Hogg*, *Cockscomb*, *British Queen*, and *Carolina Superba*. The king fruit should be retained of each truss, and not more than three or four fruits taken on each plant. For general purposes a few reliable sorts are much the best. Mr. R. Gilbert, who grows Strawberries well, relies on four sorts—*La Grosse Sucrée*, *Vicomtesse Hericart de Thury*, *Burghley President*, and *Sir Charles Napier*. All are of good size, colour, set and swell freely, and finish well. *Burghley President* is a selected form of that popular variety, the one Strawberry for any soil and purpose.

PLANTS FOR FORCING.—Early runners are always desired by the Strawberry forcer. Late runners of the previous year kept in small pots, or pricked out in nursery beds and placed in spring into small pots, and transferred to the larger size in June, have been advocated with a view to obtaining an early matured growth. These have two great faults—1, Forming a number of crowns or fruit buds; 2, Ripening early, the plants start the buds prematurely, often as early as September. These are fatal objections. Runners are sometimes taken from forced plants, being detached when they have a leaf or two and are showing roots, potted, and established in a close frame, hardened, and given the largest pots in July. These also have a tendency to form a number of crowns, and to start into fruit prematurely. These plants are not advisable. They with late runners are weak, and do not form a strong central crown or bud. Strong

runners of healthy plants are the only suitable ones for forcing. There is a difficulty sometimes in procuring runners sufficiently early, but I have not experienced any difficulty when strong healthy runners have been placed out in the previous year and well attended to. The plants, in fact, must be the first runners of plants that were placed out the year before. Healthy, strong, fruitful plants only should be selected from; weakly, sparse-fruited, and not vigorous plants are no good for affording runners.

ROOTING THE RUNNERS.—Some detach the runners as soon as they have formed a joint, a leaf or two, and are showing roots, potting and placing them in a frame, keeping them moist and shaded until rooted, then hardening them, and shifting into the large pots. This is not a good plan, as everything depends upon the care and skill of the cultivator. Some layer the runners into large pots at once. It is not a commendable practice through the soil having to be made so firm that the roots do not permeate it freely, and the plants are slow in becoming established, the main or radical roots pass to the sides of the pot, leaving the mass of the soil unoccupied, the drainage is liable to be clogged by worms through having to remain so long on the ground, and the labour is much greater than layering in small pots. Carrying water to a thousand runners in large pots for six weeks is a much more serious affair than for the same number in 3-inch pots for half the time. It is a lumbering system; not nearly so many plants can be had in the same space, and is not advised, as it affords no advantage corresponding to the increased labour.

Layering the runners in small or 3-inch pots is the most suitable plan. A few plants in fruiting pots near water may answer, but even then the objections given above are not removed. Early runners layered in small pots or in turf are the best, and to get these the parent plants should be mulched with decayed manure and some dry or long litter if fruit is wanted. It is preferable, however, to dispense with more than dessert fruit if strong runners are desired cutting off all others, and it is better still not allowing fruiting, setting plants apart for affording runners only. Supply water freely, as the plants otherwise cannot give early runners nor nourish them afterwards.

POTTING.—When the runners are well rooted detach them. Stand them on ashes on a north border, keeping the soil moist at the roots, and sprinkle over the foliage if dry morning and evening. They will root rapidly, and must be transferred to the fruiting pots before the soil is too hard. A week or ten days at most will be sufficient time to allow for recovering the detachment, or to "wean" them. The plants must be moist at the roots, so that they will turn out readily.

Five-inch pots are employed for plants to be started early, or before and with the new year, and 6-inch pots for those to be started afterwards. Different makers have different sizes. Some 48's only measure 5 inches in diameter at the rim inside, some only measure 5 inches including the rim. The measurement should be taken three-quarters to an inch below the rim, or the pots should measure respectively $5\frac{1}{2}$ and $6\frac{1}{2}$ inches inside at the rim at the top. It does not matter, the potters tell us, but I find it makes all the difference between success and failure. The pots should be clean inside and out; if new, soaked in water, and drained before use. Hard are preferable to soft pots, as the former keep clean longer. The hole should be three-quarters of an inch in diameter; less is useless, larger unnecessary. One large crock, so as to cover about half the bottom of the pot, and concave side downwards, with three or four pieces of a little smaller size to form a layer over it, and then a thin layer of small pieces sifted so as to remove the dust, or, better, a thin layer of half-inch bones. An inch to $1\frac{1}{4}$ inch depth for the smaller size of pot, and about $1\frac{1}{2}$ inch for the larger size is sufficient drainage. An oystershell concave over the hole and some crushed bones make capital drainage.

COMPOST.—Loam from turves cut 2 inches thick where the soil is of a good friable nature, neither light nor heavy, and stacked in spring grass side downwards, or not longer than the previous autumn, is the best material. To this torn up roughly, or in pieces of an inch or 2 inches, add a fifth of well-decayed manure free from worms, or failing this horse droppings that have been turned in a shed a few times as is done in preparation for making Mushroom beds and a quart of soot to every bushel of the loam. If the soil be deficient of grit add a tenth of old mortar rubbish, and if bones are not used for drainage a quart of bonemeal may be added. Loam varies considerably in different localities. Heavy loams are improved by an addition of a fifth of burned clay or lime rubble, and light loams by an admixture of a fifth of heavy loam. The best result I have had in forced Strawberries was from using a compost heap for potting. The materials were mixed well together, turned several

times, and passed through an inch sieve. This just suited Melons, and it passed through a half-inch sieve, gave a fine mould, to which was added a tenth of quicklime also passed through a half-inch sieve, and a little soot. Six cartloads of this greatly improved a lawn that was previously spoiled by moss and lack of grass. The rough portion enabled us to grow Asparagus, and what was thought quite as much of—viz., Horseradish.

Place enough of the rough of the compost in the pots and ram it—I use a potting stick made out of a broom handle about 9 inches long—firmly so that the plants will have the roots setting just level with the soil, half to three-quarters of an inch below the rim for the 5-inch, and three-quarters to 1 inch for the 6-inch pots below the rim of the pot. The soil must neither be wet nor dry. Some use dry soil, and others use wet soil, but both are objectionable. Ram the soil hard about the roots, and finish off at the height named below the rim. The plant will stand in the centre, all the roots covered with soil, and the whole of the plant to the base of the leaves above the soil. That is as it should be, the roots in the soil, and no part of the plant, not even its neck, buried.

SITUATION FOR THE PLANTS.—Every ray of light from dawn till eve is wanted to insure a sturdy thoroughly solidified growth; therefore the situation must be open alike to the sun and air, but winds must be broken, as the leaves brushed to and fro against the rims of the pots by wind are seriously injured, hence shelter afforded hedges or walls without being so near as to shade the plants is desirable. The situation must be made impervious to worms. A concrete or cement bottom is best, and a scattering of ashes to stand the pots on is better than standing the pots on the hard bottom, as it lets the water pass off freely and retains moisture. Ashes 6 to 9 inches thick form a good standage for the plants, and is easily secured in most places by a little forethought. The pots are often stood on garden walks, but they spoil the look of the borders, and worms attracted by the moisture ruin the walks, and very often the Strawberries. If no better place offers the best must be made of it, but if there are fruit trees that shade the Strawberries, or the site is windy and the walk is not impervious to worms, it is no use expecting fine forced Strawberries.

Place the plants on the ashes, but do not plunge them. If the plants stand just clear it will do for the present, leaving space between the rows for watering. In about three weeks the plants will have the roots at the sides of the pots, then plunge them and give all the room intended, say 12 to 15 inches apart. The plunging will economise watering, and it will protect the roots in autumn from being injured by early frosts. I have seen Strawberries left on garden walks until the soil was frozen through, many of the pots burst, and the roots quite brown when turned out in January, the consequence being that the plants pushed weakly leaves, and never give full crops of properly swelled berries. Ashes and cocoa-nut fibre refuse are good materials for plunging in, preferably the latter. Sometimes the plants are placed on a north border for a few days. I do not think anything is gained thereby, for what is secured in shade and moisture is lost in heat, and by using a little tiffany on hot days the plants soon recover from the potting.

WATERING.—The plants must never lack water. None ought to be given until the plants need, but before they flag a thorough supply must be given. The plants should be examined in the morning, noon, and late afternoon, not necessarily to supply water, but to see that none is suffering. On hot days sprinkle the foliage in the evening. Cut off all runners as soon as they show a joint. They take no support until the plantlets show on the runner, and up to this stage they encourage root-action, but once the plants are fairly on the way keep runners off as they appear. Weeds must not be tolerated, but be cleared away, and the surface of the soil be kept free from moss.

FEEDING.—This will hardly be necessary, but if the plants do not become as strong as desired and the crowns are not plumping well, weak liquid manure may be given at every alternate watering, or three times a week. I find stable and farmyard drainings diluted with six times the quantity of water suitable. That alternating with soot water, a peck to 60 gallons of water, the soot put in a bag and stirred two or three times a day for three days, is capital. I have tried surface dressings of nearly every manure, both stirred in and washed in, without much benefit. The best I have used is fresh horse droppings rubbed through the hands and sprinkled on the surface of the pots. It surpasses everything in maintaining the roots, and that washed out helps those that are down. Short manure free from worms is excellent.

REMOVING SIDE CROWNS.—One crown, a strong well developed plump bud, is requisite to ensure fine fruits. As soon,

therefore, as side buds become visible remove them. Some varieties are much given to form side issues, especially *Vicomtesse Hericart de Thury*, and unless they are removed we get many crowns, which all take support, and a correspondingly weak central one. Take care in removing the side buds from the axils of the leaves not to injure the leaves or the central bud. They are best pushed sideways with a knife point, or pointed piece of hard wood. The central bud will then become strong and more highly developed, pushing strong trusses and more readily than those with many crowns when placed in heat. Sir Harry and La Grosse Suerce are not much given to forming side issues, but they are the best looked over not later than the early part of September; indeed, all should be so treated where fine fruits are desired, continuing it up to October, but the earlier it is attended to the better chance of the crowns becoming well developed.

WINTERING.—By early November, or in cold seasons the middle of October, the earliest plants must be placed in their winter quarters in frames or pits, and plunged to the rims of the pots. The lights need only be used in the case of heavy rains, then tilted top and bottom, and in case of snow or frost. Whenever the temperature is above 35° outside withdraw the lights. All that is wanted is protection from heavy rains, snow, and severe frost—complete rest as far as it can be effected without drought. The plants must be looked over for water, and given whenever necessary. The frames or pits must be where they will receive all the light possible. In severe weather protection should be over the lights.

Midseason plants should be removed to a sheltered situation, and be plunged to the rim in ashes or other material, but if they are in a position such as advised for growing they will be best left alone, seeing that the mulching is brought up to the rim of the pots or over them. In very severe weather they can be protected with a little dry soft straw, to be removed in mild weather is all the protection necessary.

Late plants require similar treatment to the last named. The roots must be protected, but the tops are hardy, or the little attention indicated in severe weather is all that is desirable. All plants should be in their winter quarters before the setting in of severe weather. It does not answer to let the roots get frozen in the pots, they must be removed before that occurs. No amount of rain or snow will injure them if the drainage is clear. Stacking the plants against walls in sawdust is an obsolete practice, also keeping them in orchard and Peach houses dry, and with a current of air passing through the structures.—G. ABBEY.

NEW PEAS CERTIFICATED.

At a meeting of the Fruit and Vegetable Committee held at Chiswick recently, present, C. Silverlock, Esq., in the chair; Messrs. Weir, Sutton, Miles, Norman, Denning, Warren, Law, and Barron (Secretary), the collection of Peas growing in the garden was examined, and first-class certificates awarded to the following:—

Fame (Eckford).—A green wrinkled Marrow, with large deep green well-filled pods; height 5 feet.

Empress (Eckford).—White wrinkled Marrow, well filled large broad pods, vigorous grower; height 5 feet.

Seedling No. 16 (Wildsmith).—White wrinkled Marrow, very long pods, strong grower, good cropper; height 4 feet.

President Garfield (Veitch).—White wrinkled, large well-filled pods, heavy cropper; height 3 feet 6 inches.

FLOWER SHOWS AND "AMATEURS."

It was with much satisfaction that I read in this week's Journal the letter signed by "Saxoring," and very cordially do I agree with his remark that "things are not at present quite fair to the real amateurs, and want a little supervision by those whom it concerns to keep each class as it ought to be, purely professional and purely amateur," and it seems to me that this is peculiarly true with reference to exhibits of cut Roses, whether at shows of Roses exclusively, or in classes at mixed flower shows.

As an illustration let me mention my own case. I am engaged in the city every day from 9 to 6—that is to say, I am away from home from 8.20 A.M. till 6.40 P.M., and as my salary is too small to allow me to engage help, I have to do all my work—planting, budding, pruning, manuring—myself. In addition to this my garden is within five miles of St. Paul's Cathedral.

Well, now, desiring to try my strength at the shows, I go to the Crystal Palace, and in the smallest class (twelve singles) I have to compete with the gardener to a gentleman who has a large estate in the most lovely part of Surrey, and who counts his Roses by thousands, and with four similarly situated gentlemen from other parts of the country. At the National it is the same, although they have done something to meet the difficulty by providing a number of divisions, and not allowing the same man to compete in more than one. But still, in most cases my

competitors are gentlemen who have ample means, good situations, and regular gardeners. It does seem to me that a distinction should be made between gentlemen so situated and those, like myself, who have to do all their work with their own hands.

Well, sir, I would not have troubled you with this letter if I had not had a suggestion to offer which I think would at least partly meet the case. I was looking over the schedule of a large local show, in which after two or three open classes there was one provided "confined to those amateur members who do not have assistance more than two days a week." Now, I think that is an example which might well be followed by the Crystal Palace managers, and particularly by the National Rose Society, which seeks to promote interest in the Rose in all possible ways. Let there be a class provided, say, for twelve blooms, confined to those who only have the help of a gardener once or twice a week. I believe there would be a good entry when it became known, and would prove a real encouragement to the small men who under present circumstances feel that it would be labour in vain to think of exhibiting. I commend the idea to the proper authorities, and hope it may be well discussed and favourably received.—A SMALL ROSE GROWER.

DENDROBIUM WILLIAMSIANUM.

ON Tuesday, July 13th, Mr. B. S. Williams, Upper Holloway exhibited at South Kensington a plant in flower of the remarkably



Fig. 13.—*Dendrobium Williamsianum*.

distinct and handsome *Dendrobium* named above, which the Flora Committee very deservedly honoured with a first-class certificate. The appearance of sterling novelties like this add surprisingly to the interest of the meetings, and the general question addressed to horticultural visitors on the day named was "Have you seen Mr. Williams' grand new *Dendrobium*?" But perhaps the plant can scarcely be termed a novelty, though its flowers are, for it has been in cultivation for eight years, having been introduced to the Upper Holloway nursery by Mr. Goldie, who, when collecting in New Guinea discovered this species, and it was named in honour of the well-known genial orchidist, Mr. B. S. Williams. At first sight the flowers in form are suggestive of the Rainy Month Flower of Ceylon, *Dendrobium McCarthiae*, but the colour is different, and upon a closer examination some structural differences are noticeable. The plant has slender tapering terete pseudo-bulbs, with a few small leaves scattered along them. The racemes are produced from the upper portion of the pseudo-bulbs, and the one from which our engraving was prepared (fig. 13) had six flowers and buds, but the uppermost one had been

removed. The sepals and petals are oval, nearly equal in size, pure white, and depressed over the lip, which is proportionately large, scoop-shaped, and of a beautiful rich violet purple hue, with a prominent central ridge of a similar colour. It appears that the plant is somewhat shy of flowering, but now it has at last revealed its beauties it may be hoped that its peculiar requirement has been discovered, and that we shall not have so long to wait for the re-appearance of the flowers.



THE annual Exhibition of the NATIONAL CARNATION AND PICOTEE SOCIETY (Northern Section) will be held in the Royal Botanic Garden, Manchester, on Saturday, August the 18th.

— A CURIOUS typographical error occurred in the report of the HULL SHOW on page 73 last week. It is stated in the third paragraph that the "Secretary is still young." If the sentence had been accurately printed it would have read, the "Society" is still young. The Secretaries are in the vigour of manhood, and it will not be through their shortcomings if the Society does not have a vigorous career. Mr. McMahon sends us a card showing the plan adopted three years ago of affixing the exhibitors' names in the manner practised at most large shows, but local prejudice was too powerful for the continuance of the practice. In this case small numbered cards might be provided for judging, and the larger, with the exhibitors' names and addresses previously written, placed in position, with prize tablets, immediately the awards were made. A show, minus the prize cards, is shorn of half its interest to visitors.

— THE CUCUMBER HOUSE in Messrs. Veitch & Sons' seed grounds at Turnham Green, presents a remarkable appearance at the present time; 250 fine fruits are now ripening, for, it is perhaps almost needless to add, the Cucumbers are grown solely for seed. The variety is a selected strain of Telegraph, and we have never seen a better. The fine crop reflects much credit on the grower, Mr. Hickman.

— THE ANNUALS in these seed grounds look very pretty now. They are not grown in large quantities to provide seed for sale—the seed farm proper is at Langley near Slough—but in small beds for trial and comparison. The diversity is great, however, if the quantity is not, and collectively they are very gay. Some very fine double Zinnias especially attract attention, and beds of handsome Stocks, of which several selected strains are being grown for trial, were admired.

— THE second annual Show of the SHEFFIELD AND WEST RIDING CHRYSANTHEMUM SOCIETY will be held in the Corn Exchange, Sheffield, on Friday and Saturday, November 19th and 20th. There are nine open classes, in which the chief prizes are £5 to £2 and £1 in two separate classes for twenty-four incurved blooms and twenty-four Japanese in eighteen varieties respectively. The National Chrysanthemum Society's certificate will be awarded to the premier plant in the Exhibition.

— MR. JAMES STRACHAN, Oakbank, Comrie, Perthshire, writes:—"Last season I observed in the *Journal of Horticulture* some notes regarding JAMES VEITCH STRAWBERRY. A sample I now send per parcels post. If I remember rightly the article in question stated this Strawberry would only do in the sunny south. Here it does remarkably well is a fair cropper, and of good colour. The ground on which they are grown is a light loam resting on gravel, and the sample sent is from three-year-old plants. This place nestles within a rifle shot of that range of mountains which extends from Crieff to Lochearn-head. President does favourably here, and compares favourably with those I have grown when living in Norfolk and Kent (Sevenoaks). This place is much frequented by tourists and summer visitors, and all have been of opinion the size and quality here have been as good as any in the south of England or Scotland." The fruits sent were exceedingly fine, the largest being 2½ inches and 3 inches in their longest diameter. They were also of good colour, and though slightly damaged in transit were of good flavour.

— TAKING CHRYSANTHEMUM BUDS.—In reading Mr. Molyneux's article on this subject in the *Journal*, it appears to me that the time he

names is quite too late to enable growers in the north to have their flowers in form in time for the exhibitions, say from 15th to 25th November. I do not pretend to sufficient experience to advise on the point, but if such well-known northern growers as Mr. Lindsay, Mr. Mease, or Mr. Tunnington would give their opinions on the point, I am sure it would be greatly appreciated.—NORTH LINCOLN.

— "S. C." writes as follows on LOXFORD HALL SEEDLING STRAWBERRY:—"I little thought there was a Strawberry that could surpass the old British Queen in quality, but so it is. Sir Joseph Paxton is very good, also President, and a much heavier cropper; then grow a large batch of British Queen for main late consumption, but Loxford Hall surpasses them all. What will make Loxford Hall more valuable as a late fruit is the fact of its ripening and colouring so thoroughly. With me British Queen, unless the fruits are off the ground, colours badly at the tips and is inclined to be hard. Loxford Hall has a fine aromatic flavour, and it appears to be strong in constitution."

— ON Tuesday, July 20th, favoured with glorious weather, the twelve BELGIAN, FRENCH, AND DUTCH HORTICULTURISTS, including Messrs. H. Van Hulle, E. Lemoine, Besson, Delaux, C. Havenith, and L. Walthery-Halkin, now in England on an excursion to seek information and instruction from the various establishments, paid a visit to Messrs. Cannell & Sons, Swanley. On arrival the nursery and greenhouses were thrown open, and they were allowed to ramble at their leisure and remain as long as they chose over any special object which interested them. The construction of houses, heating apparatus, &c., came in for their share of inspection. Dishes of Strawberries were placed in a central position, and as the visitors passed in and out of the several houses they freely indulged in the fruit, with which the neighbourhood abounds. Having passed through the various departments, luncheon was served at the Lullington Castle Hotel, after which the fruit-growing portion of the locality was inspected (at present in full pick) and the quantities now being dispatched to every large town in the north of England appeared to astonish them. Finishing with a run through Mr. Ladd's immense fruit-growing establishment they returned to London highly delighted with the day's outing, several asking permission to come again to glean further information.

— A CORRESPONDENT states that "the annual LICHFIELD HORTICULTURAL EXHIBITION was held in the Museum grounds on Wednesday, 21st inst., and proved to be one of the best ever held by the Society. The day was fine and the attendance numerous. There were many entries in the principal classes, and most of the exhibits were of excellent quality. Plants were well represented by Messrs. Chapman of Hawkesyard (not for competition), and G. Meakin, Esq., of Burton-on-Trent. Flowers by Messrs. Perkins of Coventry, and Trevor of Lichfield; fruit by Messrs. Gilman of Ingestrie, Udale of Elford, and Sir G. Wilmot, Horton. Mr. Gilman, gardener to the Earl of Shrewsbury and Talbot, taking the lead with vegetables. The leading prizes in classes for plants were awarded as follows:—For four stove plants, four greenhouse plants, and six Fuchsias, first G. Meakin, Esq. For six Gold and Silver Tricolor and six Bronze Pelargoniums, first A. Hinckley, Esq. Six Ferns.—First G. Meakin, Esq. Six Selaginellas.—First G. Sackham, Esq. For a collection fruit, six dishes, distinct.—First Mr. Gilman, second Sir G. Wilmot. Grapes, two bunches, black.—First Mr. J. Udale, with large and well finished bunches of Hamburgs. Second Sir G. Wilmot. Grapes, two bunches, white.—First Mr. J. Udale, large and well coloured berries of Muscat of Alexandria. Second Sir G. Wilmot. Best flavoured Melon.—First Mr. Gilman. Dish of six Peaches.—First Sir G. Wilmot; second Mr. J. Udale. Dish of six Nectarines.—First Sir G. Wilmot, Horton; second Mr. J. Udale, highly coloured, but scarcely ripe. Collection.—Vegetables, six distinct kinds. First Mr. Gilman with splendid Tomatoes, Mushrooms, and Turnips, &c.

— "WE regret to learn," says *Nature*, "of the probable early recall of the Commissioner of the PHILIPPINE FOREST DEPARTMENT, and the practical suspension of the work in which he is engaged. The step is much to be regretted on many grounds, and it is to be hoped the Spanish Government will reconsider its decision in the matter. Until recently our knowledge of Philippine vegetation was extremely scanty, notwithstanding the collections made by the late Mr. Hugh Cuming. Even these it remained for Don Sebastian Vidal, Commissioner of Forests there, to place in accessible form, the materials for his recently published 'Phanerogamæ Cumingianæ Philippinarum' having been collected whilst engaged in working up his collections at Kew some two or three years ago. The extensive collections recently made by the Forest Department, a portion of which has been transmitted to Kew for determination,

has, we believe, yielded a considerable proportion of novelties, including a number of genera not hitherto known from the islands. Information respecting these additions will probably be forthcoming in due course, as already we have an outline of the flora at the hands of one of the Kew staff. The above, together with the fact that the large island of Mindanao, and several others, is practically unexplored, shows how much yet remains to be done in this direction. From an economic standpoint, and for the development of the natural resources of the islands, the work of the department is an important one. The demand for timber, owing to the exhaustion of the forests in various directions, is assuredly forcing the forestry question into the foreground. As an example of how little we know of the Philippine flora, we may mention the St. Ignatius's Bean, of which until recently nothing was known beyond the fact that it finds its way into the markets of this country as a source of the deadly poison strychnine, and was said to be sold in the market at Manila. Now, we believe, the plant has been discovered, and information respecting it will doubtless be shortly forthcoming. Such matters as these naturally engage the attention of the Forest Department, and it will be a matter for sincere regret if the work so well begun should come to a sudden termination just at a time when its importance is beginning to be realised."

FLOWERS FOR THE MILLION.

ONE of the pleasing characteristics of public taste is the increasing disposition of the inhabitants of towns especially, but not exclusively, to render the surroundings of their homes cheerful with flowers. This is not the outburst of mere fashion that predominates for a time, then subsides, but is, without doubt, the steady progressive growth of a fixed idea that flowers, like sunshine, are essential factors in contributing to domestic enjoyment and human happiness.

That the love of flowers is ever widening and deepening there is abundant evidence all around, and it is nowhere more apparent than in those establishments for producing them that the public demand has created. Roses have of late held the pride of place. They are seen in gardens large and small almost everywhere, and each year in greater numbers than before, but to comprehend anything like the full measure of interest that is centered in them, the great homes of manufacture must be visited. There the acres of ground occupied with millions of plants appeal with overwhelming force to the convictions, and the great fact is, and must be acknowledged, that flowers, as represented by this one flower, have come to be regarded as necessities of life.

Various other flowers bear testimony to this fact. If anyone should question, for instance, the established popularity of Orchids, let him visit the great trade emporiums, and when he sees house after house packed with plants, stages crowded, roofs laden, and floors covered with them, he will doubt no longer. They are provided because the demand for them is so great. It is the same with plants of more familiar type, and acre is added to acre yearly to satisfy the requirements for old and new favourites among hardy plants—Violets, Primroses, Daffodils, Anemones, &c., in the spring; Irises, Stocks, Pinks, Carnations, Lilliums, and "border" plants innumerable in the summer; Asters and Chrysanthemums in the autumn; Christmas Roses in the winter—more of each and of all have to be grown yearly to satisfy the wants of the flower-loving multitude. And if this is so in respect to those more or less costly kinds that are more or less difficult to preserve and cultivate, it would be strange indeed if the most easily raised and cheapest of all, the graceful and gay annuals, and other flowers readily raised from seed, were not proportionately appreciated. That these flowers are in the very van of popularity one example will suffice. It is probably the greatest example that can be found in this if not in any other country, and on that account is the more conclusive. Let us, then, take such of our readers who care to accompany us to a fertile corner in Essex, where at the present time is to be seen what may be fairly described as the most extensive and varied floral display in the dominions of the Queen.

The flower seed farms of Messrs. James Carter & Co. at Dedham and St. Osyth are widely and justly celebrated. They are not in the "haunts of tourists," and on that account it is the more incumbent that the few who visit them should endeavour to give some idea of their magnitude and appearance for the information of the many who are unable to inspect what is undoubtedly one of the most wonderful in its way, and certainly most beautiful sights in the kingdom. In one respect it seems a pity that these farms, or the chief of them, should be so inaccessible, but viewing the case from another—that is, a business standpoint, it is probably well that they are out of the way of the crowd, or visitors would prove seriously obstructive. Those Belgian horticulturists now visiting our shores on a gardening tour will doubtless see much to gratify them, but nothing that would probably astonish them more than the fields of flowers in question. But a long journey and a long day must be spent in accomplishing the object, and time, nowadays, is a precious item that has to be considered in the execution of a programme. If all the flowers in Belgium were crowded together they would not approach the number to be seen at St. Osyth, and the excellence of culture, the scrupulous care that is exercised in maintaining the purity of the stocks, with the admirable system of management that is apparent, are commensurate with the magnitude of the display. That is the simple statement of a sober fact, and there is no fear of its being questioned by any competent and im-

partial person who may be fortunate enough to examine the fields on a fine day in July before the flowers are faded.

The route to this land of flowers, starting from London, is by the Great Eastern Railway from Liverpool Street to Manningtree, a distance of about sixty miles. A well-appointed service of express trains, however, renders the journey pleasant rather than tedious, and travellers to the Continent *via* Harwich, with a day at their disposal, might break their journey homewards, see the flowers, and go on by the favourite night continental express. It is fourteen miles by road from Manningtree to St. Osyth, a delightful drive on a fine day, and it is no use going on any other, for apart from the discomfort to travellers of a fourteen-miles rain, annuals are flowers of the sun, and do not show to advantage in wet weather. It may be too late for our visitors to make further engagements, but on any future visit of a similar nature about midsummer, this, the head quarters of flower-seed-growing in England, might be kept in mind as a place of call, and it is certain the proprietors, if communicated with on the subject, would afford every facility for an inspection of their farms.

Dedham is only a short distance from Manningtree, probably less than two miles; and representative horticulturists who rest for a little time at Stour House, the beautiful and charmingly situated residence of Mr. Dunnett, the esteemed senior partner of the firm of (Carter) Dunnett and Beale, will not be disappointed. Mr. Dunnett is a fine type of an English gentleman, and gives a genuine and hospitable reception to his friends that lingers in the memory—a sort of a help-yourself kind of welcome, go where you like and see what you can. We saw what we could in an hour. The gardener showed with pride, and well he might, young and old trees of the Champion Black Currant. The crop of fruit was marvellous, hanging in huge black clusters from old and young wood just in the same way that Red Currants hang on well-managed bushes; and the fruit, on the young trees especially, was of such enormous size there is no wonder that the Fruit Committee of the R.H.S. with similar samples before them granted a first-class certificate. Then we inspected the Conifers that have been planted in almost a prodigal manner as an irregular and broad fringe round the grounds, affording at once excellent shelter and a beautiful background to the spacious lawn and its bright flower beds. The soil is strong and deep, and the trees, eighteen years planted, have grown marvellously. A Wellingtonia may be adduced as a type, now over 40 feet high, perfectly furnished, and of the deepest green. Abies lasiocarpa is rarely seen in such fine condition. A. Douglasii, A. Nordmanniana, and A. pinsapo are in splendid form, while the Cupressuses and Junipers have made equally satisfactory growth. In effective contrast are some wonderfully fine variegated Maples and handsome golden pyramids of Thuia aurea elegantissima 8 feet high, while here and there on the lawn beehive-shaped Golden Yews have a remarkable effect. This is a delightful and obviously cherished garden, kept in excellent order, and preparations are being made for the erection of glass structures.

But where are the flowers we went to see—the annuals? Well, there are not many at Dedham, perhaps not fifty acres. The first to arrest attention is a new variety of Chrysanthemum carinatum, one of the tricolor varieties, with a rosette-like centre and broad margin of ray florets of a pale peach colour and dark brown or claret at the base—a singular combination of colours, attractive and distinct from all others in the grounds. From this neutral tint the eye is irresistibly drawn to a fiery mass of orange scarlet, a selected variety of the scarlet Tom Thumb Tropæolum, often mis-called Nasturtium, so bright that workmen can only spend an hour or two at a time for weeding and "roguing," the intensity of the colour affecting their eyes. Large breadths of French Poppies are gorgeous, but less dazzling, for being in mixture the effect of the richly coloured varieties are subdued by the neutral tints. Next we find a quiet bed of a charming annual not very common in gardens—Calendula Pongei, or, as it was named in the bed, C. Pongei flore-pleno, a mistake that also appears in the catalogue of the firm. The flowers bear no resemblance to Marigolds, as the generic name would suggest, but are Cineraria-like with ivory white florets dark on the under side. They have a light and charming appearance, and would be suitable for the decoration of vases. In bold contrast is a great mass of Malope grandiflora, much the finest type of this annual we have seen, both as regards the size and depth of colour of the flowers. It must be a very select stock. Very fine indeed also is a choice selection of the Tom Thumb variety of Clarkia integrifolia, the great breadth of petals and the dark colour of the flowers rendering the bed highly effective. Mesembryanthemum tricolor was charming, its lovely flowers glistening in the sun; as a low carpet plant for sunny positions it is worthy of cultivation, and is decidedly attractive when well grown in pots; but "time" is called and we must haste to St. Osyth.

The road traverses a fertile and generally well farmed district, the grain crops being particularly full and good as a rule, though some are inferior; and the same remarks apply to the fields of roots—Mangolds. The fields are not bounded by neat hedges, as in the best agricultural counties of the north, but are picturesque as festooned with Brambles, Honeysuckles, and Roses. Roses festoon the cottages, too, by the way-side, and the little front gardens sparkle with flowers, while here and there are family clumps of white Lilies springing from a Potato patch. The drive though long is pleasant, and eventually we reach our destination, and we are among the annuals once again. The first to be examined is of a substantial kind—a new Pea named "Anticipation" when examined in the field. That will, no doubt, be its trade name, but when tasted a few hours afterwards "Realisation" appeared to be the more appropriate, for its great excellence was realised and unanimously ad-

mitted. It is a dwarf Pea, growing 2 feet high, but its large pods dragged it to the ground. They are of the colour of Telephone, which is presumably one of its parents, but square ended, and packed with large fat peas. It is a splendid dwarf Pea without a doubt, and it is anticipated will become a general favourite, that being possibly the secret of its name. Still another floral impediment, for we have to examine the hybrid Wheats. It is a remarkable fact that while so much has been accomplished in the improvement of garden crops by artificial fertilisation and the resultant new varieties, the most important crop of all—Wheat—has been practically left to itself. It is true that varietal forms have been established, but this is by selection. From the peculiar form of the organs of fructification cross-fertilisation of the important cereal is not effected in an artificial manner. It is safe to say that not one person in ten thousand knows when Wheat is "coming into flower." "What!" does some reader exclaim, "are we blind? Cannot we see the floral appendages protruding from the ears, little miniature tassels?" Yes, you may see them clearly enough; that, however, is no sign that the Wheat is "coming into flower," but, on the contrary, conclusive evidence that it has "gone out of flower," which is quite another thing. Artificial fertilisation must be effected before the plants have reached the stage that is popularly known as flowering. The operation is one of great nicety, but that it has been successfully accomplished is apparent, especially in the case of one variety named "Birdproof." One of the parents of this was the American Mammoth, having long "horns" like Barley; the other, Carter's Filmeasure, a fine smooth velvet chaff Wheat, this latter being the seed bearer. The influence of the long-bearded pollen parent can be both seen and felt, for sure enough the chaff of the resulting variety terminates in short bristles, and it is found that when birds alight on ears they fly off again in a moment, the sharp erect appendages "tickling their feet." The name "Birdproof" is thus not meaningless, and apart from the peculiar characteristic indicated the variety promises to be abundantly prolific. Another variety, the result of a cross between Carter's Royal Prize red, and the white Talavera, is remarkable as being a fortnight earlier than ordinary Wheats. This is quite evident, and is a fact of no small importance. The ripe seed or grain, too, is intermediate in colour between the two parents. A third variety established is from the square-headed red and Hunter's White, and unites the characters of both. Messrs. Carter have great reason to be proud of what they have accomplished, and though the main object of our visit was to see the flowers it was impossible to overlook these very interesting and highly important achievements in the intercrossing of Wheats.

To resume. It is no figure of speech to say that in this and adjoining fields there are flowers by and for the million. It is impossible to adequately describe the effect produced by great blocks of colour in one field alone. This must be quite half a mile long, and as the ground slopes gently from east to west and also from the sides to the centre the visitor taking his stand at the lower end has a grand panorama of flowers before him. As far as the eye can reach there is nothing but flowers—new, rare, or not extensively grown kinds in small patches; popular sorts covering from one to ten acres of ground, according to the demand for seed. Fancy ten acres of ground covered with Larkspurs in "lands" of separate colours, with intervening blocks of Saponarias, for preventing any accidental mixing of the Larkspur seed. It is a beautiful sight. Look again at the grand masses of Godetias. There are acres of them, each variety separate, and every plant "true." Lady Albemarle, Princess of Wales, Lady Satin Rose, The Bride, divided by breaks of other flowers, are simply magnificent. So are the similarly large masses of Chrysanthemum carinatum or tricolor varieties, than which few, if any, tall-growing annuals are more charmingly gay. Candytufts are grown on the same extensive scale—sheets of white, purple, and other colours, but, now fading; and so it is with other favourite annuals, seed of which is harvested by the sack, and the aggregate amount can only be represented in tons. Mignonette is in great force, so are the dwarf *Trapæolums*, and whoever may be fortunate enough to catch a bed of, say, five acres of King of Tom Thumbs in full beauty, a dense mass of dazzling crimson scarlet, will not soon forget the spectacle. The sight cannot be said to be "good for sore eyes," for the optic nerve must be strong to endure it for any length of time; and equally glittering are masses of its effective congener Golden King, while others of the family are scarcely less imposing. Then we see in the distance a great block of silvery white and "cannot make it out;" on a closer approach it proves to be White Rhodanthe, and not far distant is a corresponding mass of *R. Manglesi* and *R. maculata*. The seed appears to have been sown where the plants stand, in drills a foot apart. Their sturdiness is remarkable, and there must be wagonloads of flowers.

There are acres of *Antirrhinums* grown from and for seed. Some selected varieties are kept distinct in large squares of yellow, white, and crimson selfs. These are very fine, the yellow particularly striking. Then there are squares of flowers with white tubes, yellow tubes, and striped forms, also a marbled strain. The number astonishes, and nothing approaching an inferior variety can be seen.

Pansies surprise by their numbers, still more by their freshness. A bed of several acres in mixed varieties in every conceivable variety of colour in which these flowers are represented is as gay as in spring, and the plants are as healthy as it is customary to see them in Scotland. They were raised from seed sown under glass early in the season, and planted a foot or more asunder. They now cover the ground, and are, in turn, covered with myriads of flowers, while not a speck of mildew can be seen on the leaves; yet they are exposed to the full sun, in light rather than heavy soil, and in one of the driest districts in the kingdom. The secret of their condition rests in their being seedlings instead of having

been raised from cuttings. A bed of varieties striped and flaked like Carnations has a distinct and pretty effect; and not less effective are the improved Magpie Pansies, such as Countess of Kintore, Unique, and Lord Beaconsfield, that are worthy of extensive cultivation.

Among plants in smaller beds are some beautiful selected forms of *Phlox Drummondii*; a sparkling mass of *Linaria reticulata aurea* covered with diminutive crimson and gold Snapdragon-like flowers; *Silene compacta*, single and double, dense cushions of pink and white; Golden Cloth Dwarf *Tropæolum*, with small leaves the colour of Golden Feather; *Phacelia campanularia*, the brightest of blue with white stamens; it is of the character of a *Whitlavia*, but dwarfer, and with much larger flowers; one of the most attractive of annuals; *Anchusa capensis*, 18 inches high, its trusses of blue flowers covered with bees—a hint for apiarians; *Statice Suworowi*, by far the best of the border forms, and should be grown more freely in pots and beds; and so we might go on for half a dozen pages; but enough has been said to indicate, necessarily imperfectly, the magnitude of the display, and only one other bed can be noticed—a splendid mass of *Lychnis Hageana*, with trusses and flowers more than twice the size of *Phlox Drummondii* and in various shades of scarlet and yellow. The plants were raised from seed early last year, planted out, flowered slightly in the summer, were cut down in the autumn, and the bed is now like a brilliant bouquet. The soil in which they are established is rather sandy and the position sheltered from the north. This gay *Lychnis* is worthy of being tried more generally in gardens, but it may not succeed equally in all gardens, soils, and districts.

Nothing can exceed the care that is exercised to preserve the purity of the stocks of everything grown on this great flower farm. The labour must be enormous in keeping all so clean and the plants so true to character; in a word, everything is thoroughly well done, and both the firm and their experienced "grower" are to be congratulated on the excellence of their work.

A very simple yet important practical lesson in growing annuals is "writ large" at St. Osyth. The plants are afforded space for development. Take *Mignonette*, for instance. Each plant has most of a foot of space to grow in, and it produces many strong branches and fine spikes; if packed together, as in scores of private gardens, the plants are confined to single stems, terminating in small spikes, and when these fade all is over. It is the same with annuals generally; they are spoiled by overcrowding, and are said to be weedy and transient. That is not so much the fault of the plants as of the so-called cultivators, and a more rational system of management would produce infinitely better results.

THE VALUE OF FRUIT AS FOOD.

FEW people are aware of the value of fruit as an article of food. Many persons look on fruit as a luxury, whilst some shudder at the idea of it, and conjure up internal tortures at the name. Children, on the contrary, will eat fruit at any time, and undergo much discomfort to get it. It is elderly people, or those past their first youth, who cannot eat fruit and enjoy it. Cooked foods, highly seasoned meats, and alcoholic liquors have spoiled their taste, and in many instances a ripe Strawberry or Plum would inconvenience them sadly. But the person who values health, and who knows a little of the value of fruit, will make it a point to eat it daily, and even on occasions to make a meal almost entirely of it. Another cause why ripe and wholesome fruits are given a bad name is because they are eaten at the wrong end of a meal. After many courses of heavy foods and strong drinks, a few harmless Strawberries are indulged in, and then when these rich foods and stimulating drinks upset the stomach the blame is put on the innocent Strawberry. The real place of fruit is at the beginning of a feast, and not at the end. A better plan still is to make a meal of bread and ripe fruit. The best meals to make thus are breakfast, lunch, or early tea. The bread should be brown and dry, and the fruit ripe and raw. Dry brown bread cleans the tongue and brings out the flavour of the fruit. Butter on the bread would give its own flavour, or even the salt in the butter would destroy the pure taste of the fruit.

Again, the fruit should be raw if possible, as many delicious odours and delicate flavours are lost in the cooking. This weather, then, a meal of brown bread and ripe Strawberries, Cherries, Goosecherries, Raspberries, &c., should be looked upon as a wholesome corrective to high living. Those who want to be cool this warm weather, and who wish to retain their mental clearness all day, cannot do better than lunch off fruit and bread, leaving heavier and solid food until evening. Children may be given plenty of fruit, and as long as it is ripe no harm will result; on the contrary, it clears the complexion and skin, and acts as a laxative and a cooler. When children have a half-holiday, and they are in the way at home, you should buy them some fruit and send them to the nearest park, common, or open space, where they can romp and play, and, instead of sickly and often poisonous sweets, they may regale themselves with the fruit you gave them. A picnic party should never depart without a basket of fruit, and that fruit should start the meal. It is astonishing how exhilarating and enlivening a meal of fruit is, and instead of feeling dull after it, as you do after ordinary food, you feel stimulated and brightened up. It is not wise to eat raw fruit too late at night, as this does not digest so easily or lie so lightly as food we are constantly taking. Fruit is best in the morning. I have many patients who take an Orange, Apple, or other fresh fruit the first thing in the morning, the same as many people take their early cup of tea. This early fruit-eating is to be commended, it clears the tongue, stimulates gently, and with many it is the cause of regular laxation.

Many people—a good number of whom are doctors—are of opinion that uterine diarrhoea is due to fruit. This is an idea not borne out by facts. I

inquired into the subject, and found that in every case the diarrhoea was due to meat or fish, but never to fruit alone. I have experimented on myself, and got other friends to test the result of free fruit-eating on themselves, but in no case as yet have I got a report of diarrhoea from it. I lived one day last summer on Strawberries, managing to eat 7 lbs. during the day, but I had no diarrhoea. Other times I have lived on Plums and milk, and have eaten freely of Cherries and other fruits in their seasons, but never had looseness of the bowels in consequence. The true explanation of autumnal diarrhoea lies in the fact that in hot weather flesh putrefies very quickly, during putrefaction alkaloids called ptomaines are formed; these are emetic and purgative, and give rise to distressing symptoms. These alkaloids are found in meat at all times, but more especially during hot weather.

Fruit has the composition of a perfect food, containing all the substances required by the body. Here is the composition of Strawberries:—

Water.....	87	per cent.
Sugar.....	4	per cent.
Free Acid.....	1½	per cent.
Nitrogen	¾	per cent.
Insoluble matter (½ per cent. of which is ash)	7	per cent.

100

From this table we can see that fruit is a perfect food, as it contains everything needed, including water. We may also gather that it is a food for the indolent, and not for hard work. In a hot climate it would be all that is necessary; but in a temperate climate grain is needed as well. There is one thing worthy of notice, and that is the amount of free acid in fruit. This is anti-scorbutic, and also very useful for dissolving out any surplus of lime or other salts that may be in the system. Were fruits used daily by all there would be less gout, rheumatism, gall stones, stone in the bladder, and calcareous degeneration than there is now. In connection with the curative power of fruit, we must mention the "Grape cure." This is practised in France and Germany in the autumn, and is a cure for many diseases due to high feeding. The patient is given a pound of Grapes to eat the first day. This amount is added to until the person can eat 5 or 6 lbs. a day. The other food is gradually lessened, and the diet at last consists entirely of Grapes. It cures obesity and many other complaints, and starts the person off on a new lease of life. In this country we may partly carry out this cure, using Strawberries, Gooseberries, Cherries, and Plums in place of Grapes. Fruit is thus seen to be a necessity in a rational diet and of immense value in dietetic medicine.—T. R. ALLINSON, L.R.C.P., 29, Charlotte Street, Portland Place, W. (in the *Echo*).

CARNATIONS AND PICOTEEES AT CHELSEA.

THE annual Exhibition of these plants in Messrs. J. Veitch & Sons' nursery at Chelsea is an attraction of considerable importance, and for which many amateur cultivators look as eagerly as the florists do for the National Society's Show. The great objects of the display have been to prove that Carnations and their relatives are plants that can be grown by everyone with ordinary care, that possess invaluable floral qualities, and that they may be employed to beautify many town gardens at a time of year when few plants look satisfactory in such positions. These characteristics have been abundantly proved, first by the selection of the most effective and strongest habited varieties, and secondly by growing them well as border plants, and it is only fair to say that Messrs. Veitch and Sons have contributed in great measure to the increased popularity of the Carnation for this purpose.

Thirty-six beds, each 20 feet long by 4 feet wide, are devoted to the plants, and though the flower stems are necessarily secured to sticks these are made as light and inconspicuous as possible, consistently with sufficient strength to prevent the stems being broken by wind. At a convenient height above the beds is a skeleton frame supported on posts at the sides, and upon this is run a tiffany shading during hot days to assist in the preservation of the flowers. The objectionable "collars" are dispensed with, and the only artificial aid the flowers receive is placing a small indiarubber ring over the calyx to prevent it hursting and spoiling the bloom. Most of the varieties represented are those especially adapted for culture in borders, and though some may be defective in minute points compared with a florist's rigid standard, yet when the varieties are seen together the preference is at once given to the former for all substantial qualities. The choice varieties, of which the blooms appear so beautiful in a stand of twelve or six at a competitive show, are too frequently of weakly habit, and but few flowers are produced or allowed to remain on the plants. The others, on the contrary, bear scores of blooms that can be cut in bunches, and in addition the growth is usually much more vigorous, facilitating the increase of the variety. The show varieties are lovely, and should be grown in pots, well deserving the extra care required; but where profusion of flowers is of more importance than refinement of form or colouring the border varieties must take the most prominent place.

For effectiveness the Carnations are much superior to the Picotees, as the latter have a delicacy of appearance that, except in the deep-edged forms, scarcely fits them for borders. The self and fancy Carnations are very showy, especially the former, of which there is an excellent collection, and to these a few notes may be devoted. One of the first to attract attention is the excellent white W. P. Milner, a grand variety that cannot be too widely known. One of the beds mentioned above is devoted to this, the plants being remarkable for their even growth and the prolu-

sion of flowers. The height of the flower stems is about 2 feet, and the majority of the plants have a dozen fully expanded blooms, with two or three dozen buds. For beds and for cutting this is an admirable Carnation, and the blooms individually are very neatly formed. Another pretty white variety is Virgo, which is free and especially useful for hutonholes, as the blooms are rather smaller than the preceding and very symmetrical. Hodge's Bride is dwarf white variety, with larger flowers and petals than W. P. Milner. Miss Marianne North is a full white, flower large, and the plant of medium height; and Exquisite is an excellent free white variety in the way of W. P. Milner, which, however, we should prefer to all those named if only one sort is needed. Amongst the bright coloured varieties a new one named Beauty of Whitby is noteworthy, a brilliant scarlet very floriferous and charming. Hester Robinson, a dark red clove-scented variety, is also handsome. General Stewart, dark maroon, wonderfully free, something like the Trec Carnation Mrs. Keens. Brilliant is a remarkably glowing rosy-scarlet self that has been honoured with a certificate. Celia is a tall-growing clear rose self of very fine substance and broad clear petals. Royal Purple, rich warm purple self, very profuse and of good growth. Black Knight, intensely rich scarlet self. Magnum Bonum, a capital dwarf scarlet self, exceedingly free. John Burnett, large full bright rose, a bold flower and handsome variety. Florence is a good yellow self, as also are King of the Yellows, which is of a paler sulphury tint; and Belle Halliday, bright yellow; and Pride of Penshurst; the last named a useful variety for culture in pots.

The show varieties of Carnations and Picotees were enumerated fully last year, a selection being also given of the best for general culture in each class. These need not be repeated, but a few additional notes on the principal novelties may be contributed on another occasion.—VISITOR.

VIOLAS.

AT Messrs. Collins Brothers & Gabriel's nursery at New Hampton, Violas may be seen in great beauty just now, and that is saying a great deal, as the season has been a trying one, so hot and dry, and Violas are not looked upon with great favour as summer decorative plants in the south. The manager of the nursery, Mr. R. Jenkins, who is one of your frequent correspondents, got in a collection of the leading kinds last spring and planted them out in beds in the nursery. The soil at New Hampton suits Pansies and Violas very well, but being on gravel and the beds fully exposed to the sun, Mr. Jenkins thought it advisable to use a good quantity of cow manure in the beds, not actually planting in it, but where the roots could reach it, and he surfaced the beds with the decayed foliage of the Narcissus, which they cultivate extensively at Hampton. I am an old hand at Viola culture, and grow them by the thousand in the Midland districts, but I have rarely met with Violas in such perfection as at New Hampton. I was surprised to see them so in the south, and it clearly proves that if the borders and beds are well prepared on the plan adopted by Mr. Jenkins, that the Viola is an invaluable spring and early summer decorative plant about London, but where planted on the starvation principle it fails.

The principal varieties growing at Messrs. Collins and Gabriel's nursery are Countess of Hopetoun, a wonderfully fine white, large-sized flowers without a speck of black in the flower, and of close robust habit, and a good bloomer. Mrs. Gray, another good useful white, very free blooming, but has a tendency to flush in colour in hot weather, assuming a pleasing lilac tint. Notwithstanding this it is a fine variety, a great bloomer, good constitution, and as fragrant as any Violet. True Blue, one of my seedlings, is a capital hedder; and Queen of Lilacs, also one of my raising, is a grand bedder and a great improvement on the old favourite, Blue Bell. Queen of Spring and Golden Queen of Spring are two grand yellows; and Ardwell Gem is a first-class pale yellow or primrose coloured variety. Archie Grant is very fine violet-purple, a splendid bedder, and Queen of Purples is an improved Cliveden Purple, with a closer and better habit, a very fine purple. Countess of Kintore is a great favourite everywhere, pale lilac purple with conspicuous white blotches, a grand hedder; and Unique is a crimson-purple with a large greyish white blotch on each top petal. These are some of the best. Having for many years written about the Viola and endeavoured to make it popular. I was truly and most pleasantly surprised to see plants doing so well and forming brilliant masses of colour in a very exposed dry situation.

I have also met with another striking instance of the successful cultivation of the Viola under adverse circumstances. At Harefield Grove, near Rickmansworth, Mr. John Gough, the manager of these extensive gardens, has two rows of Dean's True Blue, each row 150 yards in length, planted out in the spring, but a spit of soil was thrown out and cow manure worked in the full length of each row. It has been a great success, and even now, in the midst of the hot July weather we have had, they are very beautiful.

In the Midland districts and further north Violas and Pansies do much better than in the south, although they have been proved to do well in the south if proper care is taken in planting them. In the public park at Wolverhampton very long lines of Holyrood and Lutea grandiflora are now masses of colour, and have been so since the spring, and villa gardens are to be met with in so many places where the Viola is grown extensively. I was also somewhat surprised to see our old friend Thomas Grainger Pansy growing like "a weed" in the park and masses of rich brownish red flowers.

With me at Walsall they are in fine character, but cutting down for stock is now going on, as the demand increases, and Violas ought to be in every garden for spring and early summer work. Unfortunately Violas

are too often ordered in May and June, Pansies also, and then they cannot get hold of the ground to withstand heat and drought. Autumn planting or planting in March is best, and if on dry soils and exposed situations mulch them with cocoa refuse, decayed manure, short grass, or anything available, to keep them as cool as possible at the roots. With this I send you a box of blooms, to show you what progress is being made in the Viola, and how we are succeeding in obtaining self-coloured varieties and getting them free from black blotches or centres.—WILLIAM DEAN, *Florist, Walsall*.

[Violas received are very beautiful; so are bunches sent by Messrs. Collins & Gabriel, and we think the excellent varieties named above should be more extensively cultivated in the manner described.]

IMPATIENS HAWKERI.

FEW new plants of recent introduction have so rapidly advanced in popular favour as *Impatiens Sultani*, and owing to the readiness with which it is increased it can now be found in hundreds of gardens. Another new *Impatiens* is now brought before the public, and as an ornamental plant it is likely to soon become even a greater favourite than *I. Sultani*. In the size and colour of the flowers it is far superior, and is one of the most handsome species yet introduced. At South Kensington on the 13th of July a plant was shown by the introducer, and a first-class certificate was awarded for it at once. Mr. W. Bull thus describes the plant, and has kindly supplied us with the woodcut (fig. 14), which shares the general character fairly well, but does not represent the flowers of their full size, as on the plant exhibited they were 2 inches in diameter.

"It is a native of the South Sea Islands, where it was discovered by Lieutenant Hawker. The sharply serrate leaves are elliptic acuminate. The flowers are very large, flatly expanded, and of the most brilliant rich deep carmine colour, this is relieved by a lustrous bluish tinge round the small white eye; the dorsal petal is roundish and the two lateral lobes oblong and bilobed, the spur is red and about 2 inches long. The flowers of this *Impatiens* are produced in the greatest profusion from March until October. The plant is of free growth and of good habit."

ROSE SHOWS.

MORETON-IN-THE-MARSH.

THIS does not sound a very lively place for a Rose Show, but it is one of those cases in which a misnomer gives an entirely false impression. There is no appearance of a marsh in or about the place nor ever was. It is, in fact, a corruption of Moreton-in-the-Marches, and the term applies to the fact that the old fosse road ran through the place. This I did not know until the time of my visit, for although in passing through it by rail one saw no sign of marsh, yet I supposed it must have had them at some time, and that like many places in the Fen Country its character had been changed. It is apparently much out of the way, yet in this quiet place has been got up a very extensive Rose Society, which drew exhibitors from all quarters, and at which the largest prize for the year had to be awarded—£10 for the best box of Roses in the Show. This has been mainly owing to the fact that a very successful and energetic Rose grower has come into the neighbourhood, the Rev. F. Burnside, who used so successfully to act as Secretary for the Farningham Rose Society, but who has migrated to Chipping Campden, two stations nearer to Worcester than Moreton, a very pretty Gloucestershire country town, with a long, straggling, and picturesque-looking street in which hardly two houses are alike, and all more or less of what is now called the Queen Anne style. A fine church of the perpendicular style in the somewhat debased manner of the Tudor times stands at one end, and what with trees standing in the street and an old disused market house, there are the elements of a thoroughly English country town, which happily even railways have not as yet got rid of. Mr. Burnside's house and garden stands in the middle of the street, and reminds me very much of my dear old friend Mr. Radclyffe's garden. It runs up as did rising ground at the back, although not so exposed, and often as I strolled through it the old "cracks" at Okeford Fitzpaine came to my mind. Mr. Burnside is only just settled here, and I have no doubt in a short time will grow Roses which will eclipse those he used to show at Farningham; indeed, the records of this year's exhibitions show that he has begun well. Not many miles from here live two energetic rosarians, Mr. Williams at Alderminster near Stratford-on-Avon, and Mr. Sladden at Badsey near Evesham, so that the Society established for East Gloucestershire is not wanting in elements of success.

The Exhibition at Moreton was held on a very picturesque ground belonging to the chief hotel in the town. A good tent was provided for the Roses, and a very excellent exhibition was the result. The cooler weather had materially helped the later blooms, and greater freshness and better colour were in consequence to be seen in the flowers exhibited.

In class 1, for thirty-six varieties, the Cranston Nursery and Seed Co. were first with a very fine stand, containing Reynolds Hole, John Stuart Mill, Constantin Tretiakoff, Marguerite de St. Amand, Alfred Colomb, Heinrich Schultheis, Marie Rady, Baronne de Rothschild, Ulrich Brunner, Maréchal Niel, Louis Van Houtte, La France, Mdlle. Annie Wood, Pride of Waltham, La Rosière, Mdlle. Marie Verdier, Marie Baumann, Merveille de Lyon, Horace Vernet, Prince Arthur, Alphonse Soupert, Fisher Holmes, Etoile de Lyon, E. Y. Teas, Jean Ducher, Pierre Notting, Lælia, Maurice Bernardin, Queen of Queens, General Jacqueminot, Princess Beatrice, Beauty of Waltham, Lady Sheffield, and Le Havre. Mr. B. R. Cant was second, and Messrs. Jefferies & Co. third.

In the class for eighteen Teas Mr. B. R. Cant was first with *Souvenir*

d'nn Ami, *Souvenir d'Elise*, Hon. Edith Gifford, Comtesse Nadaillac, Madame de Watteville, Madame Cusin, Catherine Mermet, Maréchal Niel, Moire, Madame Villermoz, President, Boule d'Or, Comte Panisse, Niphotos, M. dame Angele Jacquier, Innocente Pirola, Madame Lambard, and Belle Lyonnaise. Mr. George Prince second, and Mr. J. Mattock third.

In the class for twelve Roses of one variety (dark) Mr. B. R. Cant was first with Reynolds Hole. This was a splendid stand of flowers in fine condition and bright in colour. Messrs. Cranston & Co. second, and Mr. George Prince third.

In class 4, for twelve Roses (light), Mr. George Prince was first with a fine stand of *Merveille de Lyon*. Mr. G. Hopkins second, and Messrs. Jefferies & Co. third.

In the amateurs' class for twenty-four varieties Mr. T. W. Girdlestone was first with an excellent stand of Louis Van Houtte, Madame Charles Crapelet, E. Y. Teas, Ulrich Brunner, Star of Waltham, Madame Bravy, Duke of Teck, Niphotos, Dr. Sewell, Heinrich Schultheis, Reynolds Hole, Jean Ducher, Alfred Colomb, Maréchal Niel (a grand bloom, which had the unusual honour of gaining the National Rose Society's silver medal for the best Tea or Noisette in the amateurs' class, and of doing the same two days after at the National Rose Society's Provincial Show at Birmingham), Madame Paul Dumesnil, Comtesse de Nadaillac, Xavier Olibo, Merveille de Lyon, Prince Arthur, Countess of Rosebery, John Stuart Mill, Lady Sheffield, Horace Vernet, and Marie Baumann. Mr. W. J. Grant of Ledbury was second; and the Rev. J. H. Pemberton third. In class 6, for eighteen varieties, Mr. W. J. Grant was first; his varieties were Caroline Kuster, S. nateur Vaisse, Marie Rady, Horace Vernet, Beauty of Waltham, Marquise de St. Amand, Merveille de Lyon, Catherine Mermet, Lady Sheffield, Captain Christy, Madame Charles Crapelet, Madame Gabriel Luizet, and Senateur Vaisse. Mr. Girdlestone was second; and Dr. Budd, Bath, third. In class 7, for twelve varieties, Mr. Julius Sladdon of Badsey was first with good blooms of La France, Dupuy Jamain, Baronne de Rothschild, Marie Rady, Alha Rosea, Annie Wood, Merveille de Lyon, Henri Ledechaux, Madame Gabriel Luizet, Baron Hausmann, Marguerite de St. Amand, and Maréchal Niel. Mr. W. Narroay was second, and the Rev. F. S. Taylor third. In class 8, for nine varieties, Mr. W. Narroay was first with Horace Vernet, Madame Rollet, Xavier Olibo, Madame Marie Finger, John S. Mill, Baronne de Rothschild, Marie Baumann, Madame Gabriel Luizet, and Duke of Wellington. The Rev. F. R. Burnside was second; and Mr. J. Sladden third.

In class 9, for six varieties, Capt. H. Montague Spencer was first, and Mr. J. R. Reve second. In class 10, twelve Teas or Noisettes, Mr. W. Grant was first with Caroline Kuster, *Souvenir d'nn Ami*, *Souvenir de Thérèse Levet*, *Souvenir de Paul Neyron*, La Boule d'Or, Catherine Mermet, Marie Van Houtte, Comtesse de Nadaillac, Amazone, Maréchal Niel, Madame Lamhard, and Jean Ducher. The Rev. J. H. Pemberton was second, and Mr. T. W. Girdlestone third. In the class for six Teas the Rev. F. R. Burnside took first prize with Jean Ducher, La Boule d'Or (a flower that seems to open better in these western districts), Catherine Mermet, *Souvenir de Paul Neyron*, Comtesse de Nadaillac, and *Souvenir d'Elise*. In class 12, for six Roses of any sort, Mr. W. J. Grant was first with Marie Baumann; the Rev. J. H. Pemberton second; and Mr. W. Narroay third.

In the decorative classes there was not much competition. Mrs. Morse was first for hand bouquets, and Mrs. Morse second. For a centrepiece Miss M. A. Bousop was first with a very light and graceful stand, and Mrs. Morse second. When will ladies learn that huge masses of flowers is not what is required? The first prize in this class was a good example of what centrepieces ought to be—light and graceful.

The prize of £10 offered by A. B. Mitford, Esq., for the best box of Roses in the Show gave rise to a long examination and judgment, and was at last divided between the Cranston Co. and Mr. T. W. Girdlestone. The whole subject of the best box requires ventilating, and I have heard so many different opinions as to the canon of judging that it seems almost impossible to determine the best way in which it should be decided. There are reasons why I do not at all like the prize, and most certainly do not like such a prize as £10 to be given for it. It was ultimately decided to divide it. The National Rose Society's silver medal for the best Hybrid Perpetual in the amateurs' class was awarded to Mr. J. W. Grant for Horace Vernet, and one for the best Tea or Noisette to Mr. T. W. Girdlestone for Maréchal Niel.

The Revs. J. W. Clark and F. R. Burnside, the Hon. Secretaries, were indefatigable in their endeavours to make matters go smoothly, and all seemed thoroughly satisfied with the arrangements which had been made. The day was lovely, and the scene a bright pleasant one.—D., *Deal*.

WIRRAL.

I PREPARED and forwarded by post a full report of this Show, but it has apparently miscarried. Inquiries have been instituted, and I hope that it may turn up; if not, I must again write it. For the present let it suffice to say that the Show was eminently successful, that the leading honours in the nurserymen's classes fell to Messrs. F. Cant, F. & A. Dickson and Sons, Messrs. Paul & Son, Jefferies and Pince, and Burrell & Son; that amongst amateurs, Mr. Pemberton, Mr. T. B. Hall, the Rev. Lionel Garrett, Mr. Hall taking the gold medal; but, good as his flowers were, they were, I believe, greatly surpassed by those he exhibited at Manchester on the Saturday following. Mr. Findlay, who has sent too many flowers to be hastily carried away, says "they were simply superb," and thus, as I predicted last year, he has taken the position I was sure he would one day occupy—the head of the amateurs. The list of awards is appended, and I hope details may appear next week.

Section A, open to all nurserymen.—Seventy-two varieties (single blooms).—First, Mr. F. Cant; second, Messrs. Paul & Son, Cheshunt. Thirty-six varieties (three blooms each).—First, Mr. F. Cant; second, Messrs. Paul & Son. Thirty-six varieties (single blooms).—First, Messrs. F. & A. Dickson & Sons, Chester; second, Messrs. James Dickson & Sons, Chester; third, Mr. G. Prince, Oxford. Eighteen varieties (three blooms each).—First, Messrs. John Jefferies & Son, Cirencester; second, Mr. George Prince and Messrs. James Dickson & Son; third, Messrs. John Burrell & Co., Cambridge. Eighteen varieties (single blooms), Tea or Noisette.—First, Mr. George Prince; second, Mr. F. Cant; third, Messrs. John Jefferies and

Son. Twelve varieties (single blooms) new Roses.—First, Messrs. Paul and Son.

Section B, open to all amateurs.—Thirty-six varieties (single blooms).—First, Rev. J. H. Pemberton, Romford; second, Mr. T. B. Hall, Rock Ferry; third, Mr. W. J. Grant, Ledbury; fourth, Mr. C. J. Day, Rowton. Twenty-four varieties (single blooms).—First, Rev. L. Garnett, Christleton, near Chester. Twelve varieties (three blooms each).—First, Rev. J. H. Pemberton; second, Mr. T. B. Hall; third, Mr. W. J. Grant. Twelve varieties (single blooms) Tea or Noisette.—First, Rev. Dr. King, Madingley, Cambridge; second, Mr. C. J. Day; third, Rev. J. H. Pemberton. Twelve single blooms of any one dark Rose.—First, Mr. T. B. Hall; second, Mr. W. J. Grant. Twelve single blooms of any one light Rose.—First, Mr. T. B. Hall; second, Rev. L. Garnett; third, Mr. W. J. Grant. Six single blooms (new Roses).—First, Mr. T. B. Hall. Three baskets of Roses.—First, Miss Hall, Rock Ferry.

Section C, gold medal, open to all amateurs in Cheshire and Lancashire,

The arrangements of the Committee were perfect, and gave every satisfaction.—D., Deal.

CHOICE PERENNIALS.

(Continued from page 78.)

MISCELLANEOUS.

OF other white flowers the Candytufts or Iberises are still very good. These are all dwarf-growing and of shrubby habit, bearing innumerable pure white flowers on short sturdy stems, and arranged in compact globular umbels. These are all very pleasing, either for the rockery, the border, or for edgings, the best being *I. corifolia*, *I. sempervirens*, *I. gibraltarica*, and *I. Pruti*.

The *Æthionemas*, a genus closely allied, but for the most part having flowers of a light pink, are best suited for warm sunny positions of rock.



Fig. 14.—IMPATIENS HAWKERI.

twenty-four varieties (single blooms).—First, Mr. T. B. Hall; second, Mr. C. J. Day; third, Rev. J. Garnett.

Section D, silver medal, open only to amateurs within the Hundred of Wirral and ten miles round the Liverpool Exchange.—Eighteen varieties (single blooms): First, Mr. J. G. Churton, Weston. Second, Mr. W. E. Hall, Higher Bebington. Third, Mr. T. Raffles, Bulley, Liscard.

Section E, bronze medal.—Twelve varieties (single blooms): First, Mr. T. W. Crowther, Oxtun. Second, Mr. T. Raynes, Rock Ferry. Third, Mr. Jos. Rimmer, Farmby. Fourth, Rev. Canon Fielden, Bebington.

Section F.—Six varieties (single blooms): First, Mr. Joseph Armstrong, Bebington. Second, Mr. C. K. Hall, Oxtun.

Section G, silver medal.—Twelve varieties (single blooms), Tea or Noisette: First, Mr. E. Claxton, Allerton. Second, Mr. T. B. Hall, Rock Ferry. Six varieties (single blooms) Tea or Noisette: First, Mr. W. E. Hall. Second, Rev. Canon Fielden.

Section H.—Best box of six Tea and six Hybrid Perpetual Rose blooms, distinct varieties.—First, Mr. T. B. Hall. Twelve varieties, single blooms.—First, Mr. Desborough Walford, Rock Ferry. Second, Mr. W. E. Hall. Third, Rev. Canon Fielden.

Prize of £1 for best Hybrid Perpetual Rose in sections C, D, E, F, and A awarded to Mr. C. J. Day.

Prize of £1 for best Tea or Noisette Rose in sections G and U, awarded to Mr. E. Croyde Claxton.

Special prize for stove and greenhouse plants awarded to Mr. S. Johnson, Oxtun.

Special prize for seven boxes of Roses, not for competition, awarded to Mr. S. Johnson, Oxtun.

But one of the most lovely sights in the hardy plant garden now is *Geum minimum*. In colour it is a light orange red, so pleasing, and yet so widely distinct from all else. It flowers in the greatest profusion; in fact, equally as freely in this respect as the well-known double scarlet *Geum*, *G. coccineum*, fl.-pl. There is the yellow flowered species, which comes early in bloom, of dwarfer habit and larger golden blossoms, but this is on the wane. This last remark applies to the *Dodecatheons*, which are lovely plants for peat and loam in moist partially shaded places. *Dicentra spectabilis*, which was terribly cut by the late spring frosts, is now flowering profusely. Two orange-coloured flowers are just beginning to expand; the one is *Erigeron aurantiacum*, the other *Hieracium aurantiacum*. The first is one of the most charming of dwarf-habited early summer flowering plants, remarkably free and robust, but only 9 inches high. Its flower stems issue from compact tufts of glossy green leaves, the individual flower heads being nearly as large as a crown piece. It is quite hardy, is propagated freely by division and seeds, and is in all respects a first-class plant. It is suited either for pot culture, the rockery, or the border, and should always be included in an exhibition group at this season of the year. The *Hieracium* also has a telling colour, height 2 feet, with a spreading rootstock, and while it is not a weedy plant, it cannot be regarded in the light of the first-named, either as so desirable or showy. The Alpine *Phloxes*, *P. setacea* and its forms, with *P. frondosa*, *P. amœna*, *P. Nelsoni*, and others, always so lovely in the spring time, are now past their best, the sheets of various coloured flowers which are produced upon them having no equal among spring plants.

Very effective now and for some time are the rosy red flowers of *Lychnis diurna* fl.-pl., which are so freely produced on stems barely 2 feet high from amidst a dense cushion-like tuft of leaves. The colour is effective, and the plant a most desirable one. Another of this genus with flowers of lighter colour is *L. viscaria splendens plena*, a very neat compact and effective variety, in height about 15 inches. This is just commencing to flower, its topmost flower being first to expand.

The showiest among the Geraniums or Cranesbills is *G. armenum*, with large handsome deeply lobed leaves, symmetrical in form, 2 feet high, and flowers of a crimson hue interspersed with purple. This is a very effective species, which should be in all collections of choice plants. Columbines, too, are coming in fast, and very elegant plants they are, and of which one can have abundance for two or three months to come. This fact will give the reader some idea of their free-flowering properties.

Among the Hemerocallis, a genus noted for its showy flowers in summer time, *H. flava* is the best at present. It is earlier than the Day Lilies proper, for the flowers of this species last fully two days, and sometimes longer, and the profusion with which they are produced keeps up a good display of its rich yellow trumpet-shaped and highly fragrant flowers. It is a fine conservatory plant of graceful habit, about 2 feet high; it also forces well. In the border in deep loamy soil it grows freely, and produces its golden bells for several weeks.

Speaking of yellow flowers reminds us of our native Marsh Marigolds, bright and beautiful and of a rich golden hue so lovely in their native pastures, mingling with grassy blades which seem to show to even greater advantage than when only accompanied by its own foliage. In cultivation we have double varieties firstly of the type, and then the major and minor forms, none, however, more brilliant if more durable than the wild species. In *Lilium* a yellow variety may be found in *L. pyrenaicum flavum*, which possesses an overpowering fragrance which hardly fits it for much service as a cut flower; while as a plant of sterling merit, very hardy, sturdy, and of elegant habit, and only 18 inches high, it is one of the very best. *L. pyrenaicum rubrum* comes a little later, and has bright orange-red flowers, and grows 3 feet high. These both succeed well in any ordinary loamy soil.

I will only briefly, in passing, note the lovely flowers that we find in the great army of German Irises, in which may be found every conceivable shade of blue, lavender, and mauve, with pure white, and others of a creamy shade, others still of purple and violet hues, and many more in chrome and yellow. All lovely, and in the great majority of cases exceedingly handsome. This is rendered all the more conspicuous by the extremely elegant reticulations and marblings which may be found more or less in all the varieties. These Irises are the grandest plants in the flower garden now, and as the *Cattleyas* and *Lælias* are justly regarded the Queens of the Orchids, so also these Irises in the hardy plant garden surpass all other flowers; they are always admired.

In that choice alpine *Onosma taurica*, we have both beauty and grace combined. It grows a foot high, and from a compact tuft of lanceolate, slightly spatulate, and rough hairy leaves, the flower stems spring. These are also hairy, and upon them the clear yellow fragrant flowers are arranged in cymes, and are produced with great freedom. It is a grand ornament for the rockwork or border, especially when well established. It delights in a deep but not too rich soil, as in this it grows too freely and suddenly collapses at times. A deep fissure of rock where its tufts can overhang some projecting ledge will suit it well, or a thoroughly drained position in the border. It is worth any care, for no alpine repays good cultivation better than this. Another fine alpine just now is *Anemone alpina*, difficult to establish sometimes; but when in good condition it is a picture. It forms tufts of leaves from 18 inches to 2 feet high, and has beautiful white flowers which are suffused with pale blue externally. Plant it in a deep rich soil and let it alone, and the same remark applies to the sulphur-coloured variety.

Among *Campanulas*, *C. glomerata dahurica*, with its large clustered heads of rich purple flowers, is most effective, free, and of good habit. The varieties of the perennial Cornflower are also very showy and distinct, and are now seen in the red, white, and blue, each very effective and useful as cut flowers. Beyond those I have named we have the gorgeous flowers of *Papaver orientale* and its varieties, with dazzling scarlet, crimson, and orange flowers; single and double *Pyrethrums*, so extremely useful either in the border or as cut flowers. *Potentillas* are also very handsome and useful.—J. H. E.

HORTICULTURAL SHOWS.

NEWPORT.

THIS was held in the King's Hill Field, Newport, Mon., on July 20th. The Show was the best the Society ever held, the exhibits being very numerous and uncommonly good in quality throughout. Messrs. Lewis and Dixon of the London and Provincial Bank again acted as Hon. Secretaries, and they are to be congratulated on bringing the Show up to such a high standard. The Committee include several keen amateurs and one or two gentlemen's gardeners, who also take a deep interest in the Show, and altogether it could not possibly be in better hands. The chief plant tent was 190 feet in length and 40 feet in width. The principal plants were most effectively staged in the centre and smaller ones round the edge, the whole having a most pleasing appearance. In the class for eight stove and greenhouse plants in flower Mr. Cypher of Cheltenham came first with healthy plants of moderate size, finely bloomed, the best being *Erica Shannoni*, *E. Irbyana*, *E. tricolor major*, *Ixora Pilgrimi*, *Allamanda grandiflora*, and *A. Hendersoni*. Mr. J. F. Mould was second, having a remarkably showy and well-bloomed *Kalosanthes coccinea*, *Bougainvillea glabra*, and *Statice*

profusa. Mr. W. Jones was third. For six ornamental foliaged plants Mr. Cypher was first with Palms, Crotons, &c., and Mr. E. J. Grice was a very close second, his plants being exceedingly clean and healthy. Mr. Mould came third, and we are glad to note a decided improvement in these important plant classes by local exhibitors. In former days Mr. Cypher was almost always beaten here by Mr. Wattie, a first-rate local plantsman, and some of the others appear to have the same object in view. *Achimenes* were shown in fine condition by Mr. J. W. Jones, Mr. T. Watson, and Mr. C. T. Wallis. *Fuchsias* were mostly large in size, but not very well bloomed, the prizes going to Mr. W. E. Heard, Mr. Grice, and Mr. H. J. Davis. Exotic Ferns were very well developed and beautiful and fresh, especially those from Mr. E. J. Grice and Mr. T. Watson.

Selaginellas are always a fine feature of the Newport Show, the specimens being shown in pans about a yard across, fresh and well coloured, and the best came from Mr. C. T. Wallis, Mr. H. J. Davies, and Mr. W. Graham. Zonal *Pelargoniums* were wonderfully attractive, being finely trained and profusely bloomed, and Mrs. Wallis had no difficulty in gaining the first prize, as her plants were extra good, and were followed by those from Mr. Graham and Mr. G. J. Jones. In exotic Heaths Mr. Cypher came first and Mr. Mould second with medium-sized plants, well bloomed and fresh, one or two plants not gaining prizes being past their best. A class of six *Caladiums* terminated the open section, and here some medium-sized plants, very robust and highly coloured, from Mr. J. W. Jones, were placed first; and some much larger ones, drawn up and a poor colour, from Mr. Heard second; third Mr. Watson.

In the amateur plant classes many fine specimens were shown, and the first prize for four distinct stove and greenhouse went to Mr. C. T. Wallis, second to Mr. J. W. Jones, and third Mr. G. J. Jones, the competition being keen and close. Orchids were not numerous but highly attractive, Mr. F. Fowler of Pontypool winning first prize for six specimens with *Aerides Lobbi*, *Oncidium macranthum*, *Cypripedium barbatum*, *C. Parishii*, *Cattleya Gaskelliana*, and *C. gigas Sanderiana*, all medium-sized plants, profusely flowered. Mr. T. Watson was second with a meritorious collection. *Coleus* were very numerous, the first prize half-dozen from Mr. C. T. Wallis being dwarf, spreading, and finely coloured. Mr. Fowler was first in exotic Ferns, and in *Gloxinias* Mr. H. J. Davies, Mr. A. J. Woodcock, and Mr. W. H. Lewis were the prizewinners, there being little to choose between the three lots, all having good varieties. *Liliums* were scarce, *Petunias* good, and Tuberous *Begonias* very fine, especially the prize groups from Mr. W. Powell, Mr. T. Watson, and Mr. W. H. Lewis.

The cut-flower section began with Roses, twenty-four blooms distinct, Messrs. Griffiths & Sons, Hereford, being first with massive blooms, finely coloured and in prime condition. Mr. J. Pulley was second, and Mr. William Treseder, Cardiff, third, all showing well, but some of the blooms in the latter two were past their best. Tea Roses were poor, *Carnations* and *Picotees* few, but the bunches of cut flowers were grand and comprised many excellent boxes, in which Orchids were very conspicuous. This was particularly the case in the first prize box from Mr. F. Fowler and the second from Mr. Watson. Dahlias were not well represented, but some good *Verbenas* were shown from Mr. W. Graham and Mr. H. J. Davis. Bouquets were numerous, the best coming from Mrs. W. Jones and "Loadstone," the lady florist from Llanelli, Carmarthenshire. This lady also exhibited a first-rate collection of cut annuals and herbaceous plants, which were greatly admired. Wild flowers were admirably shown by Miss Lloyd and Miss C. Evans. The last of the decorative classes was a collection of plants, open to amateurs having no regular gardener, and here Mr. A. J. Woodcock and Mr. H. Dixon exhibited healthy well-bloomed lots which reflected much credit on the growers.

Fruit was extensively shown and very good in quality. Mr. Hawkins, gardener to Col. Turberville, Ewenny Priory, Bridgend was first in the leading collection, his Madresfield Court and Muscat of Alexandria Grapes being very good, Melon fine, Peaches grand, Brockworth Park Pear extremely fine. Mr. J. Pulley was second, and Mr. Moon, Coldriglan, Cardiff, third. Mr. H. Morris, gardener to A. P. Vivian, Esq., Taihach, was first in Pine Apples, showing a fine brace of Queens. White Grapes were well shown by Mr. Hawkins and Mr. J. Morrell, and the best black came from Mr. J. Williams and Mr. Morrell. Mr. Pulley and Mr. Hawkins divided the Peach prizes, and the Nectarines were fine specimens from Mr. Pulley and Mr. Graham. Melons were numerous but poor in quality, Mr. Case, Cardiff, being first in a class remarkable for poor flavour. Gooseberries were numerous and finely ripened, indeed the most forward we have seen this season.

Vegetables were better than we ever saw them at Newport. Mr. Morris was first for nine dishes, with good Celery, Cauliflower, Peas, Beans, Tomatoes, Potatoes, Globe Artichokes, Cucumbers, and Carrots. Mr. Moor was a close second, and Mr. T. Gibson third. Tomatoes were very fine from Mr. Pulley and Mr. J. Jones; Cucumbers were numerous, but mostly too old, with the exception of the first-prize brace from Mrs. Wallis, which were good specimens of Telegraph. Potatoes were very good, the best coming from Mr. Morris. Peas were extensively shown, Telegraph being the best and leading variety. The cottagers had a tent to themselves, and filled it admirably, their fruit, cut flowers, pot plants, and vegetables being remarkably good and numerous. In vegetables especially many of the exhibits here would have made their mark in the open classes. Messrs. James Carter & Co., Messrs. Sutton & Sons, Messrs. Francis & Arthur Dickson, Messrs. John Laing & Co., Messrs. James Dickson & Sons, Messrs. J. C. Wheeler & Son, Messrs. Richard Smith & Co., Messrs. Daniel Bros., Messrs. Garraway & Co., Mr. Dick, and Mr. Crossling gave special prizes for various exhibits, and in most instances the competition for these was very keen and highly creditable.

LUTON.—JULY 21ST.

THIS Show, which was held in conjunction with the Beds Agricultural Exhibition on Wednesday last, well maintained the reputation secured by Luton on former occasions for doing things horticultural in first-rate style. The Beds Agricultural Society holds an exhibition at Luton triennially, and on the last occasion, in 1883, we had to record in connection with it one of the finest displays of plants ever brought together, no less than seven competitors having staged collections in the chief class. At the Show on Wednesday, in response to a very liberal schedule, which offered upwards of £140 in twelve open classes only for plants, fruits, and Roses, the plants were

again very fine, although the number of competitors were less than at the former show. Fruit also was remarkably good, as might be expected when the names of Messrs. Roberts, Goodacre, Mills, Mundy, Elphinstone and Allis were amongst the competitors. Roses, too, were equally well represented. All the classes were open and the prizes offered extremely liberal; but originally, at a show held in connection with that of an agricultural society, no classes were provided for vegetables, and local growers were in every way ignored except as competitors in the open classes. As, however, there is a local horticultural society at Luton, which holds an annual exhibition, as already announced for next month, the omission is probably thus accounted for. The labours of the Committee and the zeal of the exhibitors was somewhat marred by an unfortunate breakdown of the large marquee under which the Show was arranged just at the time of judging. The site selected was on the side of one of the chalk hills so characteristic of the Luton district, and in a gully open to the S.W. wind, and as the iron stays of the tent were on that side insecurely fixed into the hard chalk, the windward side of the canvas was by a sudden gust upraised and blown into the tent, breaking down the side stage and sweeping in its course stage, Roses, committeemen and all, doing material damage to some of Mr. Cypher's finest plants in the centre, and upsetting some of the best fruit, including a magnificent pair of bunches of Madresfield Court Grape belonging to Mr. Roberts, which were so far annihilated as to be put beyond the recognition of the Judges. The marquee was promptly secured, eventually raised into position, and the damage as far as possible rectified.

The fine display of Roses, however, of Messrs. W. Paul & Son of Waltham Cross (not in competition), and the stands of Messrs. Burrell, Rumsey, and others, were practically demolished. Fortunately the Judges had just completed their labours in this department before the occurrence. For forty-eight Roses, distinct, Mr. F. Cant of Colchester took the lead with one of the best stands he has exhibited this season. His blooms were very fresh and even-sized, and fortunately his stand was but slightly injured by the downfall of canvas. His finest flowers were Marie Baumann, Horace Vernet, Charles Darwin, Rosieriste Jacobs, A. K. Williams, Gabriel Luizet, Dupuy Jamain, Niphotos, E. Y. Teas, Madame Alphonse Lavallée (as shown of the Dupuy Jamain type), Duke of Connaught, Catherine Mermet, Magna Charta, Ulrich Brunnner, Madame Angèle Jacquier (large and fine, Star of Waltham, Jean Souper (very good), Marie Rady, and François Michelin. Messrs. J. Burrell & Co., of Cambridge, were placed second, having good flowers of A. K. Williams, Enlie Hausberg, Benoit Comte, Duc de Wellington, Annie Laxton, Duke of Teck, and Hippolyte Jamain in the stand. Mr. W. Rumsey of Waltham Cross showed a good third; and the Rev. W. H. Jackson, of Stagsden Vicarage, Bedford, was awarded an extra for a highly meritorious collection. For the forty-eight trusses of Roses the same exhibitors competed, showing mostly the same varieties, and, with the exception of the Rev. W. H. Jackson, making no attempt to construe the word "truss" in its natural sense. The awards were made in the same order as in the previous class. Messrs. W. Paul and Son of Waltham Cross exhibited a large and very beautiful collection in boxes and baskets, showing to great advantage masses of the following varieties—viz., Souvenir d'Elise, Madame de Watteville, Marie Van Houtte, Xavier Olibo, Perle des Jardins, Duchess of Bedford, Catherine Mermet, A. K. Williams, Baroness Rothschild, and Merveille de Lyon; also their magnificent new dark velvety seedling, "Grand Mogul," which recently received a first-class certificate from the Royal Horticultural Society; and Silver Queen, an improvement on Caroline de Sansal. For twelve and six exotic Orchids, Mr. J. Cypher, Exotic Nurseries, Cheltenham, was the only exhibitor, receiving first in each class, having good examples of Cattleyas Gaskelliana, superba, splendens, Leopoldi, and Sanderiana, Epidendrum vitellinum, Saccobolium Blumei, Oncidium crispum and pretextum, and Cypripedium barbatum. For twelve stove and greenhouse plants, six flowering, Mr. Cypher was also first, having grand specimens of Latania borbonica, Ixora Williamsi, Allamanda grandiflora, Kentias formosa and australis, Crotons Victoria and longifolium, but several fine plants in this collection were much injured. Mr. J. F. Mould of Pewsey, Wilts, was second with very beautiful, but rather smaller specimens, including Frederick de Boise (very finely flowered), Gleichenia Mendelli, Allamanda nobilis, Cycas revoluta, and Cocos Weddelliana, in fine health and vigour. An extra prize was also awarded in this class to Mr. Baillie, gardener to Madame de Falbe, Luton Hoo, for a good collection.

For six stove and greenhouse plants, three in flower, Mr. Cypher was again first, Mr. Mould second, and Mr. G. Underwood, gardener to C. Fenwick, Esq., Harpenden, third. The latter collection was also awarded extra recognition for good cultivation. The class for six Fuchsias was only moderately represented, and the second prize was awarded to John Cumberland, Esq., Luton.

For six stove and greenhouse Ferns, Mr. Cypher was first with worthy specimens, some of which were damaged by the breakdown. For second place W. Tindall Lucas, Esq., Foxholes, Hitchin, staged a remarkably beautiful collection, consisting of Adiantum cardiochlamum, concinnum, c. latum, farleyense, cuneatum, and trapeziforme. Mr. J. F. Mould was third. For the collection of fruit, eight sorts, Pines excluded, Mr. Roberts, gardener to Messrs. Rothschild, Gunnersbury, was first with two splendid bunches of Madresfield Court black Grape, also Muscat of Alexandria, good; Golden Perfection Melon, Violette Hâtive Peaches, Lord Napier Nectarines, very fine; Brown Turkey Fig, well ripened and large; British Queen Strawberries, and Bigarreau Napoleon Cherries. He was closely followed for second place by Mr. J. Edmonds, gardener to the Duke of St. Albans, Bestwood, Notts, who had good Hamburg and Muscat of Alexandria Grapes, and splendid Bellegarde Peaches in his collection. Mr. J. Goodacre, gardener to the Earl of Harrington, Elvaston Castle, was a good third. Mr. Elphinstone, gardener to E. M. Mundy, Esq., Shipley Hall, Derby, and Mr. Allis, gardener to Major Shuttleworth, Old Warden, Biggleswade, also staged highly meritorious collections in this class.

For two bunches of black Grapes Mr. Elphinstone was first with very fine Hamburgs (Mr. Roberts' superb Madresfield Court having been destroyed before judging); Mr. Goodacre was second with Muscat of Hamburg, and Mr. G. T. Miles, gardener to Lord Carrington, Wycombe Abbey, third with Gros Maroc. For two bunches of white Grapes, Mr. H. Folkes, gardener to T. F. Halsey, Esq., Gaddesden Place, Herts, was first with Foster's Seedling, a variety shown well by more than one exhibitor. Mr. Roberts

was second with Muscat of Alexandria, and Mr. Goodacre third with Foster's.

For two Pines, Mr. Mills staged fine Queens in prime condition, and was placed first, Mr. Roberts was second, and Mr. Goodacre third.

DURHAM, NORTHUMBERLAND, AND NEWCASTLE HORTICULTURAL AND BOTANICAL SOCIETY.

THE summer Exhibition of the above Society was opened on the 21st inst. in the Leazes Park, Newcastle, and continued for three days. The Park is well adapted for holding a horticultural exhibition—it is easy of access, commands an extensive view of the vale of the Tyne, and extends far over some of the best scenery in Durham. The exhibition as a whole was a splendid one, considerably exceeding in merit any of the former exhibitions of the Society. The staging arrangements were, as usual, of a very satisfactory nature. The Show was held in a series of marquees arranged parallel with each other with their sides removed, hence forming a large open space. The effect was very imposing and every part easily accessible by visitors.

PLANTS.—The Society offered for eight plants in bloom £26, divided into £12, £8, £4, and £2 prizes respectively. Mr. E. H. Letts, gardener to Earl Zetland, Aske Hall, Richmond, was first with well-finished examples of *Phenocoma prolifera* Barnesii, *Ericas* *Parmenteriana* rosea, *Wilsoni*, and *obobata*, *Pimelea decussata*, *Anthurium Schertzerianum*, and *Allamanda nobilis*, both stove and greenhouse varieties, maintaining the fame of Mr. Letts as a first-class exhibitor. Mr. H. Johnson, gardener to J. B. Hodgkin, Esq., Darlington, was second. This exhibitor had two good *Ericas*, *Ixora Regina*, *I. Dayana*, and *Allamanda nobilis* in fine form. Mr. J. Noble, gardener to Theo. Fry, Esq., Woodside, Darlington, was third, his best plants being a good *Stephanotis* with large flowers, and *Dracophyllum gracile*. For eight foliage plants, Mr. E. H. Letts was also first; *Crotons* *Johannis*, *majesticus*, and *Victoriae*, were well finished and highly coloured, and with the *Palms* and *Cycads*, *Kentia Fosteriana*, *Cycas revoluta*, *Stevensonsonia grandifolia*, and *Encephalartos retusa*, formed a noble and majestic group of tropical plants, for which the Knightian medal of the Royal Horticultural Society was granted. Mr. J. Hammond, gardener to Sir W. Lawson, Bart., Brayton Hall, followed, *Crotons* *Victoriae* and *interruptus*, *Kentia Fosteriana*, and *Dasy-lirion glaucum* being excellent. Mr. J. Noble was third in this class.

For a group of miscellaneous plants (20 feet by 10 feet) Mr. J. McIntyre, gardener to Mrs. J. Pease, Woodside Hall, Darlington, was first. The arrangement was faultless, and somewhat departed from the usual style by not having a special groundwork. It was the great centre of attraction, and elicited nothing but admiration from friends and critics, the richness of Mr. McIntyre's arrangement consisting in half-specimen *Crotons* perfectly coloured, tastefully associated with *Ferns*, *Palms*, *Lycopods*, *Eulalias*, and while *Lilies* margined with *Panicum variegatum* and *Brighton Blue Lobelia*. There was no crowding, no vacancies, nor bad or weak plants, but the whole formed a most charming arrangement. Mr. J. Hammond was second also with a capital group, creditable to any exhibitor, but we think with rather too many red *Celosias*. Messrs. Clark Bros., Carlisle, were third with a similar arrangement to that the firm won honours at Edinburgh with.

For six exotic Ferns Mr. H. Johnson secured the first position with a handsome *Davallia*, *Dicksonia antarctica*, *Gleichenias* *Mendeli* and *rupestris*, *Microlepia hirta cristata*, and *Davallia Mooreana*, Messrs. J. Noble and J. McIntyre following in the order named. For three *Crotons* Mr. Hammond scored first with finely coloured specimens of *Evansianus*, *Chelsoni*, and *Hammondi*, Mr. Letts following with *angustifolius*, *Morti*, and *Johannis*, also fine. In the class for three *Dracaenas* Mr. J. Noble was first, *Gladstoni* being splendidly finished and *Shepherdii* good. For four *Ericas* Mr. H. Johnson was first. Bedding plants were good, Mr. J. Richardson being first with a fine collection. The same exhibitor was also first with rock and alpine plants, as well as for *Sempervivums* and *Sedums*, all of which prizes he well deserved.

CUT FLOWERS AND TABLE DECORATIONS.—Roses were good for the north, the exhibitors being confined exclusively to the district, southern growers not appearing. For forty-eight Roses Messrs. Harkness Brothers, Bedale, were first with a splendid collection. These young men were tailors in a rural district in Allendale, Northumberland, and commenced by investing all their pocket money in *Gladioli*, and by much perseverance have "got on," and have now 12 acres of ground, suitable for the growth of *Dahlias*, *Roses*, and their favourite florist's flowers. This is encouraging and worthy of record. In their stand were *Etienne Levet*, *Merveille de Lyon*, *François Michelin*, *E. Y. Teas*, *Madame Cusin*, *Prince Arthur*, *La France*, *Innocente Pirola*, *Jean Ducher*, *Princess Beatrice*, *Madame Gabriel Luizet*, all good flowers, large and fine in form. Messrs. Mack & Son, Catterick, were second with good blooms of *Dupuy Jamain*, *Duchess of Bedford*, *Souvenir d'un Ami*, *Etienne Levet*, *Xavier Olibo*; Mr. Henry May, Hope Nurseries, Bedale, being third. For thirty-six Roses, Messrs. Harkness followed up their former success with splendid blooms, Mr. Henry May following. For yellow Roses, Mr. J. Short, Hammersknot, was first with *Gloire de Dijon*; and for twelve of any sort Messrs. Mack & Son, with *E. Y. Teas*. For Tea-scented Roses Messrs. Harkness were again first, *Etoile de Lyon*, *Maréchal Niel*, *Souvenir d'un Ami*, and *Bouquet d'Or* being very fine. Messrs. Mack were second. For twenty-four show Pansies Mr. R. R. Atkinson was first; and for twenty-four Fancy, Mr. J. Silksworth, Sunderland. For twelve bunches of cut flowers Mr. J. McIndoe (gardener to Sir Jos. Pease, Hutton Hall) was first, the flowers of *Dipladenia amabilis*, *Cypripedium barbatum*, *Allamanda Wardleiana*, *Bignonia grandiflora*, *Anthurium Schertzerianum*, and the curious stove plant, *Attacia cristata*, commonly called Devil's Plants, being all good. Herbaceous flowers were a most excellent display, the first prize again falling to Mr. Thomas Battensby, Hagg Hill, Blaydon-on-Tyne, and we never remember him staging more effectively. Mr. J. Short was second in this class.

TABLE DECORATIONS AND EPERGNES.—There was some falling off in these, several local exhibitors not showing. Mr. W. R. Armstrong exhibiting a good epergne filled with the usual flowers used for such occasions. For a bridal bouquet Mr. J. R. Chard, Chase Corner, Clapham Common, with a neat arrangement in which *Asters* were judiciously used. For the best buttonhole Mr. J. Corbett, Benwell Hall, was first with a pleasing arrangement of *Hoya bella*, *Forget-me-nots*, and *Adiantum gracillimum*.

In classes from which nurserymen were excluded some excellent plants

were staged. Mr. E. H. Letts was first for six with superior examples of culture; Mr. E. Adams second, *Kalosanthes coccinea* with seventy trusses being good. For six stove Ferns Mr. J. McIntyre was first, also for hardy Ferns. For six foliage plants Mr. J. Hammond was first. Table plants were very good, Mr. H. Johnson being the most successful exhibitor. Roses were successfully shown in this section by Mr. George Finlay, East Layton Hall, and bouquets by Mr. J. Corbett and Mr. G. Webster.

FRUIT.—Fruit formed an excellent show, but some of the Grapes would have been better for a little more time to finish, especially some of the Muscats. For eight dishes Mr. J. McIndoe was first with good Black Hamburg and Muscat of Alexandria Grapes, Pitmaston Orange Nectarines and Royal George Peaches, Queen Pine, and a Scarlet Premier Melon. Mr. J. Edmonds, gardener to the Duke of St. Albans, was second with a fine even lot. For four dishes of fruit, Pines excluded, Mr. McIndoe was again first with Black Hamburg, Duke of Buccleuch Grapes (splendid berries), Goshawk Peach, and Scarlet Premier Melon. Mr. Edmonds was second again with Muscat and Black Hamburg Grapes, Violette Hative Nectarines, and Bellegarde Peaches. For two bunches of white Grapes Mr. McIndoe was first with Foster's Seedling. For three bunches of black Grapes Mr. Jno. Potter, gardener to Mrs. George Moore, Carlisle, was first with splendid samples in size and shape. Mr. Thomas Jenkins, gardener to B. Cochrane, Esq., was second and Mr. McIndoe third. There were five lots staged. Mr. Edmonds was first with Peaches and Mr. McIndoe with Tomatoes.

Local nurserymen all exhibited grand stands of plants. Mr. J. Wardle of the City Nurseries, Newcastle, showed an excellent stand. Mr. Wardle was well known many years as a practical gardener at Colonel Josing's, Newton Hall; his plants were principally stove, greenhouse, and hardy plants for town decoration. Mr. William Sell, Hexham, showed a grand lot of hardy Coniferae, and Mr. Joseph Robson of the same place had a similar stand, including branches showing the productiveness of the Whinham Gooseberry. Mr. Laing, Forest Hill, showed a grand stand of Begonias in bloom.

After the judging the Committee, Judges, &c., dined in the adjoining tents. The Chairman announced it was the intention of the Committee to raise £50 alone for Orchids. Great praise is due to the Committee, Secretary, and Treasurer for the time they spend in the interests of the Society, and is only regrettable that the weather should have been so unfortunate, the losses at the gates amounting to £190.

WEST OF SCOTLAND PANSY SOCIETY'S SHOW.

THE seventh annual Exhibition of Pansies, Roses, and Pinks was held in the City Hall, Glasgow, on the 23rd and 24th inst., under the auspices of this Society. The display of Pansies, which may be regarded as the chief feature of the Show, was very fine, notwithstanding the unfavourable nature of the weather of the last two or three days, the size, form, colour, and texture being almost all that could be desired. There was also an excellent display of Roses and Pinks.

PANSIES (nurserymen only), twenty-four blooms of Show Pansies, distinct varieties.—The first prize in this class was won by Mr. John Sutherland, Lenzie. The blooms were very fine, and were D. Malcolm, Miss Ritchie, Mrs. Gladstone, Jeanie Grieve, Miss Helen Douglas, J. B. Robertson, Jessie Foot, Mauve Queen, Mr. McFarlane, John Wilkie, A. Miller, Annie Dowie, Sir W. Collins, Lady Rosebery, Harvey Paul, W. Anderson, W. Robin, Mrs. Lister, and Mrs. Dobbie. Mr. A. Lister, Rothesay, was second; and Mr. M. Campbell, Blantyre, third. Twenty-four blooms of Fancy Pansies, distinct varieties.—The first prize in this class was also gained by Mr. John Sutherland. The names of the blooms were Pilrig, Neil McKay, Mrs. J. Downie, Mrs. G. P. Frame, Peter Fox, Mrs. John Wyllie, William Dick, Chas. Stansell, Princess Beatrice, John Bryce, May Tate, Mrs. Findlay, John Lamont, Mrs. Goodwin, Eudymion, E. Bruce, Lord Rosebery, W. Cuthbertson, Catherine Agnes, G. Henderson, G. Carlaw, and J. Paterson. Mr. A. Lister was again second; he had some very fine blooms on his stand, among which were Pilrig, Princess Beatrice, Mrs. J. Downie (this was the best bloom of Fancy Pansy in the Hall), John Bryce, also a splendid seedling, which was not named. Mr. Campbell was third. In this stand was exhibited a very fine seedling, which was named Mrs. D. D. Crookston.

GARDENERS' CLASS.—In this class Messrs. J. Harper, Dreghorn; R. Stewart, Lenzie; and J. Milne, Hurlford, were the principal prizetakers.

AMATEURS' CLASS.—In this class Messrs. Wm. Storrie, Lenzie; J. J. Stewart, Lennoxtown; P. Lyle, Kilbarchan; and W. Buchanan, Balmory, were the principal prizetakers. In the open to all class the competition was very keen. Mr. P. Lyle won the first prize for twenty-four blooms show Pansies, distinct varieties, with a splendid lot of blooms. Mr. W. Storrie was second, Mr. J. Sutherland third.

A gold medal was given for twenty-four blooms of fancy Pansies, distinct varieties, which was won by Mr. A. Lister. Among the blooms on this stand were E. Bruce, D. McBean, Mrs. J. Downie, Catherine Agnes, Wm. Dick, A. Ashcroft, Prince's Beatrice, Ave Ready, L. McCormick, Mrs. Findlay, R. Duncan, J. Bryce, Mrs. A. D. Black, Mrs. G. P. Frame, Mrs. Howard, Lord Rosebery, Mrs. G. Couper, Mrs. J. Wyllie, J. Sutherland, W. Cuthbertson, C. Stansell, Pilrig, W. Stewart, Mrs. Sword. Mr. Wm. Storrie second and Mr. J. Sutherland third. In the class for amateurs only the prizetakers were Mr. J. Hastie, Mr. R. McNaught, Mr. Wm. McLaren, all of Albert Gardens, Glasgow, and Mr. J. Stewart, Shawlands.

VIOLAS, open to all.—Twelve bunches of Violas, distinct varieties. Mr. Baxter, gardener, Broomhouse, carried all before him in the class, most of the varieties being of his own raising. He was first with Mrs. Baxter, Skylark, York-and-Lancaster, Bullion, Ethel Baxter, Dawn of Day, Countess of Kintore, A. Grant, Countess of Hopstoun, Merchiston Castle, Duchess of Sutherland, and Crimson Gem. Second prize Mr. T. Brown, Carlisle; third Mr. T. Brown, Uddingstone. For six bunches Violas, distinct varieties, first Mr. J. Baxter, second no name, third Mr. J. Stewart.

ROSES.—The chief exhibitors of Roses were Messrs. Dickson, Belfast and Newtonards; Mr. Bryson, Helensburgh; Mr. Montgomery, Cardross; Mr. Anderson, Helensburgh; and Mr. McGredy, an Irish grower. The exhibits of Messrs. Dickson were, as usual, of superior quality, but the Scotch, it is evident, are fast making up on the Irish growers. The display, as a whole, was exceedingly fine, and on account of the advantage of a week's

time the blooms shown were far superior to those exhibited at Helensburgh. In the nurserymen's class of forty-eight blooms, distinct varieties, Mr. Hugh Dickson, Balmont, Belfast, was first with a very fine lot. Among the best were A. K. Williams, Alfred Colomb, Beauty of Waltham, Captain Christy, Charles Lefebvre, Duchess of Bedford, Duke of Edinburgh, François Michelin, John Stuart Mill, La France, Madame Eugène Verdier, Mdlle. Eugénie Verdier, Marie Baumann, Merveille de Lyon, Mrs. Caroline Swales, (extra fine), Princess Mary of Cambridge, Ulrich Brunner, White Baroness. Messrs. A. Dickson & Son, Newtonards, Belfast, were second, Mr. Wm. Montgomery, Cardross, third, and Messrs. M. Gredy & Son, Portadown, Ireland fourth. Twenty-four Roses, distinct varieties.—Messrs. A. Dickson & Son were first with splendid blooms, notably the following being very fine:—Alfred Colomb, A. K. Williams, Beauty of Waltham, Charles Lefebvre, Comtesse de Serenye, Duchess of Bedford, Honrich Schultheis, La France, Madame Charles Wood, Mdlle. Eugénie Verdier, Merveille de Lyon, Mons. Noman, Prince Arthur, Princess Mary of Cambridge, Reynolds Hole, Thomas Mills. Mr. Hugh Dickson second, and Mr. Wm. Montgomery third.

In the gardeners' classes the most successful competitors were Messrs. A. Park, Cardross; W. Parlange, Helensburgh; and P. McColl, Row. In the amateurs' classes Messrs. J. Kidd & Wallace, Rothesay, and Mr. T. McCrorie, Kilbarchan, had it all their own way. In the competition for twenty-four blooms, York-and-Lancaster Roses, Mr. Wm. Thorburn was first, Mr. J. McColl second, and Mr. J. Baxter third.

PINKS.—There was a good show of these, and about the average number of exhibitors. Messrs. M. Campbell, W. Dickson, Paisley, and J. Sutherland took the honours in the nurserymen's class as they are placed. In the gardeners' and amateurs' classes Messrs. T. McCrorie, W. Storrie, and D. Keir were the principal prizetakers. In the class for lady members Miss Lizzie A. Sutherland, Lenzie, was principal prizetaker.

CERTIFICATES OF MERIT.—A first-class certificate was awarded to Mr. Campbell, nurseryman, Blantyre, for a fine collection of Picotees and Carnations, also some stands of Pansies. First-class certificates were awarded to Messrs. A. Dickson & Sons for two seedling Roses of great merit. *Lord Dufferin*, deep rich claret, with bright vermilion reflex of petals, of beautiful form and great substance; decidedly the finest dark Rose. A bloom of this variety was awarded the prize for the best bloom in the hall. *Caroline Darden*, a very deep rich Rose of fine size and form, and very highly perfumed. A first-class certificate was also awarded to Mr. G. Bainbridge, nurseryman, Rutherglen, for a collection of some thirty varieties of *Pelargonium*; and Mr. William Dickson, nurseryman, Paisley, was awarded a certificate for three seedling Pinks, Miss A. Gordon.—ALBERT, Glasgow.

THE NATIONAL CARNATION AND PICOTEE SOCIETY. SOUTHERN SECTION.

JULY 27TH.

THE annual Exhibition for the southern growers of Carnations and Picotees was held at South Kensington last Tuesday, and provided a good representative display in all the classes. The Slough and Ilford blooms were in first-rate condition, and so nearly equal were they that in the large class for twenty-four Picotees two first prizes were awarded for them. Amongst the Carnations Mr. Turner had slightly the advantage in point of size, but the blooms staged by Mr. Douglas were extremely fresh, young, though well developed, the colours very bright and clearly defined. The latter character was strongly marked throughout the Exhibition, even amongst the weaker collections, although in some gardens the number of run blooms this season has been unusually great. There were a few such instances at the Show, but they were chiefly amongst the single specimens. The general form of arranging the blooms on stands was adopted, but the graceful and natural manner in which Mr. T. S. Ware disposed his non-competing collection of blooms with their own or pink foliage attracted so much attention and admiration that the Society would do well to add a class to their schedule for Carnations and Picotees arranged in a similar way. A very pleasing feature might thus be added to the Exhibition without in any way affecting the classes specially for show varieties that could not be so well compared in any other way than when on stands as at present. Messrs. J. Veitch & Sons' wonderful collection of blooms also constituted an important addition both to the extent and beauty of the Show, for visitors had an opportunity of comparing the respective qualities of all the best show and border varieties in cultivation.

After a careful search the Judges selected two blooms in Mr. Turner's collections for premier honours, the Carnation being a grand well-built and brightly coloured bloom of Rob Roy, a corner bloom in the first twenty-four, and the Picotee was the beautiful heavy rose-edged variety Mrs. Payne (Fellowes), a fine representative bloom of this variety. First-class certificates were awarded for the following novelties:—

Picotee Polie Brazil (Anstiss).—A heavy purple-edged variety with beautifully formed petals, symmetrically arranged, the white very pure, and the edge rich. This was also awarded the first prize as a seedling.

Picotee Annie Douglas (J. Douglas).—A yellow ground variety with a bright rose edge, a very pretty neat variety.

Carnation General Stewart (J. Veitch & Sons).—A Clove variety with substantial smooth blooms of a rich maroon colour and very fragrant.

CARNATIONS.

The leading class in the schedule was that for twenty-four blooms, not less than twelve varieties. Mr. C. Turner, Slough, took the first honours in this class with very handsome blooms of good size, and representing the following varieties. Back row—Edward Adams, John Ball, A. K. Mayor, Mrs. Bridgewater, Jas. Douglas, Robert Lord, A. K. Mayor, and Rob Roy. Second row—Miss E. Wemyss, Jas. Douglas, Rob Roy, H. Cannell, Wm. Skirving, Mrs. Tomes, George, and Jas. Taylor. Front row—Matador, Rifleman, A. Medhurst, E. S. Dawdell, A. M. Thurston, Sarah Payne Sporting Lass, and Matador. Mr. J. Douglas, gardener to J. Whitbourn, Esq., Great Gearty, Ilford, secured the second prize with a beautiful stand of blooms, rather fresher than the first, but slightly smaller. The varieties were as follows:—Back row—J. Douglas, Mrs. Barlow, Matador, Felicity, Corisande, Matador Felicity, and Jas. Crossland. Second row—S. Barlow, Thalia,

Unexpected, Alisemond, Jas. Douglas, sport from James Merryweather, Tim Bobbin, and Squire Whitbourn. Front row—Diana, Fred, Squire Whitbourn, Thetis, Corisande, Sarah Payne, Duc d'Aumale, and Seedling. Mr. John Hines was third. Mr. T. Garratt, Bishops Stortford, fourth, and Mr. T. Hooper, Bath, fifth, that being the number of competitors.

For twelve blooms, distinct varieties, the first prize was secured by Mr. J. Douglas with a charming collection of blooms, exceedingly bright and of good substance. Back row—Thalia, Unexpected, Jas. Douglas, and Matador. Second row—Sarah Payne, Fred, Duc d'Aumale (Douglas), John Keet. Front row—A crimson bizarre sport from James Merryweather (Douglas), Alisemond (Douglas), Squire Whitbourn, and Arthur Medhurst (Douglas). Mr. John Hines, 81, Bramford Road, Ipswich, was second with good flowers, but not so well finished as the first, Tim Bobbin and Sporting Lass, as corner blooms, were very bright. Third Mr. Joseph Lakin, Temple Cowley, Oxon, with a neat collection. To the fourth prize collection the name of the exhibitor was not attached. There were five entries.

For six blooms the prizes were awarded in the following order. First Mr. C. Phillips, Hamilton Road, Reading, with W. Gawn, Robert Morris, W. K. Mayer, John Harland, Tom Power, and George Melville. Second Mr. T. E. Harwood, Hamilton Road, Reading. Third Mr. T. Anstiss, Brill; and fourth, Aubrey Spurling, Esq., The Nest, Blackheath. There were eleven entries.

SINGLE SPECIMENS.—*Scarlet Bizarres.*—Mr. C. Turner, first and second with Robert Lord. Mr. J. Douglas third with Arthur Medhurst, and fourth with Master Stanley; Mr. C. Phillips fifth with George.

Crimson Bizarres.—Mr. J. Douglas first with Duc d'Aumale, and third with Merryweather sport; Mr. C. Turner second with Rifleman; Mr. J. Lakin fourth with Master Fred; Mr. T. Anstiss fifth with Master Fred.

Pink and Purple Bizarres.—Mr. C. Turner first and second with Sarah Payne; Mr. J. Douglas third with Unexpected; Mr. J. Lakin fourth with Squire Llewellyn; and Mr. Rowan fifth with W. Skirving.

Purple Flakes.—Mr. C. Turner first with Mayor of Nottingham, and fourth with Sporting Lass; Mr. J. Lakin second with Squire Meynell, and fifth with Major Gane; Mr. C. Phillips third with Sarah Payne.

Scarlet Flakes.—Mr. J. Douglas first with Matador, and fifth with a seedling; Mr. C. Turner second with H. Cannell, and fourth with Figaro; and Mr. C. Phillips third with Sportsman.

Rose Flakes.—Mr. C. Turner first and second with Rob Roy. Mr. J. Lakin third with Tim Bobbin; and Mr. J. Douglas fourth with Diana, and fifth with seedling from Thalia.

The number of single blooms entered was not quite so large as usual.

PICOTEES.

The first-class in the schedule for Picotees was that for twenty-four blooms, not less than twelve varieties, and in this Mr. J. Douglas showed some very handsome blooms, being awarded an equal first prize with Mr. C. Turner. The Ilford blooms were arranged as follows:—Back row: Her Majesty, Heureuse, J. B. Bryant, Alice, seedling 13, Clara Penson, seedling, Liddington's Favourite. Second row: Mrs. Payne, Clara Liddington, Mrs. Chancellor, T. Williams, Muriel, Mrs. Payne, Mrs. Williams. Front row: Princess of Wales, Her Majesty, Constance Heron, Dr. Horner, Muriel, Brunette, Mrs. Gorton, and Princess of Wales. An equal first prize was accorded to Mr. C. Turner for a charming collection of blooms, comprising the following:—Back row: Orlando, Her Majesty, Juliette, Favourite, Her Majesty, Favourite, Juliette, and Orlando. Second row: J. B. Bryant, Lucy, Edith Dombrain, J. B. Bryant, Duchess, Dr. Epps, Mrs. Payne, and Princess of Wales. Front row: Mrs. Payne, Mrs. Williams, Mrs. A. Chancellor, Constance Heron, Brunette, Louisa, Muriel, and Mand. Mr. John Hines was second with much smaller blooms, Mr. F. Hooper third, and Mr. T. Garratt fourth. There was considerable difference in the quality of the two first stands of blooms and the others, but both the Slough and Ilford Picotees were in capital condition. For twelve blooms, of similar varieties, Mr. J. Douglas was first with Her Majesty, Princess of Wales, Alice, a seedling, Constance Heron, Mrs. Gorton, Favourite, Muriel, Thomas Williams, John Smith, Clara Penson, and Mrs. Payne; second, Mr. J. Lakin; third, Mr. John Buxton; fourth, Mr. Rowan, Clapham; and fifth, Mr. J. Hines. Nine entries. With six blooms the prizes were awarded in this order:—First, Mr. T. Anstiss; second, Mr. T. E. Harwood; third, no name; fourth, Mr. C. Phillips; fifth, Mr. Glasscock. Thirteen entries.

SINGLE SPECIMENS.—*Red heavy-edged.*—Mr. C. Turner first and second with Henry, Mr. J. Douglas third and fifth with Princess of Wales, Mr. Henwood fourth with Mrs. Dodwell.

Red light-edged.—Mr. C. Turner first and second with Mrs. Gorton, Mr. J. Douglas third and fourth with Thos. Williams, Mr. C. Phillips fifth with Clara.

Purple heavy-edged.—Mr. C. Turner first and second with Muriel, Mr. J. Douglas third with Mrs. Chancellor, Mr. A. J. Sanders fourth and fifth with Zerkina.

Purple light-edged.—Mr. C. Turner first and second with Juliette, Mr. J. Douglas third with Her Majesty, Mr. A. J. Sanders fourth and fifth with Nymphs and Pride of Leyton.

Rose or Scarlet heavy edged.—Mr. C. Turner first and second with Mrs. Payne, Mr. Rowan third with the same, Mr. J. Hines fourth with Edith Dombrain, and Mr. J. Douglas fifth with Mrs. Payne.

Rose and Scarlet light-edged.—Mr. J. Douglas first and third with Liddington's Favourite, Mr. J. Lakin second, Mr. T. Anstiss fourth, and Mr. C. Turner fifth with the same.

Yellow Ground.—Mr. J. Douglas first and second with Agnes Chambers; Mr. C. Turner third and fourth with Prince of Orange; fifth (no name) with Lord Rothschild (Finlayson).

SELFS, FANCIES, OR YELLOW GROUNDS.

These classes formed a bright display, the colours being so varied and rich. Mr. C. Turner secured the first prize for twenty-four varieties with a charming collection, very clean and substantial blooms. The most notable varieties were Mary Morris, Guardsman, The Governor, Edith, Sybil, Master Stanley, Rob Roy, and W. P. Milner. Mr. J. Douglas followed with twenty-four seedlings, very pretty, and of good substance. Mr. W. Toby, Fulham Road, was third; Mr. Hooper fourth, and Mr. H. Catley, 16, Claverton

Buildings, Bath, fifth. In class K, for twelve blooms, Aubrey Spurling, Esq. was awarded the first prize for handsome blooms of Sir Toby Beech, Edith, The Bride, Robert Lord, seedling, Trojan, Mrs. H. Morris, Bride of Blackheath, Mark Autouy, Matador, and Jessica; second, Mr. J. Lakin, and an equal second to another stand; third, Mr. T. Anstiss; fourth, Mr. W. Rowan, 36, Manor Street, Clapham, and Mr. W. E. Walker; fifth, Mr. C. Phillips; sixth, Mr. Wm. Meddick, Bath. Eleven entries. For twelve yellow ground Picotees, Mr. J. Douglas was first with pretty blooms; Mr. C. Turner second, Mr. A. Spurling third, Mr. H. Hooper fourth, and Mr. H. Catley fifth.

A class was provided as usual for Carnations and Picotees in pots, in which Mr. J. Douglas and Mr. C. Turner were the two exhibitors, and the prizetakers in the order named. Of the nine plants shown by Mr. Douglas one of the most noteworthy varieties was Colonial Beauty, a fancy seedling raised at Ilford, and something like the one named Terra Cotta, for which a certificate was awarded by the Floral Committee. The appearance of the plants was greatly improved by the absence of the large collars that have been usually employed on previous occasions.

MISCELLANEOUS.—There were several non-competing contributions from nurserymen that added materially to the beauty of the exhibition. Messrs. J. Veitch & Sons, Chelsea, had an excellent collection of Carnation and Picotee blooms. Eight boxes were shown, containing about forty blooms each, and representing all the best varieties in the various classes of show flowers, as well as the most effective border varieties. There was a cleanness, substance, and brightness of colour that was most satisfactory, and this remarkable exhibit formed one of the leading features of the show. As the principal varieties are referred to in another column they need not be given here. Mr. T. S. Ware, Tottenham, exhibited six boxes of hardy border Carnations, most tastefully arranged with their own and pink foliage, in little clusters raised above the moss in the boxes, and had a most charming effect. Messrs. Hooper & Co., Covent Garden, sent five boxes of Carnation blooms. Mr. H. G. Smyth, 21, Goldsmith Street, Drury Lane, showed flowers of a new border Carnation named H. G. Smyth, bright scarlet in colour and described as very free. Mr. C. Turner had some stands of blooms, and excellent plants of Souvenir de la Malmaison, and others of that type.

VIOLETS FOR MARKET.

SWEET Violets are much appreciated by all. As buttonholes the meet a ready sale in cities, towns, and populous districts, bringing fairly remunerative returns to the grower. Little knots of flowers arranged so that the blooms face one way, shaped like an inverted heart slightly raised in the centre, and hacked by their own leaves or those of the Ivy. Bouquets do not find much favour with townspeople, and the returns from them are not nearly so encouraging as those from the buttonholes, which are readily disposable by the dozen bunches wholesale, with a few bunches thrown in in favour of the retailer.

Situation.—The position should be open, as the plants have the full benefit of sun, air, rain, and dew, and the plants cannot be too sturdy or the growth too well solidified if large blooms are to be forthcoming, as their presence depends greatly, if not entirely, on the hardness of the plant. The intervening spaces between rows of fruit trees may be utilised with rows or beds of Violets, and vacant ground under young standard trees may be requisitioned, but these are not nearly so good as open spaces.

Soil.—Any good loam will grow Violets well. Medium-textured loam is best, and light soil may be rendered suitable by following the instructions given under the head of "Cultivated Violets." Ground that has been some time under a rotation of vegetable crops and duly cultivated will answer, and if in good heart no manure need be given, reserving it for mulching after the plants become established. If following an exhausting crop afford a liberal dressing of manure, leaf soil, or the *débris* of the rubbish heap, rejecting the woody portions or charring them before application. Avoid using a large quantity of wood ashes, as much potash causes a luxuriance that does not favour floriferousness. A bushel of lime, soot, wood ashes, and half a bushel of salt, all dry and mixed, form a good dressing for ground to be planted with Violets, applying at the rate of a peck per rod. It should be spread evenly, and only just pointed in. The manure need only be mixed with the top 6 or 9 inches of the surface soil. Violets will follow most crops in a kitchen garden except Strawberries. They do well in newly broken ground, and on the site of a previous wood or orchard.

Planting.—Choose runners or suckers from plants that have been grown in the open ground, sturdy and well rooted. Plant the strong growers in rows 18 inches apart and 15 inches asunder in the rows; medium growers 15 inches apart and 12 inches asunder in the rows. For facility of cultivation every fourth or fifth row may be omitted. The small growers are not profitable. Choose a moist time for planting with a view to saving labour in watering, but it is not well to defer planting later than the early part of May. In dry weather supply water until established.

Summer Treatment.—Hoe frequently, alike to keep down weeds and insure a loose surface up to midsummer. Tread the ground then if light, and mulch before or by July with partially decayed manure, or spent Mushroom beds, or partially decayed leaves. Lawn mowings, or other loose material of a decaying nature and not generating weeds are useful, replenishing from time to time, but never having a greater thickness than a couple of inches. Water over the foliage in the evening of hot days, and give a good soaking once a week between the rows if the rainfall is less than an inch in any fortnight to June to September inclusive. Liquid manure may be given in lieu of the water if the plants need invigorating. Hand-weed after the mulching is placed on, and remove all runners. Don't with soot if red spider appear, and as much as possible on the under side of the leaves. Syringings in the evenings of hot days are

also useful against red spider. It is poverty and lack of moisture, however, that cause attacks of red spider.

Autumn and Winter Treatment.—In October trim the plants by removing any bad or decayed leaves, but do not strip off any green leaves. Turn the mulch in with a fork lightly, not damaging the surface roots, and being careful not to place any soil on the leaves or flower buds. Varieties that flower at that season will need to be very carefully handled. Mulch again before sharp weather or by the middle of November with some half-decayed manure or litter, and place it neatly about the plants and not so as to huddle the leaves together. The mulching will retain the earth's heat or prevent its loss, and with the roots safe from frost the tops will endure many more degrees of cold without injury than when the soil is bare and frozen through. Avoid working amongst the plants in wet weather, as the soil is then made very close at the surface, and water is prevented percolating freely through it and carrying down air. Remove all spent blooms, and do not allow seed to form.

Protection.—All the winter bloomers require protection against frost. Rain does not injure Violet blooms unless it is very prolonged, but frost damages the buds and flowers. Frames afford the best protection, as the lights can be withdrawn in fine warm weather. Mats or other covering should be available for placing over the frames in frosty weather. Straw mats supported on lattice frames above the plants, and sloping so as to throw off wet, are useful, only care is taken to remove them in mild weather. Old lights supported on bricks and so as to throw off rain are preferable. Spruce and other evergreen branches stuck in the ground and leaning over the plants during the prevalence of cold cutting winds and sharp frosts in spring will often save the flowers, and make all the difference between the profitableness or unprofitableness of Violets. Do not give protection until it is necessary, but always have it in readiness for application in case of emergency. It is more particularly necessary in sharp weather succeeding a period of mild weather, particularly in a cold spring after a mild winter, a few hours' sharp frost spoiling the anticipated harvest of bloom, if indeed there is not a great loss of plants. Violet growers must have hardy plants, and not rest satisfied with that but protect.

Gathering the Flowers.—Never gather the flowers until they are at least three parts expanded. Some gather them in the bud. It is a great waste of substance, for though the buds will expand somewhat after gathering they never attain to the size they do on the plant, supported by it until full size, and the bud and over-blown Violet have not the scent of the Violet when approaching full expansion. Full-blown, or very nearly so, is the proper condition to gather a Violet. Allowing it to remain after it becomes fully expanded only weakens the plants, and is a loss to the possessor from lessened fragrance and endurance. Just before attaining full expansion and until fructification is effected, the Violet has most perfume and is always sweetest in the morning, and their endurance is greater than when gathered limp in midday or afterwards.

Varieties for Market.—Russian (London and Scotch), bluish purple; spring. Floribunda (Boothby), flowers large, bluish purple, free-flowering; autumn, winter, and spring. Victoria Regina (Lee), very large, purple; autumn, winter, and spring. Odoratissima (Lee), bluish purple, very large; spring, very floriferous. Patrie, double, deep purple, violet; September to April; extra fine. Double Russian, purple; spring. King of Violets, double, indigo blue; spring. Neapolitan vars., all have double flowers. New York, deep mauve, streaked red; September to April. Marie Louise, lavender blue, white eye; September to April. De Parme, deep lavender, white eye; September to April. White Neapolitan, September to April. The last four require to be grown in frames, as it is only on the southern coast that flowers are had with certainty outdoors at the time named, and only there in sheltered spots. Patrie also requires frame protection to insure flowers in the winter.—VIOLET.

ROYAL HORTICULTURAL SOCIETY.

JULY 27TH.

THE National Carnation and Picotee Society's Show, with the hardy flowers and Roses brought before the Floral Committee, Messrs. Rivers' beautiful fruit trees, and the vegetables in competition, filled the conservatory, and afforded abundance to interest the numerous visitors.

FRUIT COMMITTEE.—Present: T. Francis Rivers, Esq., in the chair, and Messrs. J. G. Saltmarsh, J. Willard, W. D. nning, H. J. Veitch, G. Norman, G. Bunyard, John E. Lane, Philip Crowley, J. Ellam, J. Woodbridge, G. T. Miles, A. W. Sutton, and Dr. Robert Hogg.

The principal fruit exhibit was a collection of Cherry, Peach, Nectarine, and Plum trees in pots from Messrs. Rivers & Son, Sawbridgeworth, for which a silver Knightian medal was awarded. There were about a dozen fine healthy trees 5 or 6 feet high in 10 and 12-inch pots, and bearing extremely fine fruits, which in the case of the Cherries were also remarkably abundant. Several of the varieties were those raised at Sawbridgeworth, and were extremely handsome, as for example the Goldoni Nectarine, of which there were two trees, Sea Eagle and Nectarine Peaches, Monarch Plum, and Beacon Pears. Other varieties well represented were Cherries Bigarreau, Gros Cœur, and Black Hawk, both loaded with fruits, and Louise Bonne of Jersey Pears. In addition to these eleven dishes of Cherries were shown, which comprised the varieties Ludwig's Bigarreau, Bigarreau Noir de Guben, Late Black Bigarreau, Bigarreau Napoleon, Bedford Proflig, Monstreuse de Mezel, Geante d'Heidelberg, Griott Imperiale, Turkey Black Heart (very handsome), Emperor François, and Early Rivers, a superb collection, together with Rivers' Nectarine Peach and Early Louise Peach, the latter of good size and colour, from trees grown in a cold house. Reginald Kelly, Esq., Lifton, Devon, sent a seedling Melon which was over-ripe. Mr. G. Humphrey, Nash Court Gardens, Faversham, showed a seedling Melon, a cross between Sutton's Invincible and Masterpiece, which was passed. Mr. Wm. Barlow, St. Ann's Road, Stamford Hill, had a

twin Cucumber, the two fruits being united their whole length side by side, and he stated that he had seven other similar fruits in the same house, and all of the Telegraph variety. From the Royal Horticultural Society's Gardens at Chiswick came five varieties of Cabbages, including Very Early Etampes, St. John's Day, Early Dwarf, and Winningstadt, all Vilmorin's, and Wheeler's Imperial and Barr's Sugar Loaf. The two first-named appeared to be good early Cabbages.

Messrs. Hanseu and Larsin, 4, Hermitage Road, St. Ann's Road, Stamford Hill, N., exhibited a model of their "Automatic Ventilator and Temperature Regulator," which is so contrived that the expansion or contraction of a specially prepared bent metal rod is made to supply the power by which the lights are opened or closed according to the varying temperature. A vote of thanks was awarded to the exhibitors.

FLORAL COMMITTEE.—Present: G. F. Wilson, Esq., in the chair, and Messrs. J. Hudson, H. M. Pollett, J. Dominy, H. J. Leudry, E. Hill, C. Noble, W. Holmes, H. Herbst, W. Bealby, W. Wilks, Amos Perry, H. Bennett, T. Baines, H. Cannell, W. B. Kellock, G. Duffield, J. Walker, H. Ballantine, H. Turner, Shirley Hibberd, R. Deau, J. Douglass, and Dr. M. T. Masters.

W. Lee, Esq., Leatherhead, exhibited two grand racemes of *Laelia elegans* Turneri with large flowers, the sepals and petals warm purplish crimson and intensely rich crimson lips, well meriting the award of a cultural commendation. Baron Schröder, The Dell, Saines (gardeur, Mr. Ballantine), showed a scape of the celebrated and beautiful *Cypripedium Morganii* with three fine flowers. This, it may be remembered, is a hybrid between *C. superbiens* (Veitchi) and *C. Stonei*, and is remarkable for the length of the handsome petals, which in the flowers under notice were 4½ inches long by nearly three-quarters of an inch broad in the widest part, densely spotted with dark purplish mauve on a white ground. The dorsal sepal is white with a few very fine purplish veins, and the lip is large like *C. Stonei*, and pale purple with a few darker veins. Mr. T. Jannoch, Lily Nursery, Dersingham, King's Lynn, Norfolk, showed plants of a new Maidenhair Fern, *Adiantum Capillus-Veneris* grande, a fine bold form with handsome dark green substantial fronds, the pinnales broad and very distinct from the ordinary *A. Capillus-Veneris*. It is said to be very useful for decoration, as it stands well in rooms. Mr. R. Owen, Maidenhead, was awarded a vote of thanks for a collection of double and single Begonias, varied in colours and of large size. The Rev. A. Rawson, Bromley, Kent, sent a flower, *Papaver somniferum* var., white and scarlet, with deeply fringed petals, very pretty. A vote of thanks was accorded to Mr. H. B. May for *Pteris cretica* H. B. May, a compact useful Fern that has been noted several times before. A cultural commendation was awarded to Mr. Bealby for *Tuberous Begonia* Louis d'Or, a double pale yellow variety, with numerous fine flowers. Messrs. H. Cannell & Son, Swailey, showed plants of the excellent Carnation *Pride of Penshurst*, with bright yellow flowers, very free. Mr. R. Dean, Ealing, exhibited some Intermediate Stock, *Mauve Beauty* and a white variety being uncommonly fine, the former a fine double flower of a charming mauve tint (vote of thanks). Mr. C. Noble, Bagshot, sent some Clematis flowers; from Chiswick came a number of fine Hollyhocks; and from Messrs. E. H. Krelage & Son, Haarlem, Holland, some seedling *Gladiolus* of bright colours.

Several large collections of hardy flowers and Roses were supplied by nurserymen, and very prominent amongst these was a magnificent group from Mr. T. S. Ware, Tottenham, which not only contained a number of excellent plants, but they were most tastefully arranged. Thus there were clusters of *Papaver nudicaule* and its varieties *miniaturum* and *album*; then there were groups of many-coloured Phloxes, with the pure white Princess Beatrice very notable. From clusters of the elegant *Gypsophila paniculata* peeped out the brilliant scarlet *Lilium chalcedonicum*, with a taller plant of the lovely *Lilium auratum platyphyllum album*. Of other good *Liliums*, *L. longiflorum eximium*, *L. Martagon dalmaticum*, *L. croceum*, *L. canadense*, with such useful garden plants as *Helenium pumilum*, *Polemonium Richardsoni*, the pale pink free *Veronica elegans*, *Gaillardias*, *Erigeron amethystinum*, the pale yellow *Montbretia Feu d'Or*, the large-flowered *Campanula grandiflora plena*, and the pure white *Matricaria inodora grandiflora plena*, which was certificated. Messrs. Barr & Son, Covent Garden, also contributed an effective group of hardy flowers, amongst which Lilies, Japanese Irises, *Alstroemerias*, and Poppies were the chief features, with numerous other choice and beautiful plants. A superb collection of Roses from Messrs. W. Paul & Son, Waltham Cross, was greatly admired. Twelve boxes and the same number of baskets were shown, including handsome blooms representing a great number of varieties. Messrs. Paul & Son, Cheshunt, staged an extensive and beautiful collection of Roses and hardy flowers, which formed a brilliant and varied array of colours on one side of the conservatory.

PLANTS CERTIFICATED.

Cattleya gigas, Hill's variety (C. G. Hill, Esq., Arnot Hill, Notts; gardener, Mr. Davenport).—A grand variety with flowers 7 inches in diameter, the sepals and petals are rich crimson purple, the latter very broad; the lip is 3 inches in diameter, something like *C. Dowiana*, being rich gold at the base and sides, the upper or apical portion of an intensely rich crimson shade, the margin undulated. It was first labelled *C. Dowiana Hilli*, but it was subsequently altered to that given above.

Oncidium stelligerum Ernesti (R. F. Measures, Esq., Cambridge Lodge, Flodden Road, Camberwell; gardener, Mr. Simpkins).—A pretty variety, rather suggestive of some of the Miltonias, the sepals and petals pale yellowish green, barred and spotted with brown, the lip proportionately large, somewhat three-lobed, white at the base, and the upper half purplish with a ridge in the centre.

Rhododendron balsamiflorum Rajah (Messrs. J. Veitch & Sons).—A charming double variety with outer broad round guard petals orange tipped with red, the centre petals small, crumpled, and of a reddish tint. It is quite distinct from the other forms, but is said to have been obtained from the same pod of seed as the double white and pink varieties previously shown. We understand that the seed was obtained by fertilising with its own pollen a flower which accidentally showed a tendency to become double.

Todea grandipinnula (Messrs. J. Veitch & Sons).—A supposed hybrid between *T. Fraseri* and *T. hymenophylloides*, with graceful bipinnate fronds 8 to 9 inches long and about 8 inches broad at the widest part.

Carnation Terra Cotta (Mr. J. C. Douglas).—A fancy variety with a buff ground colour edged with a pale rosy purple tint, the blooms well formed.

Matricaria inodora grandiflora plena (Mr. T. S. Ware).—An improved seedling form of a well-known plant, the flowers double the ordinary size and pure white.

SPECIAL PRIZES.—Seven classes were provided, in which prizes were offered by the leading seedsmen for Peas and other vegetables. Messrs. J. Carter and Co., High Holborn, offered three prizes for twelve pods of their Leviathan Bean, which were won by Mr. R. Timbs, Amersham; Mr. T. A. Beckett, Penn, Bucks; and Mr. C. J. Waite, in the order named, all showing very fine pods, as did also most of the other six exhibitors. For the best Lettuce, comprising two heads of Giant White Cos, Longstander, and All the Year Round, the same firm offered three prizes, which were won by Mr. Beckett, Mr. Waite, and Mr. Harris, amongst five competitors. There were eight exhibitors of Carter's Heartwell Cabbage, Messrs. C. Osmau, Waite, and W. Jacob, Petworth, being awarded the prizes in that order with firm handsome specimens.

Messrs. Sutton & Sons, Reading, provided three classes for Peas, Cauliflowers, and Cabbages, in which the competition was close. For the best six dishes of Peas, to include Sutton's Satisfaction and Duke of Albany, Mr. H. Marriott was first with fine samples of Telegraph, Telephone, Duke of Albany, Evolution, Charming, and Satisfaction; Mr. H. Marriott, jun., was second, his dishes of Satisfaction and Duke of Albany being noteworthy. Mr. E. Walter and Mr. J. Cook, Boston, followed, and in all the seven collections staged the two Peas stipulated for were represented by good pods. The prizes for Sutton's First Crop Cauliflower were awarded to Messrs. Beckett, Waite, and Osmau, for medium size, but solid, pure white heads (five exhibitors). A class was also devoted to three specimens each of Sutton's Little Gem and All Heart, which brought nine competitors; Mr. Cornish, The Shrubbery Gardens, Enfield; Mr. G. Woodham, Model Farm, North Dulwich, and Mr. Osmau securing the awards with excellent well-hearted Cabbages. The first and second prizes for the Chancellor Peas, offered by Messrs. Webb & Sons, Stourbridge, were awarded to Mr. H. Marriott and H. Marriott, jun., both of whom had large well-filled pods. In addition to those in competition Mr. Marriott had fourteen dishes of handsome Peas, mostly new or recent varieties, and comprising Wordsley Wonder, Laxton's Charming, Duke of Albany, Webb's Chancellor, Evolution, Stratagem, and Carter's Telegraph, and Pride of the Market.

SCIENTIFIC COMMITTEE.

Dr. M. T. Masters in the chair. Present—Mr. Pascoe, Prof. Boulger, Mr. Worthington G. Smith, Mr. Wilson, Mr. O'Brien, and Rev. G. Henslow, Hon. Sec.

Selenipedium, Uropedium, and Cypripedium.—Observations were made upon these forms, that while the first and the last differ very slightly in morphological characters, having one and three-celled ovaries respectively, yet, as Mr. O'Brien observed, they refuse to cross, though *Selenipedium* cross readily, as do also *Cypripedium*s, with one another. *Uropedium* is a peloric variety of *Selenipedium*—i.e., a natural tendency to a reversion to a regular and more ancestral form.

Cypripedium superbiens (Veitchi).—Dr. Masters exhibited a blossom having two labella; another from the same plant had one within the other. In the former (being side by side) it was an additional petal to the ordinary number, but in the latter case the inner labellum represented an anterior stamen.

Cattleya Loddigesi.—Dr. Masters remarked on the specimen shown at the last meeting, which he had examined, and which proved to have two sepals, two petals, one stamen, and no pistil; hence it was a flower which had degraded to a dimerous condition.

Lilium lancifolium (speciosum).—Mr. O'Brien exhibited a plant which had been grown solely in moss for two years, with only a slight quantity of Clay's fertiliser added when the bulbs began to sprout. He remarked on the importance of potting fresh imported bulbs in some porous material, such as cocoanut fibre, &c., and to avoid burying them in the ground, in order that there might be a free circulation of air about the bulb. The common practice of planting in the ground often caused the bulbs to disappear entirely. The interpretation of the advice seemed to be the same as for seeds: that if planted too deeply, or so that air could not reach them to set up respiration, they would perish from asphyxia and rot.

Grapes with "Oidium Tuckeri."—Mr. Plowright forwarded specimens attacked by this fungus, now known to be *Erysiphe communis*, on the stalks, the Grapes themselves having some peculiar dendritic spots of a dark colour. There did not appear to be any mycelium. The dark lines, less than a quarter of an inch, are formed by reddish brown discolorations of the epidermal tissue. They were generally considered by the Committee not to be fungoid, but only natural changes of the character of the epidermis on ripening.

Nematoid Worms in Cereals.—Mr. Worthington G. Smith exhibited specimens of cereals from Midlothian, the roots of which were attacked by *Heterodera radiculicola*. It was called Tulip-root, Thick-root, and Segging in Oats in Scotland, and appeared to be widely spread, all crops being totally destroyed on damp clay soils for several years. On stony soils the crops were not so severely attacked.

Larix Griffithii with Cones.—Dr. M. T. Masters exhibited a branch bearing several cones. They were from 3 to 4 inches long, of a rich purple colour, while the pointed bracts behind each scale were of a golden brown. It was received from Mr. Nanscawen of Cornwall. It is believed to be the first instance of this Himalayan species of Larch to have borne cones in this country. He observed that the leaves were readily distinguished from those of *Larix europæa* by having stomata on the lower side only, while those of the common Larch are on both sides.

Clematis "Proteus," Double and Single.—Mr. Noble sent an illustration of this *Clematis*, which is remarkable for always bearing double flowers at the first flowering season, but later in the autumn only single flowers. It illustrated conditions of a temporary exhaustion in the plant, which is characteristic of this variety, but not of other forms of *Clematis*.

Clematis viticella rubra grandiflora sub virescens.—Mr. Noble also forwarded sprays of this plant with semi-foliaceous sepals, they being usually of a deep crimson; the green foliaceous character commenced at the apex of the sepal and more or less descended to the base.

Achillea Millefolium. dimorphism in.—Rev. G. Henslow called attention to the hitherto unobserved fact of this plant being gyno-dioecious. The

heads are very distinct when in blossom, as in the hermaphrodite flowers the yellow anthers when shedding their pollen protrude from the corolla, though they become withdrawn later on through the contraction of the filaments. This form has been carefully described by H. Müller ("Fert. of Fls.," p. 325-6), but he does not appear to have noticed the female form. In the first stage of blossoming of this kind the long style arms of the ray florets are very conspicuous, but later when they shrivel those of the disk florets rise up, but are of the same form as in the corresponding florets of the hermaphrodite flowers, being provided with the terminal brushes, the papillæ of which, however, seem to be less prominent. The anthers of the female are abortive and contain no pollen, and are often scarcely coherent. Another feature is the frequent reduction of petals and stamens in number to fours and threes in the female flowers; and, lastly, there is a slight difference in the length of the ovaries, that of the female being a trifle longer and the tube of the correspondingly a little shorter than in the hermaphrodite flowers.

Strawberry with foliaceous epicalyx.—Mr. Henslow exhibited a specimen in which each of the divisions of the epicalyx consisted of a three-lobed leaflet. They are ordinary bract-like or sometimes cleft at the apex, which has given rise to the theory that they represent pairs of coherent stipules. The present example would seem to point to their being a whorl of true leaves in their primitive condition, and before separation into three leaflets to form the usual compound leaf.



KITCHEN GARDEN.

THINNING VEGETABLES.—All vegetables intended for late autumn and winter use should be well thinned during the early part of their growth, that they may become very hardy and able to bear severe weather. Late Turnips now require much thinning, and Spinach should also be freely thinned. As a rule, field roots are much harder than those in the garden, and this is mainly due to the system of giving them more room in the fields. Some are inclined to think that by growing them close they will get more of them, and this is certainly true, but we always prefer quality to quantity, as giving the greatest satisfaction everywhere.

STAKING AND TYING ASPARAGUS.—There is nothing more injurious to Asparagus plants, or more detrimental to the crop, than allowing the growths to be blown about and broken by the wind. The stems do not break, but they snap at their connection with the crown, and it is this which injures the roots so much. The best mode of treating them is to stake and tie them up from the first, but it is now, when the stems are becoming fully grown, that they are heaviest and most apt to fall over, and if staking and tying has not had attention, no time should be lost in giving it. Any kind of stakes will do, and strong soft matting is the best material for tying with.

TOMATOES.—Plants growing under glass are now bearing fruit, and as good crops are formed the main object should be to get them matured. Superfluous shoots must be kept constantly pinched off, and where the foliage is luxuriant and shading the crop, a quantity of it should be removed. It is astonishing how well the fruit swells and ripens when the foliage is very thin. Now that we have more rain open air plants are growing rapidly, and the main stems require to be staked and tied, or nailed to the wall as the case may be, frequently. Taking off the shoots and thinning the leaves also applies forcibly to these, but the fruit need never be thinned unless it is required for exhibition or a special purpose.

LATE PARSLEY.—All gardeners know that it is most important that a supply of Parsley be kept up all the year round, and amateurs and small garden holders also know that it is very desirable that they should be able to gather Parsley throughout every week in the year. Spring-sown Parsley has done very well this season, very little of it having been destroyed by the maggot, but early spring plants are very liable to become rough and poor before the winter is over, and to have a supply of robust green leaves a quantity of seed should be sown now to produce the winter and spring crop. Where it is not convenient to do this, however, take all the old leaves from the spring plants, dress them with a little artificial manure, and allow them to form young leaves for winter use. Where a quantity of seed was sown about midsummer the plants will now be ready for transplanting, and a number of them should be put into a frame where they can be easily protected in winter. This is a great advantage, especially in localities where the winter is generally severe. In all cases of sowing or planting always introduce a quantity of lime or soot into the soil, as it is most important that the maggot should never gain a footing in the neighbourhood of Parsley.

SAVING SEED.—Where it is intended to save seed of Peas, Beans, &c., the whole of the best produce should not be gathered, and only allow the inferior to remain to ripen for seed, as this is a sure way of degenerating the crops, but when seed is saved from the very best of the produce the succeeding crop is almost sure to be superior, and there is no better way than this of improving crops generally. Indeed it is impossible to be too careful in selecting seed, and the best only should be dealt with. It is an advantage to have it ripened and harvested before the fine weather is over, few kitchen garden seeds can be secured in good condition in late autumn.

LATE CARROTS.—Where early sown Carrots have not done well, or where young Carrots are greatly valued at all times, it is a good plan to

make a sowing of the Early English or Early French Horn at this time. They will be ready for use by October and remain good throughout the winter. They may be sown on ground recently cleared of Potatoes, merely levelling the soil down and sowing without further manuring. The rows should be 15 inches apart and the drills 2 inches deep. The young plants must be thinned as soon as they can be handled, as it is only by attention to this that early roots are formed.

LETTUCE AND ENDIVE.—The plants raised from seed sown some weeks ago are now ready for transplanting, and as these will give a supply in late autumn and early winter they may be regarded as an important crop requiring good attention. In lifting them from the seed rows put a label or something else under the roots to ease them without breaking too many of the fibres. Select soil for them in some favourable part of the garden, and put them in rows 1 foot apart each way. Sow more seed of the Improved Broad-leaved Batavian Endive and Hardy Winter White Cos Lettuce. This sowing is the one which produces plants for a supply throughout the whole winter. Do it well.

DRYING HERBS.—Dried herbs are most useful in winter; indeed, cooks cannot get on without them, and a supply should always be provided. Now is a good time to cut and dry them. Large quantities of such herbs as Sage, Mint, and Thyme should be cut, as these are always in demand. Growths without blossoms are the best. They should always be cut when quite dry, and if they are spread out in some airy place, but not exposed to the sun, it will be found they dry well and retain their colour. They should not be tied up until quite dry.

FRUIT FORCING.

MELONS.—*Late Fruit.*—If Melons are required very late a last sowing should now be made. Plants from this sowing will be fit to place out in about a month, and they will set their fruit in September, and the fruit will be ripe in November; therefore, it will be necessary to employ a light well heated structure for this crop, otherwise fruit of high quality will not be assured. Bottom heat will be necessary; therefore, if it is afforded by fermenting materials they must be thrown in a heap, turned, and watered, so as to secure the needful fermentation, and escape of rank steam.

October Fruit.—Melons are acceptable at dessert for shooting parties if only from a decorative point of view, some having a partiality for the aroma. The plants for this crop must be placed out at once, giving them about a couple of barrowfuls of soil each, made into a flattened cone or ridge, the soil being about 12 inches deep. Good loam, neither heavy nor light, is most suitable, and if not over fermenting material add a fifth of fresh horse manure and a sixth of old mortar rubbish. Make the compost very firm, and have it in a moist state before planting. Turn the plants out carefully, they having been watered overnight, so that the roots will come away freely from the sides of the pots and make the soil firm about the ball. Keep the stem slightly raised, and water to settle the soil about the roots. The plants must be encouraged to make a free growth by syringing at closing, and damping available surfaces in the morning and in the evening of hot days. Ventilate between 70° and 75° and keep the temperature through the day at those figures by artificial means, 85° to 90° from sun heat, and close so as to raise it to 95° or 100°. Through the night the temperature may fall to 65°.

Crops Swelling Off.—The plants must not be over-burdened with fruit. When the fruit is fairly swelling reduce the number to two on a weak plant, three on one moderately vigorous, and four on a strong plant. Very strong or large plants may be allowed to carry six fruits. Over-cropping is highly prejudicial to quality, and the fruit requires all the solidity that can be given it; therefore keep the growth fairly thin, all having full exposure to light. Earth up the plants, giving copious supplies of liquid manure, and damp available surfaces with liquid manure once or twice a week, but it is best to give it more frequently and weak. Stop laterals to one joint, and if this is likely to crowd them too much thin them. Place supports to the fruit in good time, and slanting so that water will not lodge upon them. Syringe from 3 to 4 P.M. or earlier, and raise the temperature to 95° or more. With due supplies of water at the roots shading will not be necessary, only the houses have the sun's north and south the sun will be so powerful in the afternoon on the west side that a slight shade becomes necessary.

Late Plants in Pits and Frames.—The latest plants are setting their fruit, it being important that the fruit be set at the close of July or early in August to allow time for its swelling and ripening. Give a good watering before the flowers open, and line the sides of the frame and bed with hot dung or the mowings of lawns, and give a little ventilation constantly at the top (so as to prevent the deposition of moisture on the blossoms) until the fruit is set and commences swelling. Impregnate the blossoms daily, and when a sufficient number of fruits are obtained on a plant on about an equal age remove all flowers and keep the growths well stopped, maintaining a warm moist but not stagnant atmosphere by early closing with sun heat, sprinkle overhead on fine afternoons, and affording water in bright weather about twice a week.

Fruit Ripening.—Keep the atmosphere dry, and a top heat of 70° to 75° by artificial means, admitting a little air constantly, a free circulation of a hot dry warm air greatly improving the quality and finish when the fruit is ripening. Water should be withheld from the house until there is fruit advancing in swelling, when an occasional damping will be necessary for the benefit of the foliage.

PEACHES AND NECTARINES.—*Early Houses.*—If possible, remove the roof lights so as to expose the trees to the refreshing influences of the atmosphere, rain having a particularly cleansing effect, and the borders with the late summer rains get thoroughly moistened, the buds

in consequence plump well, and are not likely to be cast, besides complete rest is assured.

Second Early Houses.—The fruit is now cleared off the trees. The wood on which it has been borne this season should be cut away to the shoots, trained in from the base, except they are extensions, and if there is more wood than will be needed for next year's fruiting, or the due furnishing of the trees, cut it away so as to let in light and air to those that remain, and admit of the better application of water for the cleansing of the foliage of red spider by means of the syringe or engine. Ventilate freely day and night, and keep the inside borders well watered. Weakly trees must have liquid manure, and over-luxuriant trees must have the roots pruned when the trees have completed their growth and the foliage is getting mature. They should also be kept rather warm in the daytime, and the ventilators thrown open at night.

Fruit Ripening.—Keep water from the fruit, but maintain a moderate amount of moisture by damping available surfaces occasionally, and do not allow the trees to become dry at their roots. Keep the leaves clear of the fruit, and place some soft netting beneath the trees, and looped up so that the fruit will not damage each other in falling. This is an old but lazy practice. The better plan is to look over the trees every morning for ripe fruit, and remove it carefully, keeping it in a cool airy fruit room. When dead ripe the fruit is soon damaged, and is not nearly equal in flavour to that gathered at the right time.

Succession Houses.—Every needful attention must be given to syringing to keep off red spider, and the inside borders must be well watered and mulched, also outside borders if the rainfall be inadequate. The shoots must be regularly tied in, and to assist the colouring and ripening of the fruits they should be exposed as much as possible to the influence of the sun and air by shortening the foliage overhanging it. When the fruit is on the under side of the trellis the shoots may be untied and regulated so as to bring the apex to the light, supporting the fruit by thin laths placed across the wires of the trellis.

Latest Houses.—Syringe morning and afternoon on fine days. Water the inside borders once a week, and mulch with short manure. The outside borders must not lack moisture. Feed weakly trees with liquid manure, but not those having a tendency to over-luxuriate. Tie in the shoots regularly, and keep them rather thin. Stop gross shoots so as to equalise the sap, or remove them altogether. When the fruit is swelling after stoning close the houses somewhat early in the afternoon, so as to run up to 85° or 90°, and admit a little air at the top of the house before nightfall. Admit air early, and increase it with the sun's power, and reduce in like manner, keeping at 80° to 85° through the day from sun heat.

THE BEE-KEEPER.

NOTES ON BEES.

Nor until the 17th of July did we experience genial weather, which was the first good honey-gathering day of the season, and in fact the first one we could get to advantage to divide several stocks into nuclei with safety and success. That was just the kind of day to manipulate, when several hives queens were piping and others swarming—a rather common occurrence this season with stocks not intended to swarm. The hitherto barren season and scarcity of honey had encouraged more breeding than would have been had the honey been more plentiful, which as a rule induces the bees to swarm more readily than when honey is abundant. With the matured queens and advanced worker brood of our pure stocks I should have managed very well to have formed sufficient nuclei for my purpose, and with the assistance of frames of brood and young bees from swarmed stocks after the royal cells in formation had been excised I have more young queens than are required for my purpose. Many of these nuclei are strong, and will without further assistance, if the weather be favourable, gather surplus honey.

During the time of manipulation all went well. Not a bee was killed nor was there any stinging, but one remarkable incident occurred. One of the hives had been preparing for swarming before I began manipulation, and after all was finished and without the slightest appearance of commotion or swarming one appeared amongst the trees, doubtless made up by the bees from all the nuclei along with the queen that had intended to swarm first, thus proving that the bees do pre-arrange those that are to leave; confirmed by the fact, too, that although the old stock is removed a distance in order to strengthen the swarm, the bees of the former will not join the latter as wanted, but will persistently refuse to seek the old stock and enter it, and hum briskly to attract

the rest of the bees to their old home. I know that this trait in the character of bees is disbelieved by some, but let those who wish to test the matter try the experiment.

QUEEN INTRODUCTION.

A pure Carniolian was hived about three weeks before the date of the foregoing manipulations, but the queen was so large and heavy she could not fly. It had made several attempts to swarm with the same result, the bees returning and the queen creeping from the ground into the hive. I removed the supers, excised all the royal cells, and ventilated. This had the desired effect, preventing further inclination to swarm. From the appearance of the queen, along with the great number of eggs in the hive, I thought her perfectly healthy. Still, I am quite convinced that the bees are better judges in that respect than we can be, and I had my dread, so I gave the hive a royal cell, and in a short time after the old queen was deposed.

Already this year many queens not more than eleven months old have been deposed and young ones reign in their stead. If bee-keepers would only become impressed by the great importance of having young queens at the head of all their stocks, and follow it up, they would be astonished with the results and extra profits; and if teachers of bee-husbandry would refrain from writing on the marking and mutilating queens' wings for four or five years, they would be doing good service towards the advancement of sensible and profitable bee-keeping, instead of being the direct means of causing disaster amongst the hives of those who receive their instruction. Equally bad in its consequences is removing queens for the supposed purpose of causing bees to collect more honey. Bees never work better than when the hive is in a normal state with a young queen at its head. This subject requires all the attention bee-keepers can give to it. It is, therefore, an opportune time for the discussion of queen introduction. When writing and advising beginners on any subject connected with bees, I describe a plan with the least risk, and which is most likely to succeed, refraining at all times from advising anything that is likely to lead to disaster. It is, therefore, not for the want of knowledge I am silent, but for the reasons mentioned above. I have been prompted to enlarge upon queen introduction through the remarks of "A Surreyshire Bee-keeper," page 56, where he alludes to Mr. Abbott and his plan of introducing queens successfully to hives having eggs. I have had much longer experience in introducing queens than that gentleman has had, therefore I warn your readers against adopting his plan as stated by "A. S. B. K."

It was the late Mr. T. W. Woodbury's frank admission of failures that was the means of advancing bee-husbandry so much during the short time that gentleman wrote on bee-husbandry in this Journal. It is because of failure that I possess the knowledge to guide others. I am perfectly cognisant of many cases where the novice acted in the most stupid and risky manner in the introduction of queens, yet was successful. I remember well the rejoinder an apprentice gave to his master when the latter pulled to pieces an article of furniture the former had put together in a defective manner. It was in the following words:—"Had you not committed a similar blunder, you would not have known where to look for mine."

When the Ligurian bee was introduced I was £25 out of pocket before I got one to succeed. The first one I had from Mr. J. Swan of Dunse, it was simply a mongrel, not a pure queen; but he refused to give me the slightest satisfaction, not even answering a single letter—five guineas lost! I put the queen to a stock two days queenless, yet she was deposed. My second one, another five guineas, this time a swarm I put in a hive containing brood and eggs; there was also a queen cell newly commenced, which I did not destroy. It was brought forward, duly hatched, and my Ligurian queen was deposed. I killed the young one, and raised a number of young queens, two of which were purely

fertilised. I had them removed to a distance near Ligurian drones, and after a month brought them home still virgins. The weather had been stormy the most of the time. It was in the afternoon of a warm day in August when I arrived at home with them. There were not many common drones, and these were past flying for the day, and two were fertilised pure. This was, however, at the time when foul brood made such a scourge in my apiary, and before any Italian bees were introduced, so they fell victims to the scourge. A third one met with an accident, over which I had no control, so I had to procure a fourth, but immediately after I had large supplies at a cheap rate from Messrs. Neighbour.

I now gained much experience in introducing queens, and soon learned that successful introduction could not be depended upon if larvæ or eggs were in the hive. It was about this time that Mr. Woodbury wrote advising bee-keepers rather to get a swarm with a queen than risk a queen to be joined to a hive of bees by the novice. Queen cages then become a necessity, the pipe-cover was called into requisition, and Mr. Ferguson of Stewarton and a Mauchline bee-keeper described what an efficient cage should be like. These gentlemen's ideas were the same, and the plan of the cage was identical with what is termed the "Raynor queen cage." I have not the number of the Journal containing the description, but I remember it well. Then we have the "Renfrewshire Bee-keeper's" cage of a like sort, also in use long before we heard of the "Raynor."

After the Ligurian queens became cheaper and more plentiful many complaints reached me that what they had were either crosses or only a common black queen. This I denied. In all honour to the foreigner I never knew of a black or crossed queen coming into my possession until lately I received some Italians, half Cyprians. Once or twice I had a greyish bee, not unlike the Carniolians, void of stripes, but having otherwise all the characteristics of the Ligurian bee. It was easy to explain how the Ligurian queens were supposed to be only crosses or the common black bee. Those who received the genuine Ligurian queens, like Mr. Abbott, had not acquired the knowledge how bees receive and treat stranger queens. We all know that the reigning queen must first be deposed before introducing another. But every one does not know that in certain cases it is not necessary to depose the reigning queen. If the bees are beginning to be dissatisfied with their reigning monarch a queen may be introduced without any danger of her being killed. Just the same as in the case described above with queen cell bees treat queen-cells and queens very much alike. We do not know the time when a queen will be accepted, but I have experienced cases of the kind often.

It is a fact, too, that queens may be well received at first, yet after she begins to lay queen-cells will be raised, and in due course she will be deposed. The same thing occurs if eggs are in the hive when she is introduced, hence the reason that the superseding queen turns out either a cross or pure black, and why valuable queens should not be introduced to hives where eggs or larva are present. If a queen is introduced to a hive having eggs or larva, the hive should be examined eight days thereafter.

Queens have, in addition to their functions and station in life, the same nature as the worker bees, subject like them to excitement, fear, and anger, which, if present when liberated, either causes the bees to attack her, or if she escapes leaves the hive. Young bees that never were near a queen, one may be given to them with perfect safety at any time.

Old bees must first know their loss before introducing an alien, but as it is their instinct to start royal cells when they have the opportunity they will depose the reigning one the moment the young one is hatched, if not earlier. Therefore do not risk any queen in a hive having eggs or larvæ. Notwithstanding the natural instinct of bees to do that they sometimes permit a stranger queen to enter the hive and allow her to live unmolested for many months.

Bees remember their old site or entrance for more than a month, and no doubt would recognise their own queen if presented to them many days after having been deprived of her. I have witnessed bees searching for their killed queen when placed 50 yards from their hive. Bees are sometimes very hostile to alien queens for a long time, doing this perhaps in the hopes of their own appearing again. I have often quailed the bees on the attack of a stranger, and soothed their temper by introducing their own queen in a dead state at the same time I set the alien at liberty amongst them. I never knew this to fail, and it insured the safety of the alien queen. I have seen so many instances of reckless, yet successful introduction of queens, that I feel certain that lessons from failures as to the introduction of queens will be of more service to those requiring hints than if I was to mislead by recording successful introduction in cases I did not approve of in the manner it was done.

BEES BUILDING COMBS IN AN ISOLATED HIVE.

I have it on record where a hive of bees belonging to me stored honey at the time of a glut in combs 4 feet from the tenanted hive, and "R. S." the same year had a beautiful bellglass filled under similar circumstances. It is a common occurrence for bees to clean out and dress up old combs in isolated hives before swarming. But this year a gentleman at Port Glasgow had a hive, the bees of which frequented an empty hive standing a good distance from the other, and actually built combs in it before it swarmed, after which they took possession of it. This looks more like reason than instinct.

PREPARING FOR THE MOORS.

My hives are now mostly in capital order for gathering surplus honey at home, and, being supplied with young queens, will be extra when set down at the Heather. The precautions to be observed to prevent mishaps are—I shall prepare them some days previous to departure with them, and have their external appearance the same as they will be when released. If this is not attended to many bees, and perhaps queens too, will be lost when set down at the Heather. So I will guard against that, and keep the external appearance of every hive the same as it was at home.

The Clover season will be past here about the end of July. The weather has been extremely changeable, with high and low temperatures, neither of which is good for honey secretion. The only days they have got in the honey season was on the 17th and 18th July. Yet for all that to-day (19th) I had a crossed Cyprian swarm, three weeks swarmed, which weighed—bees, combs, and their contents—65 lbs., which is at least double that any other variety has made during the same time.

Being unable to attend to my bees properly, about two weeks ago a huge swarm issued from a Syrian stock. Not expecting it, and not having a hive ready for its reception, I threw it back; but it has remained comparatively idle ever since. It is a rule that after bees prepare for swarming they discontinue working.

While tiered hives are undoubtedly the largest producers, still it is a loss to attempt frustrating the swarming mania, and as swarms always work best we should take them the first opportunity, and make the most of them.—A LANARKSHIRE BEE-KEEPER.

QUEEN INTRODUCTION.

It may be interesting to your readers to learn the result of my first attempt at queen introduction, the method adopted being that recommended (No. 1) by Mr. Simmins. I had two stocks from which swarms had issued on the 1st and 2nd inst. respectively, and on the 9th I cut out all the queen cells I could find; I again examined them on the 12th, and found they had started others, these I also destroyed. On the morning of the 15th I received two Ligurian queens, and at 10 P.M., by lamp light, I raised one corner of the quilt, and using only sufficient smoke to keep the bees down, I allowed a queen to run down into each hive. I did not again disturb them until 11 A.M. on the 19th, when I found I had been completely successful in both cases. Perhaps other bee-keepers will give Mr. Simmins' method a fair trial.—T. MOSS.



* * All correspondence should be directed either to "THE EDITOR" or to "THE PUBLISHER." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

TO CORRESPONDENTS.—We desire to assure those of our correspondents whose letters and communications are not promptly inserted that they are not the less appreciated on that account. Our pages are practically filled several days prior to publication, and letters arriving on Wednesday morning, except by special arrangement, are invariably too late for insertion. The delay in the publication of some of these is not of material importance, but reports of meetings and shows held a week previously lose much or all of their value if not received in time to appear in the current issue.

Seedling Gloxinia (*T. W.*).—The flowers sent are pretty, and the variety is worth keeping, but there are many others in cultivation equally as good.

Dwarf Kidney Beans (*M. A. B.*).—You need have no fear of the Scarlet Runners in an adjoining garden affecting the purity of the seed of the variety you wish to preserve.

Exhibiting Roses (*Chester Subscriber*).—The remark of our correspondent had no doubt reference to the probability of the exhibitor to whom you refer taking more prizes for Roses. We believe he has taken prizes since the remark was published, and if you look down page 118 of the same volume to which you direct our attention you will find a record of some of them. See also report of Wirral Show in the present issue.

Bran as Manure (*Pen and Ink*).—No doubt bran possesses manurial properties, and we can quite understand it would be good for Potatoes in strong land, spreading it in the drills with the sets; but at the same time we should not think of purchasing it for that purpose, as we could spend our money better on kiln dust for spreading in with Potatoes in the same way—a large handful to every 5 or 6 yards of the trench.

Mushroom (*A Subscriber*).—The specimen you have sent is *Agaricus arvensis*, the Horse Mushroom. Cooked just in the stage of the one before us—that is, just after the veil has broken from the pileus, and before the gills change colour, they are safe to eat, but should not be eaten in button form, nor when quite expanded and getting old. They are good for ketchup.

Peaches Falling (*W. A.*).—The stone of the ripe fruit sent is very defective, and sufficient to account for the fruit falling from the tree. It may be the result of imperfect fertilisation, also of a deficiency of calcareous matter in the border. The tree would probably be benefited by raising the roots and placing them in good loam to which a tenth part of lime rubbish is added, making the border firm, and surfacing with manure for keeping it moist in the summer, and inciting the production of surface roots.

Tarragon (*R. P. & Sons*).—The plants you have sent are Tarragon. To have plants possessing the full flavour of the herb they should always be raised by division. The plants flower freely, but seed seldom, and when plants are raised from seed they are practically flavourless, in their young stages at least; whether they eventually possess the desired property we do not know, but this you can ascertain. When the leaves of the plants you have sent are slightly dried or withered the Tarragon flavour is apparent.

Nectarine Tree Unhealthy (*W. T.*).—The leaves of your tree are yellow because they are not sufficiently nourished, the sap vessels of the stock are contracted, and probably the roots are not working freely in good soil. If you wind a thick hayband round the contracted part of the stem, and keep it moist, it will do good, and you would do well also to carefully place the roots in good loamy soil in the autumn, not letting them get dry during the process of lifting, and removing the requisite portion of the old border. A liberal application of liquid manure might benefit the tree now.

Water Lilies (*A. C.*).—*Nymphaea odorata*, which has flowers rather larger than the common white Water Lily *N. alba*, is hardy in the southern districts of England, and the blooms have a reddish tinge, but the variety *rosea* is much more deeply coloured though the flowers are smaller. It is a native of North America, and could be procured from nurserymen who make a specialty of hardy plants. Your other questions are too indefinite, but *Todea superba*, *Trichomanes trichodeum*, and *Hymenophyllum hirsutum* are favourites with most Fern lovers.

Tomatoes (*Cambridge*).—Take off the growths that spring from the fruit bunches at once. They are the result of vigour of the plants. If fruit does not set on bunches from the main stems let a few trusses form on laterals, pinching the growths immediately beyond them. When six or eight trusses of fruit set top the plants and suppress all subsequent lateral

growths; indeed, some of the large leaves may be shortened, not all at once, but by degrees if they are very large and quite overshadow the fruit. Some of the large leaves below the fruit may also be shortened, a few at a time, so as not to give a check to the flow of sap for supporting the crop.

Datura suaveolens (*S. A.*).—This, no doubt, is the plant to which you refer. It grows well in rich fibrous loam with a little sand, wood ashes, or gritty matter intermixed to render it porous. It should be potted firmly and syringed frequently to keep down red spider, and is benefited by being stood outside in the summer in a rather shaded place at first to prevent the sun scorching the foliage, and eventually in the full sun to ripen the growth, but the leaves must not flag by an insufficiency of water at the roots. The pot should be shaded. Gradually reduce the supply of water towards the autumn, and keep the soil rather dry than wet in the winter.

Cucumbers for Market (*A Young Beginner*).—All we can do to advise you to adopt a different system of management in future, as it is clear you cannot grow Cucumbers on the non-ventilating plan, though others may do so. It is not a safe plan for "beginners," nor is it equally adaptable for all houses and districts. You cannot do better than consult the "Work for the Week" pages in back numbers of this Journal, and you will find sound advice on Cucumber culture and management about every fortnight. Weak liquid manure is very good for Cucumbers when they are bearing freely, and they should be encouraged to produce fresh roots by periodical top-dressings of rough rich soil.

Destroying Queen Wasps (*James Watts*).—You are quite right in supposing that all wasps appearing in spring are queens, which would, if no accident occurred to them, produce a similar number of nests. The number of young wasps produced, however, appears to depend very much on the weather experienced during the month of May. Wasps were exceedingly numerous during the early part of this year, but owing to the weather being very wet at the time they generally commence building the chances are that they will not be proportionately abundant during the summer. The plan of offering prizes or otherwise paying for queens collected is a good one, and if generally acted on would keep down these disagreeable insects considerably.

Plum Trees on North Wall (*A Young Gardener*).—Train in all the growths that will be required for furnishing the trees their full length, and stop all others to within three joints or leaves of their base. They should be trained so as to cover the wall with the branches about 9 inches apart, not nearer, and they need not exceed 12 inches. If the side growths break after being once stopped pinch them again at the first joint of growth, and repeatedly through the summer. In the autumn they may be cut back to a couple of buds, or an inch or so of their bases, but the main shoots need not be shortened unless it be necessary to originate other shoots, when they should be cut back accordingly. Depressed or brought into their proper position they will no doubt give sufficient shoots for furnishing the space without cutting back, and form fruit buds on short stubby growths throughout their length by pinching those not required for space-filling at the third joint.

Difference of Growth and Bloom of Roses (*Bolton*).—We think the difference is due in some degree to soil, and in part also to climate. We find a great difference both in the growth and flowers of the same varieties in the same garden. In soil that is light and rich the growth is strong and the buds large, also the flowers, but they have not nearly the same substance of petal, nor nearly so full and lasting as those grown where the soil had the addition of a third of clay or marl in making the beds, the Roses in this making sturdier, shorter jointed wood, with much finer and cleaner foliage. We think the soil of your friend's garden is better suited for Roses than yours, and the climate may also be better for Roses. We do not know of any other cause likely to influence the Roses in the way you describe. Give them a stronger soil with rich surface dressings, more particularly those containing potash and lime.

Tomatoes not Setting (*R. S. J.*).—Some varieties naturally set better than others. Excessive vigour and a damp atmosphere are impediments to the setting of the fruit. Growers for market keep the atmosphere of their Tomato houses dry, and give only sufficient water to prevent the plants flagging till a good number of the flower trusses are set, then give water freely to support the fruit. There is nothing antagonistic in this to the practice described by our correspondent of syringing the plants now and then when in flower, as we can quite understand that a good dash with a syringe when the air of the house is dry would conduce to the setting of the fruit by dispersing of the pollen. Some cultivators syringe the bunches of Muscat Grapes when flowering with the same object. Tomatoes grown in pots often set better than plants that are growing luxuriantly in beds of rich soil. We suspect you have given your plants too much water, and they have in consequence grown too luxuriantly.

Figs Failing (*Cranfordian*).—The Figs sent are abortive. They are in that condition known as flowering, when the fruit opens at its apex or eye for the admission of air to the organs of fructification. The most probable cause of the condition of the fruit is excessive luxuriance of the tree. This is fatal to seeding, and is analogous to stoning in Peaches, &c. The only remedy is to diminish the vigour of the tree, or give it more heat with corresponding air, so as to secure the better elaboration of the sap and its consequent assimilation. As the tree is in a cool house we should keep the growths thin, in order that air and light may have free access, and in autumn cut the roots about 2 feet from the stem and quite down to the bottom of the border. This, if done early in October, will check late growth, the wood then having a better chance of ripening. The soil removed should be returned and made firm. In case the roots have the run of a wide border it would be the best plan to lift the tree in autumn so soon as the leaves turn yellow, and, taking out the soil, put in a wall so as to confine the roots to a space of not more than 3 feet wide and double the length, or 6 feet, putting in a foot of drainage and 30 inches depth of compost, which should consist of good turfy loam of medium texture, adding a fifth of old mortar rubbish and a sixth of road scrapings thoroughly incorporated. In this lay the roots near the surface and make the soil firm. This will induce a sturdy short-jointed growth, and with plenty of light and air the wood will be thoroughly solidified as made, and fruitful. Mulching and feeding will be necessary during growth. Nothing

will save the present crop. A 4½-inch wall will be sufficient for confining the roots.

Names of Fruits.—The names and addresses of senders of fruit to be named must in all cases be enclosed with the specimens, whether letters referring to the fruit are sent by post or not. The names are not necessarily required for publication, initials sufficing for that. Only six specimens can be named at once, and surplus fruits beyond that number cannot be preserved. (*W. R., Wimbledon*).—The Strawberries, in consequence of being loosely packed in a large box, were smashed into jam by shaking in transit, and we can only say the leaf resembles Dr. Hogg. (*Thomas Joyce*).—5, Vicar of Winkfield; 7, Duchesse d'Angoulême; 8, Beurre d'Arenberg; 11, Nouveau Poiteau; 18, Jargonelle; 27, Van Mons Léon Le Clerc.

Names of Plants.—We only undertake to name species of plants, not varieties that have originated from seed and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in firm boxes. Slightly damp moss or soft green leaves form the best packing, dry cotton wool the worst. Not more than six specimens can be named at once. (*Miss Barnes*).—Your plant is a *Clanthus*, probably *C. puniceus*. It is a greenhouse plant, but grows well in a frame in the summer. If it is kept in a house it should be syringed well occasionally, as it is liable to be attacked with red spider. (*J. Beadle*).—1, *Phytolacca decandra*; 2, *Stachys lanata*; 3, *Aloe speciosa*; 4, *Adiantum pubescens*. (*J. L.*).—The specimen sent is a poor one, but it resembles *Melampyrum pratense*, the Yellow Cow Wheat.

Driving Bees (*Alpha*).—Your letter, with "A Lanarkshire Bee-keeper's" reply to it, will be published in an early issue of this Journal.

COVENT GARDEN MARKET.—JULY 28TH.

HEAVY supplies reaching us, and, with business dull, prices are lower.

FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples	½ sieve	0 0 to 0 0	Melon	each	1 0 to 2 0
Cherries	½ sieve	2 0 4 0	Oranges	100	6 0 12 0
Currants, Black ..	½ sieve	2 3 2 6	Peaches	per doz.	4 0 10 0
" Red	½ sieve	2 6 0 0	Pine Apples English ..	lb.	2 0 3 0
Figs	dozen	1 6 2 0	Plums	½ sieve	0 0 0 0
Grapes	lb.	1 0 3 0	St. Michael Pines ..	each	4 0 6 0
Lemons	case	10 0 15 0	Strawberries	per lb.	0 6 1 0

VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Artichokes	dozen	1 0 to 0 0	Lettuce	dozen	1 0 to 1 6
Asparagus	bundle	0 0 0 0	Mushrooms	punnet	0 6 1 0
Beans, Kidney ..	lb.	0 3 0 0	Mustard and Cress punnet		0 2 0 0
Beet, Red	dozen	1 0 2 0	Onions	bunch	0 3 0 0
Broccoli	bundle	0 0 0 0	Parsley	dozen bunches	2 0 3 6
Brussels Sprouts ..	½ sieve	0 0 0 0	Parsnips	dozen	1 0 2 0
Cabbage	dozen	1 6 0 0	Potatoes	cwt.	4 0 5 0
Capsicums	100	1 6 2 0	" Kidney	cwt.	4 6 5 0
Carrots	bunch	0 6 0 0	Rhubarb	bundle	0 2 0 0
Cauliflowers	dozen	3 0 4 0	Salsify	bundle	1 0 1 6
Celery	bundle	1 6 2 0	Scorzoneria	bundle	1 6 0 0
Coleworts	doz. bunches	2 0 4 0	Seakale	per basket	0 0 0 0
Cucumbers	each	0 3 0 6	Shallots	lb.	0 3 0 0
Endive	dozen	1 0 2 0	Spinach	bushel	3 0 4 0
Herbs	bunch	0 2 0 0	Tomatoes	lb.	0 4 0 6
Leeks	bunch	0 3 0 4	Turnips	bunch	0 4 0 6

PLANTS IN POTS.

	s. d.	s. d.		s. d.	s. d.
Aralia Sieboldi ..	dozen	9 0 to 13 0	Ficus elastica ..	each	1 6 to 7 0
Arbor vitæ (golden)	dozen	0 0 0 0	Finchia	per dozen	4 0 9 0
" (common)	dozen	6 0 12 0	Foliage Plants, var.	each	2 0 10 0
Arum Lilies	dozen	0 0 0 0	Hellotrope	per dozen	4 0 8 0
Bedding Plants, var.	doz.	1 0 2 0	Hydrangea	per dozen	6 0 12 0
Begonias	dozen	6 0 9 0	Ivy Geraniums ..	per dozen	3 0 6 0
Calceolaria	per dozen	4 0 9 0	Lilium anatum ..	per doz.	24 0 60 0
Cineraria	dozen	0 0 0 0	" lanceifolium ..	per doz.	9 0 18 0
Cockscombs	per dozen	4 0 6 0	" longiflorum ..	per doz.	18 0 30 0
Crassula	per dozen	12 0 24 0	Lobelia	per dozen	3 0 4 0
Cyperus	dozen	4 0 12 0	Marguerite Daisy ..	dozen	6 0 9 0
Dracæna terminalis,	dozen	30 0 60 0	Mignonne	per dozen	3 0 6 0
" viridis	dozen	12 0 24 0	Musk	per dozen	2 0 4 0
Erica, various	dozen	12 0 24 0	Myrtles	dozen	6 0 12 0
Euonymus, in var.	dozen	6 0 18 0	Palms, in var. ..	each	2 6 21 0
Evergreens, in var.	dozen	6 0 24 0	Pelargoniums, scarlet, doz.		3 0 6 0
Ferns, in variety ..	dozen	4 0 18 0	Pelargoniums	per dozen	6 0 15 0

CUT FLOWERS.

	s. d.	s. d.		s. d.	s. d.
Abutilons	12 bunches	2 0 to 4 0	Lily of the Valley, 12 sprays		0 0 to 0 0
Arum Lilies	12 blooms	4 0 6 0	Marguerites	12 bunches	3 0 6 0
Asters	doz. blooms	0 6 0 9	Mignonne	12 bunches	1 6 4 0
Azalea	12 sprays	0 0 0 0	Myosotis	12 bunches	2 0 3 0
Bouvardias	per bunch	0 6 1 0	Pelargoniums, per 12 trusses		0 9 1 0
Camellias	12 blooms	0 0 0 0	" scarlet, 12 trusses		0 3 0 6
Carnations	12 blooms	1 0 3 0	Roses	12 bunches	2 0 9 0
" 12 bunches		3 0 6 0	" (ladour), per dozen		0 6 2 0
Chrysanthemums 12 blooms		0 0 0 0	" Tea	per dozen	0 9 1 0
Cornflower	12 bunches	1 6 3 0	" red	dozen	1 0 2 0
Cowslips	doz. bunches	0 0 0 0	" Moss	12 bunches	9 0 12 0
Daffodils	12 bunches	0 0 0 0	Primroses, Yellow, dozen		0 0 0 0
Epiphyllum	doz. blooms	0 0 0 0	" dozen bunches ..		0 0 0 0
Encharis	per dozen	2 0 4 0	Pyrethrum	12 bunches	4 0 9 0
Gardenias	12 blooms	2 0 4 0	Spiræa	12 sprays	0 0 0 0
Hellebore	doz. blooms	0 0 0 0	Stephanotis	12 sprays	2 0 3 0
Hyacinths, Roman, 12 sprays		0 0 0 0	Stocks, various 12 bunches		3 0 5 0
Iris	12 bunches	0 0 0 0	" Sniffers		0 6 1 0
Lapageria, white, 12 blooms		0 0 0 0	Sweet Pea	12 bunches	2 0 4 0
Lapageria, red	12 blooms	1 0 2 0	Sweet Sultan	12 bunches	3 0 4 0
Lavender	dozen bunches	4 0 7 0	Tropæolum	12 bunches	0 0 0 0
Lilium candidum 12 blms.		0 6 1 0	Tuberose	12 blooms	0 6 1 0
" 12 bches. 24		0 30 0	Violets	12 bunches	0 0 0 0
" longiflorum, 12 blms.		3 0 6 0	" Czar, Fr., ..	bunch	0 0 0 0



FARMED OUT.

"ALL the farms in our parish are in hand, and we are losing money upon them every year," said an estate agent to us, and he evidently by his manner intended to imply that the loss was inevitable, that it was impossible to prevent it while farm produce was so cheap. Without presuming to question the wisdom of submission to the inevitable, we certainly do claim a right to inquire whether in our own practice such losses may not be reduced and gradually be avoided. We may go further than this, and assert that farms thrown upon the landlords' hands farmed-out, may be brought into condition again and rendered profitable by judicious treatment, if a reasonable amount of capital be applied to the work of reclamation. Advisedly do we say that the work should be done gradually rather than hastily, step by step, year by year, only taking especial care to effect real improvements each season.

It is by no means intended to infer that a radical change may not be effected in a single season, and there are doubtless circumstances in which such a course would be best, as, for example, in the case of a single farm falling upon the landlord's hands. But having regard to the present general reduction of rent, and the consequent diminution of the landlord's income, it would be unwise—even rash—to recommend an expenditure of money upon which the return might be rendered more than doubtful by bad weather. Yet it is well to know what may be done in a single season to land farmed-out, foul with weeds, badly drained, and altogether in a foul, wet, poverty-stricken condition. If the land could be had now, and it proved to be foul with perennial weed roots mingled with a growth of annuals, we should at once see if the surface could be pared and burnt. The late showery weather should have rendered paring possible, but it can hardly be done during a drought, for the surface is then usually so hard the paring share will not answer. For expeditious paring the three-shared implement exhibited by Howard of Bedford at the Norwich meeting of the Royal Agricultural Society appeared admirably adapted. After the paring the soil should be broken up, preferably by a steam cultivator, thrown up roughly and left fully exposed to sun and air. After a few weeks of such exposure, the clod crusher, cultivator, and harrows should enable the farm to get a fine seed bed for winter corn, but before that is sown due attention must be given to drainage. Pipe drains are, of course, preferable both for durability and efficiency. Bush drains though not so durable are equally efficient for a few years. We are using them to good purpose upon four of the farms which we have in hand, and we were only too glad to find materials for this work ready to our hands in the overgrown neglected hedges which we found upon these farms. In heavy land we would make them as close as from 4 to 6 yards apart, knowing as we do that the money so expended is a safe investment for a quick and profitable return, and not until wet land is so drained should we venture to begin storing it with fertility. Having regard, however, to the fact that drains could hardly now be made till after harvest, if the land is clean, it will be well to see what can be done to impart fertility to it by means of green crops.

Of such, White Mustard by its free germination and quick strong growth lends itself most readily to our purpose, if only showery weather can be had to give it a good start. When it is up and growing freely, if the weather is so unsettled that we may fairly reckon upon some showers, a hundredweight of nitrate of soda per acre will impart much

vigour to the Mustard, and we must take care and plough it in when the seed pods are well developed, but while they are still green. If this only can be managed we shall have gained a step in advance for another season, when the sowing and ploughing in of green crops should have no inconsiderable share in our work of storing the soil with fertility. Mustard, Clover, Tares, Coleseed, Rye, are all excellent green crops for ploughing in, and we should so reclaim a considerable proportion of the farm in order to avoid a heavy outlay upon chemical manures. A certain quantity of such manures must be had; be it our special care to see that they are genuine, that they are had separately from reliable sources, and mixed at the farm in due proportions to the requirements of the soil. If dealers in chemical manures would only cease to press their special mixtures upon farmers, and would supply genuine manures separately, it would be to the mutual advantage of buyer and seller. We are convinced that there is a wide field open to enterprising manure merchants in the direction we indicate, for if once they can gain the confidence of the farming world by selling at a low rate manures that render the soil so rich in fertility as to render crops more abundant and, therefore, more profitable, the demand for such manures would grow with our knowledge of their value.

WORK ON THE HOME FARM.

Mangolds have been gone over for the last time both with hand and horse hoes; Swedes and early White Turnips have been thinned, and the soil between the plants well stirred. Part of the Swedes thinned and hoed before the haying have made such rapid progress that the plants are twice the size of the remainder which we were obliged to leave unthinned till after the haymaking. We regret this unavoidable delay with this work, for we regard a good root crop as the crown and finish of our summer cropping. The recent rain has done much good to grass, corn and roots. We have a vigorous tender green aftermath upon the meadows, and so free a growth of green food that our hailiffs are crying out for more sheep than we can well afford to procure for them. Spring Oats have improved very much of late, Barley and Wheat too are all full of promise, so that even with low prices we hope to do something more than pay our way this year. Hedges are being clipped as men can be spared for the work, and we like to get through as much of it as we can before harvest. We regret to see such general negligence in the management of hedges at the present time among tenant farmers; it is a token of a want of means for such work, yet we question if any real saving will be effected in the end, for the work of setting a rough neglected hedge in order is so great that it costs almost as much as if it had been done in the ordinary way, and the appearance of the hedge is spoilt for some time.

The dairy cows are now kept out upon the meadows where hay was made. Living as they now do upon the fresh succulent growth of Grasses and Clover, the milk cannot possibly have any impure taint, and the butter is of a rich yellow colour with a delicious flavour. Now, therefore, is the best time for potting butter for winter use, care being taken to put it in glazed pots, and to fill each pot at once and not gradually. Fat calves are now cheaper perhaps than they have been for several years, really fine calves being sold in the markets at from 80s. to 90s. The whole of the sheep and lambs have now been dipped in Cooper's mixture.

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude, 111 feet.

DATE.	9 A.M.					IN THE DAY.					Rain
	Barome- ter at 32s and Sea Level	Hygrome- ter.		Direction of Wind.	Temp. of Soil at 1 foot.	Shade Tem- peratnre.		Radiation Temperatnre.			
		Dry.	Wet.			Max.	Min.	In sun.	On grass		
1886.	Inches.	deg.	deg.		deg.	deg.	deg.	deg.	In.		
Sunday	18	29.912	68.3	62.8	S.	61.0	81.3	56.2	120.8	51.8	
Monday	19	29.788	65.6	61.9	S.	62.4	71.9	58.8	119.2	54.4	
Tuesday	20	30.053	64.1	57.9	S.W.	62.0	76.3	53.4	121.7	50.7	
Wednesday ..	21	29.885	73.3	66.5	E.	62.2	86.4	57.6	133.4	51.6	
Thursday	22	29.847	68.4	60.2	S.W.	63.5	73.3	59.6	123.7	53.8	
Friday	23	29.757	63.8	57.9	S.	63.4	65.2	57.9	121.1	54.1	
Saturday	24	29.609	65.9	59.8	W.	62.3	70.4	57.3	124.4	54.3	
		29.836	67.1	61.0		62.4	75.0	57.3	117.9	53.0	
										0.718	

REMARKS.

18th.—Fine throughout, and hot in afternoon.
 19th.—Cloudy, with slight showers in morn; heavy showers in afternoon and evening.
 20th.—Dull early; fine bright day.
 21st.—Hot and rather close; occasional spots of rain.
 22nd.—Generally bright, but a few drops of rain.
 23rd.—Cloudy morning, showery afternoon, wet evening and night. Cooler.
 24th.—Generally fine, but dense clouds frequent.
 A variable week, but temperature on the whole above the average.—G. J. SYMONS.



COMING EVENTS

5	TH	
6	F	St. Ives (Hunts) Show
7	S	
8	SUN	7TH SUNDAY AFTER TRINITY.
9	M	Darlaston Show (two days)
10	TU	Royal Horticultural Society (Committees at 11 A.M.) Show of Plants.
11	W	

PREPARING FOR SPRING.

CAULIFLOWERS, CABBAGES, AND LETTUCES.

HALF the failures and disappointments that occur in gardens are the result of undue delay, forgetfulness, or procrastination, and may be traced to the time of commencing preparations a week or a fortnight too late. That may not appear a long period, and easy going or inexperienced persons fail to see the importance of the loss of a few days; but even that short time is momentous and much too precious to lose. Failures undoubtedly arise occasionally from too early action, but over-haste if perceived in time may be remedied by supplementary work. There is no such chance of rectifying errors of the opposite character, and if there is a doubt as to the exact time for commencing any operation in gardening it is always better to be a little too soon than too late. An instance of this may be cited to make the matter clear, while an example of the greater evil of being too late may also be adduced. Both pertain to what may be termed common crops, yet not on that account the less important.

A young gardener, in every respect a worthy man—competent in plant culture and the duties of his calling generally under glass—has recently taken charge of a very good garden. He is sensible of his shortcomings, for unfortunately he has not had much experience in kitchen gardening, and regrets that he has not made the most of such opportunities as were afforded him to acquire knowledge on this branch of his vocation. Knowing that Broccolis were over in the spring a considerable time before Cauliflowers were ready, he determined to reduce the blank next May by having Cauliflowers sooner; hence sowed his stock of seed for raising plants for passing the winter in frames on July 15th. That was an error, but remediable, and more seed will be sown during the present month, a little about the 15th, and the remainder about the 25th. No one knows which sowing will produce plants of the greatest service, as everything depends on the weather. If the autumn is mild and prolonged the earlier-sown plants will get too advanced before winter, and if this should be severe and long the plants will "button" after being put out in spring, if they live to be put out at all. The conditions that are unfavourable for the earlier plants will be favourable for the later, as with a genial autumn these will be quite large enough and be in good condition for planting from frames in the spring or wherever they may have been preserved through the winter. It is always a good plan to make two sowings of autumn Cauliflowers, at least so experience has taught me, and the young gardener will carry out the plan. As he appeared grateful for the hint afforded him its record may possibly be of service to others, apart from illustrating the point that it is better to be too early than too late.

He was told to plant out his July-sown Cauliflowers in good soil in a sheltered border, or where a little protection could be afforded from early frosts, and they might yet get

large enough to commence turning in just before winter; and in that case, if dug up and packed closely together in frames, or even in a convenient position in the open where freshly fallen leaves might be thrown over them on the approach of severe weather, they would very likely give a number of white close heads about the size of teacups in midwinter before his early Broccoli are ready for use. This is what I have found on several occasions with plants raised from a sowing made before the middle of July.

The example of the greater error of too late action also pertains to one of the most serviceable, even indispensable crops of the garden—Cabbages. He who fails in having a supply of spring Cabbages, and having them early, is to be pitied, for he will not have an enjoyable time in April and May after the winter greens are eaten, killed, or expanding their flowers on long tough shoots. In July, 1884, an industrious man having a large garden was desirous of making a little money. He was advised to grow amongst other things a good plot of Ellam's Early Cabbage, and to sow the seed during the second week in July. He did sow then, and was laughed at by his neighbours on the ground that all the plants would "bolt." The gardener at the Hall joined in the chorus; but before he was many months older he was glad to give the grower 2d. each for small plump Cabbages for a month, until his month-later-sown and later sorts were ready for cutting. This fine early breadth of a thousand plants was very profitable, as there were no other Cabbages ready within miles of them, hence they were readily sold, and as they were grown only a little more than a foot apart in rows 18 inches asunder they did not occupy much ground, and this was vacated in time for cropping with Scarlet Runners. It is too late for sowing to insure a similarly early crop, but yet while there is time let seed be sown of approved varieties, and let no one fear they are sowing too early.

Equally valuable in its way is an abundant and early supply of Lettuces in spring from autumn-sown plants. It is a calamity to have to wait for Lettuces from spring-sown seed. Half the summer is over before they are ready. Sweet crisp Lettuces are never more welcome than in April and May, and they can be had then by sowing in August and growing as many plants as possible close to walls or fences with a southerly aspect; failing such shelter something can be done, even a great deal, by throwing up soil so as to form a bank having a sharp slope to the south. This is well worth doing when there are no walls and Lettuces are wanted early, as they are by most families.

About the 15th of the month is a good time for sowing for transplanting, sowing again towards the end of the month or the beginning of September for remaining in the seed beds till spring. I have known the earlier plants killed while the latter survived, simply because these were covered with snow, while the others were not, but ought to have been, by a few hours' work bestowed in time when the snow was light and dry. If the larger plants survive, as they may be expected to do, they will be of great service, and the smaller will form a natural succession, not much less valuable in turn, for it is not altogether pleasant to have a blank of three weeks after the first few early salads have been enjoyed. The two best Cos Lettuces for sowing in August are Hicks' Hardy Bath Cos, and Old Black-seeded Brown Cos, the former generally being ready for cutting first if both pass the winter equally well, though it is not more hardy than the latter; indeed, if I were limited to one of them I should rely on the old favourite. Of Cabbage varieties the Hardy Hammersmith, Tom Thumb, and the Early Paris Market are all good, and any or all may be grown. So long as families are supplied with early spring salads they do not trouble much about the names of Lettuces.

For insuring a continuance and a certain succession after the August and September-raised Lettuces are over and preventing a break in the supply which often occurs then, and

an awkward one it is, seed of one of the white Cos varieties should be sown in a frame in October on soil raised to within 3 inches of the glass by a firm bed of leaves. These plants being properly thinned, drip prevented, and the requisite protection afforded in severe weather, the lights drawn off when the days are mild, will be ready for planting on the departure of winter. This is one of the staple crops of the London market gardeners, and is often of great value to them, and is not less acceptable to owners of private gardens. A little attentive care is necessary for preserving the plants and preparing them for removal, but they are more than worth it all.

A word as to the hardiness of Lettuces and other plants. This depends as much on the treatment to which they are subjected as on the varieties. A golden rule in preparing plants for the winter, no matter what they are—Cauliflowers, Cabbage, Lettuces, Spinach—is to sow very thinly in firm soil from which water passes quickly, in a very open position. I would, if choice were afforded, much prefer the middle of a fifty-acre field to a warm south border for raising the plants. In the ordinary course of sowing, about ten seedlings spring up on every square inch of the bed, and not infrequently twice that number. Let it be clearly understood that that practice is wrong. It is thoughtless, ruinous, and wasteful to throw down the seed so recklessly. One plant to each square inch is ample, and if more appear they should be drawn out the moment they can be handled. A rule easy to be remembered is this, Never allow plants in preparation for winter and spring to touch each other till they are nearly ready for use; then will their tissues be so firm that they will resist five times the amount of frost that crowded plants will that are thereby made flabby, soft, and tender. Undue delay in thinning plants that come up too thickly is a fatal mistake, and in this work especially there is no fear of commencing too early, but great danger in being too late.—*EXPERIENTIA DOCET.*

GRAPES FOR LATEST SUPPLIES.

THERE is a notion among some amateur cultivators and others that when they desire to keep Grapes late in the season they should be ripened late in the autumn, and if fairly well coloured they are matured and prepared to remain in good condition till, say, April. No one underrates the very desirable property of good colour in Grapes, but that may be present while flavour and keeping qualities are absent. One who has frequently judged late Grapes is very cognisant of acidity being objectionally present when colour may be at its best.

It used to be considered the fault of the system of keeping Grapes over the winter with their stems in water, which made the fruit so unpleasant to eat during spring, and some of the most sugary varieties obtained a bad name, and in many cases they had to be discarded as worthless. Since the system had fair play in this country and has become generally understood, opinions of both proprietors and practical men have materially changed. A considerable percentage of cultivators (by prejudice or something else) will insist on keeping their Vines dragging on into the autumn unfinished, and have to ripen as best they can when sun has almost ceased to have power. The ripening fruit often assumes a fair appearance, but is almost worthless for eating; at least, so we think after having tasted samples which have been grown hundreds of miles apart. It is nearly a quarter of a century since we (over a course of several seasons) made numerous experiments in keeping late Grapes. One lesson we were taught which was of much value—viz., that those which were ripened early in September kept much better than the Grapes ripened at the end of October and in November. A high temperature with a current of fresh air for some weeks after Lady Downe's, West's St. Peter's, Muscat Hamburgh Burchardt's Prince, and Alicante had assumed their dark coatings changed the characters completely of these from their ordinary flavour and texture of their substance. Lady Downe's when ripened in a Muscat house becomes one of the most sugary and richest of Grapes, and under such conditions keeps in the best possible condition (if managed well during the months in which it is preserved) till May. I have tasted it of fine quality, free from shrivelling, in June, and have exhibited the bunches in that month.

Last year we prepared a quantity for keeping late of the following, more for the sake of testing some new Grape cupboards than for any other advantage:—Barbarossa (Gros Guillaume), Alnwick Seedling, Alicante, Gros Maroc, Gros Colman, White Tokay, and Lady Downe's Seedling. Gros Guillaume kept in fine condition to the end of March, it then began to get limp. Alnwick Seedling became very tough after February, and its flavour (which we never have tasted of high palatable order) was very inferior. Alicante did well till the end of April, keeping its fine dense bloom till the last. Gros Maroc was good to the end of March, but some which were kept to the end of April were very "leathery" and inferior, but not shrivelled. Gros Colman was unchanged at the end of April and one of the best, being sugary, and the large berries did not become limp. White Tokay is the best keeping white kind which we have tried, except white Lady Downe's; this kind did not change in appearance, flavour, or texture, and was used up at end of April. Lady Downe's Seedling we give the preference to beyond all others, and did we only grow one Grape for use during the spring months this would be the one which would have especial favour. It was rich, sugary, and bloom as perfect as in October well into May. This kind gave special satisfaction to those who used them at dessert during May. These were mostly well ripened in a Muscat house during September, cut and bottled in December, placed in their winter quarters, which are cupboards fixed in the garden office (a somewhat spacious one, heated with hot water), but the heat was seldom turned on for the sake of the Grapes. The loss from decay or other causes was almost nil.—*M. TEMPLE, Carronhouse.*

CHRYSANTHEMUMS AND THEIR CULTURE.

(Continued from page 62.)

TIME FOR HOUSING PLANTS.

INEXPERIENCED growers of Chrysanthemums do not understand at what date to house their plants so as to have them in bloom at any given period. Without some knowledge as to the length of time particular varieties require to develop their flowers it is extremely difficult to have the plants in perfection exactly when wanted for exhibiting. This applies both to cut blooms and specimen plants, and is of the utmost importance, as freshness of the flowers goes a long way towards gaining success. Some varieties require a much longer time after they reach a certain stage in the growth of the flower buds to develop than others do from the same point of growth. Practical experience, which means incessant watching to detect the peculiarities of varieties, alone can render a new grower perfect in this detail; but a few hints on this subject will possibly be of advantage to the inexperienced. Circumstances do not sometimes admit of the plants being housed at exactly the time wished. The locality, too, in which the grower is situated has to be considered. If it be a low damp situation a grower should remove his plants inside earlier than another person located on a hill, for the reason that in the low-lying district early frosts are more to be feared than where the position is high, and consequently drier.

Many plants are spoilt annually through being left outside a few days too long. The tender swelling flower buds are easily destroyed by early frosts. When such an accident as this occurs the flowers produced are always crippled and are never perfect. Growers living in a district a considerable length of time know when to expect these early frosts, and it is seldom that any very great alteration takes place in the time of their arrival; therefore careful persons are not often caught napping with regard to the proper housing of their plants.

Presuming, then, that a show is to take place from the 10th to the 20th of November, all plants should be housed by the 8th of October, and so on in proportion to the dates fixed. No plants should remain outside without protection a longer period than that named. If they begin to show the colour of the flower by the unfolding of their florets it is useless to allow them to remain longer outside in the hope of retarding them, without means of warding off rains, frosts, and heavy dews, because as the flowers if continually wet quickly damp when placed under cover. Some varieties require moving inside much earlier than the dates named. These I propose to place by themselves, and those which require to remain outside as long as it is considered safe to do so are also named together. Any that are not named require housing at what I will call the general time, say October 1st; those requiring the longest time to develop their flowers are to be housed first, say about September 16th. Before their removal inside the plants should be examined for mildew, which generally infests the under side of the leaves in autumn, and is more difficult to eradicate than when on the outer surface. The best remedy is to lay the plants on their sides and syringe them as previously directed; remove all dead

leaves also and wash the pots clean, so that no more moisture need be given after housing than is absolutely required in watering. Plants arranged in a clean manner as to leaves and pots have a much better appearance than when put away in a dirty state.

Varieties requiring housing early (September 16th).—Boule d'Or, Meg Merrilees, Mabel Ward, Eve, Duchess of Albany, Grandiflora, Golden Dragon, Sarnia, Cherub.

If a grower fails to get buds at the time he requires of some varieties he then takes the next buds: this makes the late bud slow in developing, and he should house the said plants at the early date to make up for lost time in "taking" the buds.

Varieties requiring a short time to develop:—Beverley, George Rundle, Mrs. Dixon, George Glenny, Mr. Bunn, Prince Alfred, Lord Wolseley, Refulgeuce, Bouquet Fait, Madame Berthie Rendatler, and Elaine.

ARRANGING THE PLANTS.

The manner in which the plants are arranged when placed inside must depend upon circumstances, such as the means at the command of the cultivator and personal taste. Where practicable an effective manner of grouping them is much the best, in this way considerable pleasure is derived in examining them and comparing varieties. Some growers simply place them on the floor of the house in any fashion, this is a slovenly manner. No position suits them better than vineries or Peach houses after the fruit has been gathered; the leaves about the time the Chrysanthemums are placed under cover will be falling, thus admitting more light to the plants. A span-roofed greenhouse is a capital place for them, but it is seldom that such a house can be devoted to the purpose. Nowhere are they more effective than in a large conservatory, where Palms are the chief inmates. Some of the tallest plants of Japanese Chrysanthemums standing amongst the green foliage of the Palms are very effective, but where the convenience is limited to Vine and Peach houses the most must be made of the means at command by effectively grouping the plants, arranging the colours according to taste. A long sloping bank arrangement is the best in such a position, both for observation, convenience, and the welfare of the plants. With the object of exhibiting as the chief point to consider it is wise to place the Japanese varieties in a house by themselves, so that more fire heat can be given to them during the time the blooms are developing. The flowers are improved, the colours are brighter, and the florets come out cleaner and more regularly than they do where no fire heat is employed. When all sections are arranged together this additional heat cannot be given without detriment to others which do not require extra heat. In all cases place the plants as near to the glass as possible, so that they may have the full benefit of all available light. The colours of each are by this means brought out more in their true characters than they can be where light is diffused. The flower stems do not either become drawn weakly, as they do when the plants are far from the glass. The strength of the flower stem is a good indication of what is to follow in the shape of large blooms. The plants may be stood quite close together. The leaves of one may touch its neighbour, as seldom it is that space can be given to each plant to stand clear, though it is much more satisfactory where this can be done. When arranged in a solid bank the bottom leaves of the inside plants will quickly turn yellow and fall, but I do not know that so much harm can happen to the plants in consequence, because by the time that takes place the bottom leaves of the plants will have carried out their functions. The back walls of any cool houses which are bare in the winter may be utilised by training some of the tallest plants upon them. Often it is difficult to dispose of the very tall-growing varieties, but in such a manner it is easily done, and the plants always seem to thrive well when so placed.

AUTUMN TREATMENT UNDER GLASS.

Under this head the chief details consist of watering the plants and ventilating in a proper manner. Feeding the plants should continue as previously directed. It is seldom that they will require water more than once a day, and not always that. The pots being placed closer together air does not pass among them so freely, and the sun does not so readily reach them, therefore the soil does not dry so quickly as when the plants are outside. A dry atmosphere prevents the spread of mildew more than a close damp one. Whatever watering is required should be done in the morning, so that the paths and floors of the house will have time to become dry before night. In damp or foggy weather less air may be admitted, and the hot-water pipes should be warmed during the day, when air can be freely given to prevent the atmosphere becoming stagnant. If mildew shows signs of spreading, dust the parts affected with sulphur at once. When they are housed ventilate abundantly both night and day until the florets are unfolding; then at that stage it is wise to decrease the supply. If any plants are backward in growth so much that they cannot be fully in flower at an appointed

time they should be placed in the warmest part of the house, or, what is better, have a house to themselves where special treatment can be given to them as is required. The glass in the roof of the house should be kept as clean as possible that the plants may receive the full benefit of whatever light there is, which is often scarce at this season of the year. By constantly removing the dead leaves from the plants and keeping all sweet and clean the risks of damping among the petals is reduced to a minimum.

"TIMING" THE BLOOMS.

Where it is the intention of a cultivator to exhibit cut blooms of Chrysanthemums, "timing" them is an important matter to study, for without considerable forethought it is next to impossible to achieve the object in view. "Timing" the blooms means having all in perfection at any given date. An experienced exhibitor knows well it is of no use whatever to have some varieties past their best and many others not expanded. What is required is that all varieties, or nearly so, should be in full perfection at the time appointed, so that a good selection can be made, for indeed it is seldom that too many varieties are available. Three weeks previous to the date which they are required great watchfulness is necessary, and very much labour in moving the plants about from place to place to hasten or retard others. This requires doing in a systematic manner, simple as it appears to be, for without care much damage may be done to the tender florets. The best way to carry a tall plant when in bloom is this: One person takes the pot and a second manages the branches and flowers, which are carried in a horizontal manner. The blooms hanging down and being held securely, the gentle swinging does not harm them in the least. It is difficult laying down any guide as to how long each variety requires to reach a certain stage of development; but as a rule the large-flowering varieties, such as the Queen family, require from a fortnight to three weeks, according to the size of each flower, to develop thoroughly after they are, say, one-quarter out. Such flowers are very deceptive in appearance. Buds which at opening look thin and promise to be only small flowers often develop into very fine deep blooms—that is, if the buds were set at the proper time; taking then any of the Queen type in the stage which I have named, if the plants are in an ordinary cool house with a little fire heat occasionally to dry the air they will not require moving; but if they are more forward, say three parts developed at the same date, such plants must be kept quite cool and be shaded from bright sun, which is best done by hanging newspapers over them during the day. It would not be wise, perhaps, to shade the whole house from the outside, as some varieties will require the full sun's rays to develop them in time. When blooms of any sort are thought to be backward and it is feared they will not be expanded in time, remove the plants at once into a gentle heat where there is not much atmospheric moisture, and give such plants an extra supply or two of sulphate of ammonia: this forces them into bloom quicker than ordinary treatment. It is far better to remove such plants into gentle heat in good time, when it is seen that they cannot be fully out as needed, than to defer their removal till the last few days and then be compelled to place the plants into a strong heat in the vain hope of bringing them out, which is next to impossible; even if it were the blooms would suffer in colour, particularly the dark varieties. Chrysanthemums being hardy plants, it is more natural for the flowers to expand in a cool place than in a strong heat. Let all beginners bear this in mind, that the colour of each variety, if it is in its proper character, has a much better effect than when they are "washed out," so to speak, by being subjected to undue heat, and that, perhaps, owing to not commencing soon enough to assist development.

As before stated the Japanese varieties, as a rule, take rather longer to unfold their florets than do the Incurved and other sections; they are also assisted by giving more fire heat, they develop more freely under such conditions. So quaint-looking are they that they seem to require a little aid to unravel their peculiar florets, and this is best done with the aid of enough fire heat to keep the air of the house warm, ventilating night and day.—E. MOLYNEUX.

MADRESFIELD COURT GRAPE CRACKING.

IN reply to "S. C., West Lynn," we have growing here a Vine under nearly the same conditions as the one he refers to, only it is planted in a late house with Mrs. Pince, Lady Downe's, and Black Alicante. Its position is the west end, and there are inside and outside borders. I treat this variety in the following manner. As soon as the berries are stoned I let the laterals grow without stopping much longer than any of the others, which answers two purposes—viz., to shield the berries from the strong rays of the afternoon sun, which are most felt at that end of the house, and also helps to use up the sap from the bunch; for it is my opinion that it is a strong flow of sap which causes the berries of this Grape to split, the skin being thinner and of less strength than in

others. Just as the colouring stage arrives I bore two holes with a bradawl below the hunch, and I have never had cause to complain, for they carry about twelve good bunches of good flavour and colour. The only feeding I use at all stages is cowhouse drainage, with one good dressing of dissolved bones once a year. I leave a little ventilation all night, with fire heat on dull days and cold nights.—W. MOSELEY.

THIS is by no means a new subject to the readers of the Journal, but notes are invited upon the subject, and being a sufferer, I beg to lay my case before your readers. In a vinery under my charge Madresfield Court occupies one end. For eleven days previous to July 12th we had no fire, the weather being very hot. On Saturday the 10th the weather changed, and next day in the evening rain fell heavily in this neighbourhood, and on Monday the 12th, on going into the vinery in the morning I found a considerable percentage of the berries cracked. The fire was lighted early and the injured berries removed, and not one has cracked since. The reason I give is this, that the outside atmosphere being so highly charged with moisture, and no fire heat in the vinery to help it, the moisture could not get away, although there was ventilation at the back and front. I think "S. C." attributes the cause in his case to a great extent to the heavy rain on the Vine border the day before, which was not the case with me, as the borders and roots are inside. I think it will take a great deal more water at the roots to crack the berries than many people think it does, and "S. C." in the latter part of his note, speaks of two of the finest bunches being cracked with the damp and steam gathering on them, which bears out the fact that the presence of stagnant moisture in the house is the cause of it. Being interested in the matter I have tried the water at the root experiment since the above dates by soaking that end of the border in which Madresfield Court is growing with water three days in succession, over and above the general watering of the whole of the borders, but I have had no cracked berries since. This seems to me to support the endosmotic theory, which was so keenly argued in these pages more than a year since.—R. M.

ORCHID NOMENCLATURE.

"A BOTANIST'S" letter (page 85) in reply to my note is not quite satisfactory, and farther explanation is required. In the first place he says, "The use of a Latin name constructed as this (*Oncidium macranthum* Southgatei) was' would imply that the plant had been duly named, registered, and described or figured by competent authority." Will "A Botanist" kindly state where he obtains this rule? I have always understood that the botanist's name or the abbreviation of that attached to the name of the plant was the indication that it had been "duly named, registered, and described or figured by competent authority," and the idea that the form of the name itself shows this is new to me. But admitting this as a rule, why was *Odontoglossum vexillarium* *Hollingtoni* recognised? for although the plant was not certificated yet a vote of thanks was awarded for it, and that can only be regarded as an official recognition. There seems to be a peculiar inconsistency there. If Southgatei was wrong why was *Hollingtoni* passed? Again, at the following meeting, on July 27th an Orchid was certificated named *Oncidium stelligerum* *Ernesti*. Why was that name passed had the plant been described by "competent authority?" If "A Botanist" can answer these questions satisfactorily he will place the action of the Committee in a more favourable light than it is at present, and greatly oblige those who, like myself, merely wish to see a consistent method of some kind adopted.

There can be no reason why naming Orchids should not be conducted in the same manner as that of other plants, and if the Latin form for unauthorised names is objectionable when applied to an Orchid it should be equally so when given to a plant of garden origin, yet the Floral Committee awarded a first-class certificate at their recent meeting for *Matricaria inodora grandiflora plena*, a seedling variety of a common plant, and refused to certificate *Cattleya gigas* *Hilli* in that form, but transformed it into *Hilli's* variety, although it was an introduced wild variety. Why was not the *Matricaria* termed *Ware's* variety?

I have no desire to criticise the Committee, but it is evident to many persons that in acting without any rules to guide them they are likely to render the nomenclature of plants still more cumbrous and confusing than it is at present. The isolated action of two or three members of the Committee is insufficient. If they wish to introduce changes it should be done in a regular manner, and the first step to be taken is to form a few simple rules, and as a small contribution towards that allow me to suggest that all introduced plants should have Latin names, and all those raised in Britain, whether seedlings or sports, have popular names, except hybrids between recognised species, which should, where possible, have titles indicating their parentage.—AN ORCHID GROWER.

THE suggestion on page 65 that the Kew authorities must be looked to for some enlightenment on the subject of describing and naming Orchids is an admirable one, and I hope it will receive the attention it deserves in the proper quarters. No establishment in the world could have greater facilities for determining Orchids as well as other plants, for not only is there an herbarium of wonderful extent, but there are also living collections of plants to aid them, and in the case of the Orchids these might be readily extended if necessary. As a public department supported by the country, horticulturists have a right to expect some assistance, and the Director, Mr. Dyer, is so earnestly desirous of popularising the establishment, and has already introduced so many improvements, that we may confidently expect that something will be done in the direction indicated by "Taxpayer."

The concluding suggestion that the work of the Gardens should be issued as periodical reports to be published in all the horticultural papers is very important, for if this scheme were carried out it would do more to popularise the place and bring its work before the public than has yet been adopted. The fact is, we hear too little of what transpires in our national garden, and except the fragmentary notes occasional visitors send to the papers, and the annual reports which appear in such an erratic manner, we learn nothing of the interesting and important work performed both in the gardens and the herbarium. The official staff must include some able men who could contribute to a monthly report much that presumably they, as public servants, are not permitted to send for publication in any one paper, and which, in consequence, is lost to British horticulturists and botanists.—F. L. S.

IVY-LEAVED PELARGONIUM, ROBERT OWEN.

MR. ROBERT OWEN, the Floral Nursery, Maidenhead, has been successful in raising several varieties of this much-improved and highly attractive section of Pelargoniums, but the one figured (fig. 15) he regards as his masterpiece. The truss sent was certainly very fine, the flowers large, full, without being crowded, rich salmon pink in colour, with a faint suffusion of violet. Mr. Owen describes the habit of the plant as dwarf, free, and erect-flowering, and he anticipates it will make a fine specimen plant for exhibition, as well as be valuable in a small state for decorative purposes. The size and form of the flowers are accurately represented in the engraving.

THOUGHTS ON CURRENT TOPICS.

IT has been difficult to find anything to think about in the Journal of late except Roses. I am as great an admirer of these flowers as is the most ardent rosarian, but almost got tired of column after column of the same kind of literary fare. A feast, however, so rich, cannot last for long. It seems just to last long enough for everybody to be satisfied, and by this time I cannot help thinking that exhibitors, judges, and reporters must be glad that the term is about over, for what is pleasure to the many means hard work to the few whose duty it is to attend a crowd of shows over a wide field in a little time.

By the way, I perceive the judges have been in a dilemma at one show, and it seems the only way of escape was to divide a £10 prize offered for the best stand into two prizes of equal value, and grant them to two stands considered of equal merit. The late Mr. Charles Turner used to say there never were two stands containing an equal number of any kind of flowers staged exactly equal in value, but that there was a point between them somewhere, and only required to be sought for to be found. I strongly suspect the great florist was right. When competition is close some judges have a disposition to "make things pleasant" by awarding equal prizes. That is an easy way out of a difficulty. It is not suggested that the judges in the show alluded to acted on that principle. By no means. If there was no stipulation as to number of blooms, but that all stands, whether of six, twelve, or twenty-four, were eligible for competition, the difficulty of awarding the prize justly must have been nearly or quite insurmountable, for it is obviously easier to stage twelve superior flowers than twice that number, yet the aggregate merit of the larger stand may be equal to the slightly superior blooms in the smaller.

IF the framers of schedules of shows, not of Rose shows alone, when determining on classes and apportioning prizes were to ask themselves on what principle the awards are to be made there would not be so many "judges' puzzles" as there are. Schedules cannot be too well considered nor classes too clearly defined. When stipulations are clear and all the exhibitors placed on an equal footing as to the number of flowers or dishes in a class competent judges can do justice, and are not driven to resort to a compromising policy which is satisfactory to no one except, possibly, to some lucky individual who is granted a prize to which he is scarcely entitled, and that is not exactly the object for which shows are instituted.

THOUGH I have had about enough of Roses lately I cannot very well get away from them, or at least from Mr. Gilmour's article on page 59. There is a freshness about it that is quite enjoyable. It is neither of the dry conventional type on the one hand that is read by six lines at once, nor overlaid with flummery on the other that makes one feel it is a pity the writer did not turn his "talents" in another direction, but is free and readable, because a narration of experience of mistakes made and rectified, difficulties encountered and overcome. It is at once entertaining and bristles with suggestive hints from end to end. The persevering author seems to have succeeded in growing aphid-proof Roses, as he now neither requires "brushes or anything else" for clearing off insects. Is that because the growths are so strong that the little pest can make no impression on them? I ask this question seriously and believe it to be a valid one.

BUT the best hint in the paper is that on a limitation of varieties to those that succeed the best on a given soil, and of these growing many. That is the surest way to take a garden full of handsome blooms and to

win prizes at exhibitions. Not a few "new beginners" in Rose-growing squander money, waste space, lose time, and miss prizes through persisting in growing all the varieties in the catalogues. They may try them, but to determine to grow those that are evidently not suited for a certain position is a great mistake if superior blooms are the main object of the cultivator.

It is curious to observe that the same idea, and what I vainly thought a new one, should have been brought forward by two writers in the same journal. On page 64 I recorded an amateur's "find" that light Roses as a rule succeed with him best in light soil; and here is Mr. Gilmonr dividing the honours by saying on page 60 that "On light soils pink and white Roses will always come nearer perfection than the dark ones." It is evidently no use trying to say anything new on Roses when so many earnest and observant amateurs are working and watching and finding out things at the same time. Well, let us be thankful for any useful hint, come from whence it may, and that so many are engaged in various parts of the country in developing the peerless beauty of the Rose. I now "tear my thoughts away" from a fascinating theme, and direct them to Mr. Abbey and Asparagus.

I HAVE had to deal with this adroit writer before, and it appears shall

be exact, or he will "have" me. The next is an amusing bit. Here it is. "Did you ever raise Asparagus from seed, Mr. Thinker?" Answer. "Yes." Then my friend observes—he evidently knows all about it—"It sent up a tiny thread-like head; it got larger, and formed a lovely spray. Did you cut its head off? No; otherwise you would not have seen the beautiful spray." Who authorised my imaginative friend to put that "No" into my mouth? I did not. Then he continues, "Yet before the summer is over the tiny thing has pushed other shoots as strong again as itself. It has formed buds at its base, the soil is good, and the buds cannot wait till another year. The first growth has to be cut away if the other growth gets stronger without it. You do not do that, however, nor cut any 'grass' the following year. How is this?" Let me ask in reply how my prophetic interlocuter acquired his knowledge as to what I do or leave undone? I assure him I have done precisely what he says I have not done, and seen the "beautiful spray" resulting that he says I could not see. I begin to feel that instead of this "old hand" teaching me a lesson on Asparagus that it is in my power to teach him one—a great honour.

It is quite true, as Mr. Abbey observes, that from the "tiny sprays" of seedling Asparagus other shoots will spring as "strong again" before the summer is over. Yes, and they will spring the sooner and grow the



Fig. 15.—IVY-LEAF PELARGONIUM ROBERT OWEN.

have to deal with him again. He is an "old hand" evidently, and it is necessary to proceed cautiously, for he finds every chink in one's armour. An initial difficulty in an encounter is to know when he is striking home or only making a feint; when he is serious or when indulging in a little harmless banter; when he is using his own words or only pretending to use mine, then making a hash of them. However, I will take him as he is and make the best of him. He agrees with me and disagrees on page 84; supports me and condemns in a pretty well balanced alternation of sentences; but on the whole agrees with me if anything a little more than he agrees with himself. First we are informed, "Growths will spring from the crowns whether the first heads are cut or not. It is the same whether there is cutting or no cutting." Verdict, "no difference." Next, we are reminded that "the growths of seedling Asparagus are not cut at all in the first, second, and often the third year, and by retaining 'all growths' the plants have sufficient strength for cutting or for being the fourth year." Verdict, "cutting weakens." Again lower down, thirteen lines from the bottom, we find "cutting small early grass is no great injury—it may even strengthen the buds that remain." Verdict, "cutting strengthens." I cannot help jotting down a thought that springs up on that free method of reasoning. I hope it is not a very wild thought. It is this:—Your facile correspondent is so exhaustive—writes so much in proving his point—that he forgets what he has penned at the top before he finishes at the bottom.

ANYONE can see whether I have quoted correctly or not, and I am now going to quote again, for I must mind my points, and take care to

stronger if the first "sprays" are cut off; at least, that is what I have found. Some half rows from which all the growths were cut produced shoots that overtopped all others in the bed, and these cut portions pushed up the strongest heads the following spring and were the first to flower and produce seed, because the others were not strong enough to do so. All this may be contrary to science and theory, as it is understood by your correspondent. Be that as it may, I believe in facts, and my experiment proved what Mr. Abbey admits in part of his peculiar mixture that "cutting small grass early is no great injury—it may even strengthen the buds that remain." That, too, is what Mr. Stephen Castle appears to have found, and it represents the practice of old vegetable growers, also of the most present cultivators of Asparagus for market. "Cut the weak and leave the strong" is what Mr. Castle believes is the right practice; it was Mr. Abbey's tutor's practice, too, in thinning. That is just the point of the question I first put on this subject on page 12—namely, "Is Asparagus strengthened by cutting the small growths or 'sprue' till, say the beginning of June or not?" So far the evidence is in the affirmative, yet in hundreds of beds all the large is cut often till July, and all the "small stuff" allowed to grow from the beginning; hence, I think the overcrowded and weak beds that are far too common.

MR. STEPHEN CASTLE's plan of growing thinly on the level is the best, encouraging strong growths and suppressing the weak. This, too, appears to be Mr. Abbey's practice, so far as can be ascertained from an elaborate yet somewhat erratic argument tending to prove it wrong. In my opinion it is right, and the less the strong growths are cut in June

the better for the plants. Having "made the best" of my clever opponent as far as I have gone, I will wait with all possible equanimity his impending slashing on the fruit bud question, on which I do not intend to be pulverised without a struggle.

N.B.—On perusing the above lines I see I have left a small chink in my armour which I will not attempt to repair, as I feel I can endure the little punishment that may be inflicted as the result of my temerity.—THINKER.

HARDY ORNAMENTAL TREES AND SHRUBS.

VISITORS to the recent Show of the Chiswick Horticultural Society doubtless noted a fine group of hardy ornamental trees and shrubs exhibited by Messrs. Charles Lee & Son, from their large collection at the Arboretum, Isleworth. They well served to illustrate the wealth of plants at our command for the adornment of parks, pleasure grounds, &c.

I note only a few of the most striking:—Oaks were represented in variety. *Quercus Daimio*, the very large-leaved and fine Japanese variety, stood out from amongst its compeers boldly and distinctly. *Q. argenteus pictus*, the base of shoots dark green, young shoots punctated with white, very pretty; *Q. Mirbecki* or *Zan*, fine glossy foliage; *Q. atropurpurea*, beautiful dark purple leaves, one of the choicest Oaks; *Q. concordia*, this has been well named the Golden Oak, the leaves pure golden yellow of splendid effect. Acers too were very showy. What a striking subject is *A. Negundo variegata*, with its almost white leaves, one of the most beautiful trees ever introduced. *A. platanoides Schwedleri*, young growth, bright purple; *A. striatum*, the pretty "snake-barked" Maple. *A. laciniatum*, "Eagle's claw" variety, very curious. *Corylus Avellana fol. aurea*, the new Golden Filbert. *Prunus Pissardi*, the new purple Plum, a great acquisition; *P. æconomica*, golden variegated Plum. *Alnus glutinosa aurea*, the Golden Alder, its large yellow leaves very showy. *Cerasus padus elegans*, a very pretty variety of Bird Cherry. *Cornus aurea elegantissima*, one of the prettiest of the Dogwoods. *Robinia angustifolia elegans*, a very elegant small-leaved Acacia. *Fraxinus aucubæfolia*, golden variegated Ash; *F. alba variegata*, the "Silver" variety. *Ulmus Roxelsii* (Golden Elm), an indeed striking object for purposes of ornamental planting. *Catalpa syringæfolia aurea*, very large bright golden leaves. *Persica purpurea*, purple Peach. *Æsculus rubicunda*, the scarlet Horse Chestnut. A seedling *Æsculus*, unnamed, having very pretty foliage, the leaves being green-and-white, was noteworthy. Amongst other fine varieties, too numerous to mention, may be named some handsome standard *Eucynmus radicans* variety, a beautiful silvery sort, which, introduced at fitting "points," added much to the charm of this noble group.—B.

RIPE VERSUS UNRIPE WOOD—FRUIT VERSUS WOOD BUDS.

I TAKE "A Thinker's" silence on the question of the wood ripening after the leaves are off and in subsequent seasons as giving consent to my views as expressed on page 458 of last volume—viz, "I have no doubt of the wood hardening, but of its ripening I have very grave doubts, for ripening—that is, solidification—during growth or with foliage is very different." That being so, how is it reconcilable with his statement that he had in view an aspect of the case on which I appear to "lack experience?" Experience of what? Ripe wood in autumn when the leaves fall studded with fruit buds, and unripe wood on which the wood buds are conspicuous through there being few fruit buds to mark the contrast and give zest to the examination! I maintain, despite "the experiment of an observant student of fruit trees and an expert cultivator, or the lesson the owner of the trees, his gardener, and their several visitors are not likely to forget, and that it was impossible to ignore," that the buds of fruit trees when the leaves fall are either fruit buds or wood buds, and that they do not change during the winter. It is not a question of theory at all, but of fact; and as for "A Thinker's" charge of "lack of experience" he would, perhaps, think differently had he, as I have, had to grow fruit in two localities, both about 500 feet above sea level—one midway between the North and Irish Sea, and the other not four miles as the crow flies from the former—for twenty years, especially if he add twenty years plodding on low ground.

If "A Thinker" thought to escape from the dilemma by such theory I am not disposed to have so important a subject "put on the shelf" to gratify his rhetorical proclivities some other time. The question is a very important one to gardeners, affecting as it does the health, fruitfulness, and longevity of the trees. The question is, "Does unripe wood ripen after the leaves are off and in subsequent seasons?" Debateable as it is, it does not on that account lose its importance. Unripe wood either ripens or hardens after the leaves are off, and though it seems like "hair splitting" they are different; and I am pleased to notice "A Thinker" admits the distinction—viz., ripe wood is effected with foliage duly exposed to light and air, the sap thoroughly elaborated and assimilated, and the material so formed is sound, healthy, fruitful, long-lived; unripe wood may be due to too rich soil, food supplied in excess of the leaves' power of elaboration, aided by weather unfavourable to evaporation, so that the material deposited as wood is soft and pithy, unhealthy, unfruitful, short-lived. "Go on," exclaims "A Thinker," "there is hard wood." Well, hard wood is—what? Soft wood with a large pith hardened? Nothing of the kind. It is not the wood, "A Thinker" tells us, will get "harder and harder as the years roll round," but soft sappy growth that is common enough on over-fed trees, and not necessarily overcrowded, sappy, and ill-fed. Young trees have it plentifully,

though the "sun or light can act directly on the leaves" at the base of the shoots and to their extremities. It is the wood your correspondent thinks it necessary to shorten "the first year or two from planting." Why? To give the needful growths for furnishing the space; to form the basis of the future tree? Rather is it not to get rid of the soft sappy extremities by cutting back to "hard ripe wood" at the base? "There is no need to remove the soft growth," "A Thinker" may say, and, in fact, it is what he does say; "they will ripen." They will harden, which is different from ripening, as I take ripening, so far as any benefit resulting to the buds and the wood in the deposition of cambium is concerned, to be effected with the foliage, and by that only. Wood or growth-hardening is the means by which acclimatising is effected. Plants are inured gradually to the influences of a colder climate. Our "hardening off" is only acclimatising by inuring plants to the influences of light and air before they are subjected to outdoor influences. Placing plants in frames from a warm and moist hothouse hardens them, they suffer no injury when placed outdoors; but place others direct from the hothouse into the open air, and are they not chilled by the cold and scalded by the heat?

The wood hardens, as has been known from time immemorial, finding exemplification in the loosening of fruit trees from walls in winter, the exposure of fruit trees grown under glass by the removal of the roof-lights, and in the standing of plants outdoors in summer after the growth is made. The wood hardens in winter, especially if dry and sunny, and soft wood more than firm through the greater evaporation taking place from the soft wood; but the soft bark does not elaborate the sap, and it is not assimilated simply because there are no leaves to separate or convert the crude matter into sound and transmit the latter to the wood; in fact, there is an ascending but no descending current. The sap evaporated by the soft bark passes into air and is lost, the wood shrinks in proportion to the evaporation, and it is simply harder because shrunk. It contains less moisture, and is not so susceptible to injury from cold, and its cells are contracted, contain less sap, and frost does not rupture them so quickly. But what of the wood hardening if the winter be wet? What if the weather be frosty and snowy from November to March? "A Thinker's" winter-hardening is like his bud-transformation, it only occurs "when the conditions are favourable," which, unfortunately, has not occurred once within the last forty years in this country to convert unripe into ripe wood. As it is made, so it remains—soft, unhealthy. If it escape being destroyed by frost it is affected by gum and canker. Some fruit trees are notoriously affected by canker and gum all their days, losing whole branches at a time from no apparent cause. Sometimes one tree is barren and another of the same variety fruitful, and some timber trees are black at heart long before the woodman under ordinary circumstances would think of applying his axe, to say nothing of flaws in timber traceable to unripe wood in the early stages of the forest tree. The lesson is clear. Unripe wood, however it may harden, is never healthy, fruitful, or long-lived. It goes to the rubbish heap sooner or later, and it is best to have nothing to do with it. If it be present in young trees at planting cut it away; rely entirely on "ripe hard wood" as the only sure foundation of a healthy, fruitful, and durable tree. None other is of any good for a crop of fruit.

We have seen that there is hard wood—i.e., unripe wood hardened; but this is not what your correspondent means by hard wood at the base of the shoots. We get a stage higher, or from unripe wood with wood buds only, to soft wood with fruit buds. On the "upper, softer, greener, and younger portions" of shoots "A Thinker" tells us "fruit buds form, in point of fact they do not form so well on the lower, older, and harder parts of annual shoots." Perhaps not, but the fruit buds on the soft extremity growths are not comparable in any sense with the fruit buds at the base of the shoots where the wood is "hard and brown." In practice the pruner cuts away all the manufactured wood. One, or at most two buds on the "hard ripe wood" of Vine shoots, are found to afford more compact bunches, finer in berry and finish, than can be had from buds a yard away from the rod or base. Why? Think again. Manufacture "breast wood" or extension wood as you may—experience will cut it all away. If Vines are not a fair example, take the Peach. Here the experienced gardener will seek growth thoroughly exposed from its base to its extremity to the influences of light and air; he will endeavour to procure the "hard ripe wood" which your correspondent asserts "is a gigantic waste." Ripe wood is produced under full exposure to light and air sustained by the action of the roots, and from end to end is a mass of fruit buds; unripe wood is a consequence of excess of nutrition over the power of evaporation and elaboration; luxuriant growth, though exposed to full atmospheric influences, is not nearly so well solidified at the extremity as at the base, and fruit buds, though not lacking, are not nearly so prominent as in the ripe shoot, but it has fruit buds at the base as well as at or near the extremity. Now the wood at the base is what gardeners term "hard ripe wood," and that at the extremity is soft and unripe; at least the wood is much firmer at the base than at the extremity, yet your correspondent asks us to accept as a fact, that the extremity will store sufficient nutriment for the formation of fruit buds, "whilst the wood below and three months old—and which consequently ought to be riper—is barren." Then, no doubt, thinking to elench his argument, he states, "Ripe wood does not necessarily mean hard wood, but wood stored with nutriment by the leaves." Now, Mr. Thinker, which is likely to store most nutriment—wood put forth in spring with the full force of the cambium or ripened wood, and that made after midsummer? According to "A Thinker" we have fruit buds at the extremity because more nutriment is stored there, or on what I shall without fear of question call unripe wood, and on the "hard wood" at the base, which I shall term ripe wood, we have

wood buds. Assuming that we get fruit buds on the extremity, and they escape collapsing with the wood if the winter be severe, they may develop blossoms with splendid petals, beautiful to look at, but look inside—the stamens have no anthers, they shrivel when brought to the light of day; having no pollen, the pistils have styles scarcely extending beyond the nectary; have twin or triple pistils; the blossoms do not, as a rule, set, what sets does not swell, and that swelling does not stone. Now for the “ripe hard wood” buds at the base. The fruit is there or nowhere, and that no one knows better than “A Thinker.” He only wanted to show the evil of the extension system overdone, and its inapplicability to the Peach and other fruit trees outdoors without attention to the prevention of over-luxuriance, for he states, “the less the branches are shortened the better, after the first year or two from planting, provided—and this is important—they are so thinly disposed that sun and air can act directly on the foliage. It is assumed the roots are in good and well drained soil, and not mutilated by digging amongst them.” The lesson to be drawn from this is, Peaches, Nectarines, Figs, Apricots, and the better varieties of Plums, with the tender Cherries, are all better grown under glass. It is the only way to have fruit equal to the acceptable standard in size and quality with certainty in cold localities, and in most of those where the extension system is practised. This is a safe solution of the problem why we have so much bare wall space now. We provide strong wood, and long wood, known as extension, only to find that it requires more heat, more light and air, for its solidification than obtained under the old system, and which our climate at no time afforded, so that our old gardeners were not so wrong after all in cutting back to “hard ripe wood” at the base. Experience had taught that the soft extremity wood would not give fruit, even “when the conditions are favourable,” whilst a severe winter would kill it, and it was found better to cut it away altogether, as if remaining it could only result in gum and canker.

There is another aspect of the case—viz., your correspondent did not mean his “thoughts” to apply to Peaches and other trees producing fruit on annual shoots, but to Plums, Pears, and Apples, and his remarks justify that interpretation. True enough is it that we very often see trees with as much wood overtopping a wall and taking as much support from the soil as the foliage and fruit on the tree itself, where there is so much “breastwood” as to keep every ray of light from the base of the shoots. Now it is here again that I join issue with “A Thinker”—viz., there must be and is a manipulation some time, usually after midsummer, with the result that more growth is made, and continued until checked by cold. The crowded growth generally is firm at the base—it gets its firmness from the solidified wood of the previous year—and it is still further provided against disaster by latent buds, the wood is drawn, long-jointed, and unsolidified as the leaves have not the needful air and light. “A Thinker” advises thinning the branches or shoots. In his own words “Ripe wood does not necessarily mean hard wood, but rather wood stored with nutriment by the leaves.” This points to the necessity of “thinning the branches and shoots whenever they are so crowded that the sun or light cannot act directly on the leaves at the base.” I see the base buds are going to be of consequence; in fact he says, “It is better, safer, and more profitable.” Capital advice as far as it goes, yet it is not of any use “while the roots are permitted to extend unrestrictedly;” therefore we are driven to the extremity of deducing that summer pruning is of no value in the formation of fruit buds, as “cutting off luxuriant laterals is not averting growth, but directly encouraging it, for if the roots are left intact their force is concentrated on a small area, and just as that is restricted in the same proportion is strong growth incited.” Just so, whether the growths are thinned or the breastwood removed we get more wood, and instead of concentrating the food supplies on the extremities we only cause fresh growth, and increase the harvest of unripe wood and wood buds; therefore I am bound to deduce that summer pruning is of no value in the formation of fruit buds only in that it keeps the growths from becoming crowded and permits the access of light and air to the foliage, so that the sap is duly elaborated and in the buds at the base of the leaves, converting what would otherwise be wood buds into fruit buds. “A Thinker” clenches the argument again—viz., “when fruit, and fruit alone, is the main object it is best secured by having the branches thinly disposed and not shortened, as then a maximum number of spurs is eventually produced with a minimum quantity of breastwood.” Exactly, branches thinly disposed so that sun and air can act directly on the foliage. “Then will fruit buds form in the greatest numbers, and the ripening of the wood may be left to take care of itself.” Just so. Make sure of the fruit buds in summer, and there will be no need of the “metamorphosis” in winter. Unfortunately there is, and I am afraid “A Thinker” has not studied—perhaps he has not been a reader long enough—his *Journal of Horticulture*, or he might have observed the timely instructions about root-pruning in reply to inquirers respecting the unfruitfulness of their trees, which clearly have not been rendered fruitful by summer pruning.

It is, however, clear that “A Thinker” knows what he is about—viz., takes the best means of securing fruit buds in summer, and if the foliage does not ripen kindly or the buds do not plump he lifts in autumn. He takes care, like a wise man, to have two strings to his bow, if the knife fails there is the spade. The question is, when? In autumn after the leaves fall? I think not. Your correspondent’s advice as to thinning the shoots to let in air and light, which is sound as far as it goes, but it does not go far enough. I may supply the omission, and cannot do better than quote from the distinguished pomologist Dr. Hogg, who in writing of the Moor Park Apricot in the “Fruit Manual,” fourth edition,

page 177, states, “The tree is a free grower in its early stages, producing long and strong shoots, and acquiring a luxuriance which is not conducive to the production of fruit. To counteract this should be the chief aim of the cultivator. The way to do this is to root-prune the tree about the beginning of August by removing a portion of the soil and cutting some of the strongest of the roots. This will check the too abundant supply of sap, diminish the excessive production of wood, regulate the development of the tree, and consequently tend to a production of fruit.” This I think is most appropriate, and “A Thinker” must acquiesce with the difference that it would be best to defer it until the early part of September for the Apples and Pears. It will arrest the flow of the sap; “the number of buds in the intermediate state to which a further check by root-pruning will settle the matter,” and new roots will be formed before winter, so that there is no fear of their lacking support in spring.

So far good. Now for “A Thinker’s” statement that “the buds of fruit trees do change after the leaves fall.” In the first place he states nothing of his own experience, only he saw the “results of the experiment,” but he leaves us entirely in the dark as to when. It might be the April following the November in which the pyramid Pears and bush Apples were lifted, root-pruned, and replanted, or it may have been a year after the transplanting. I have no doubt he saw the trees with blossoms at least five times more in number than those that had not been disturbed, but I think he has skipped a year, though that can hardly be justified, as he writes of November and the following April. There is some ambiguity here, but it is not of consequence to the issue, for it is diametrically opposed to my experience of fruit trees, and it is a question that anyone can soon settle for themselves. For my part I can only state that I have never missed a year during the last thirty of either planting fruit trees or lifting established ones, and in no instance have I known a recognised wood bud being converted into a fruit bud between the fall of the leaf and the following April. I have also made and planted five kitchen and fruit gardens with young trees, and never found a fruit blossom truss more on them than they had fruit buds in November. So much then for the practical part of the question—viz., the buds are either fruit or wood buds in November, or when the leaves fall, and so they remain during the winter under any conditions, developing in spring blossoms or shoots. The experiment “A Thinker” mentions as having the result alleged is completely at variance with my practice. I readily grant that it is not always possible to tell precisely whether the buds are fruit or wood when the leaves fall, but a practised eye can tell even then nine out of ten of the buds, or if not the observer is good for nothing, being neither an observant student nor expert cultivator of fruit trees.

Whilst denying the “metamorphosis,” I grant root-pruning, or rather lifting has a tendency to cause more blossoms to appear than would be the case were the trees not lifted for arresting the sap, which goes on circulating during the winter, more or less is taken from the wood buds, and whatever takes from the wood buds is concentrated on the fruit buds or their formation, as everything tending to jeopardise the life of the subject only tends to increased effort to continuance. I have observed that many buds which I thought could only be wood buds have developed blossoms in spring, but then they were practically sterile, and without the lifting would no doubt have remained latent for that year at least, if they had not perished in the bud, through the wood buds taking all the support from them, they not being sufficiently developed to make the first demand, as fruit buds of the kind under discussion invariably do, they being in advance of the wood buds to a very noticeable degree. In that way, and no other, are the lifted trees with five times as many blossoms as the unlifted to be accounted for. Your correspondent says nothing about fruit, and wisely, I think, for latent buds, even if fruit buds, are not usually fruitful.

These latent blossom buds are not by any means common. In the case of fruit trees they usually perish in the year succeeding their formation, but there are instances in the Vine, and there are the Aristolochias, some Passifloras, and Ipomæas, that push flowering growths, either with, but mostly without leaves, yet I do not suppose anyone would ask us to believe they were when first formed wood buds, and by some metamorphosis have been transformed into flowering buds, for they are really not flower buds but flowering shoots.

Further, if “A Thinker” is right in his metamorphosis doctrine, we have only to lift late Strawberry runners in October and replant. The leaf growth will be arrested, a truss of flowers will form a leaf as a heart bud, and every plant will flower in spring, at least there will be five times more flowers than on unlifted plants. Everybody knows they are no good for the next year, they must have a year’s growth ere they will form the essential fruit buds. Take another example. We lift Lily of the Valley in autumn, and we can tell to a nicety which crowns are flowering and those that are not. Why should not the non-flowering crown or leaf bud change into a flower bud if we transplant it and allow it favourable conditions until spring? If your correspondent’s doctrine be worth anything, this ought to take place, but the fact is it does not. No; it wants a year’s growth; it wants leaves to elaborate and assimilate the sap; store up nutriment in a flower spike perfect in embryo at the base of the accompanying growth. In choosing Lilac for forcing, select those with flower buds for early forcing, and keep those with nothing but wood buds under favourable conditions until spring, and see what arresting a wood bud has done for them. Your correspondent asks, “What is a fruit bud?” He answers, “It is an arrested wood bud, and nothing else.” I really cannot accept the definition. “Whether the cessation of extension is natural or artificial matters not, the result is the same; the embryo leaves are transformed into petals and organs of reproduction.” What arrests the growth in nature “causes the cessation of extension,” What causes

fruit buds to form on the laterals of Vines? You are getting a long way on to "first causes," therefore, I am content to leave it as it stands, as I have no intention to be "drawn" beyond my depth.

"Scores of fruit trees are planted annually," writes "A Thinker," "and their branches not shortened, that make little or no growth" (surely he does not mean growth in winter, but the summer following planting) "but are studded with fruit buds that would not have formed if the trees had not been disturbed." This affords the key, "Force has been lacking for extension into shoots, hence the metamorphosis." It was not in the winter following a November planting, but in the summer, after the trees had failed to have more trusses of blossom in April than they had fruit buds in the November when planted. If a tree fails to fruit, lift it. It will be transformed into a fruitful tree, therefore "A Thinker's" advice is sound, for failing the fruit buds in the winter you are sure of them by the following autumn.—G. ABBEY.

SMALL ROSE GROWERS.

I HAVE read with much interest the letters of "Saxoring" and "A Small Rose Grower" on exhibitions, and especially with reference to the question, How to deal with amateurs who have but small gardens and tend them personally. It would be a great pity if such men as the latter who, if interest in his favourite flower would bring success, would possibly take a high rank in the prize list, were to continue to be excluded from it, and his place were taken by those who beat him by sheer weight of metal.

Is it impossible for the National Rose Society so to frame their prize list as to put him on fairly equal terms in some classes with all those who are allowed to compete? In our local shows there are two special classes to meet such cases. Prizes for twelve, "within so many miles" (with the understanding that neither the Secretary nor I compete), and for six for "amateurs not employing a regular gardener." Possibly the latter rule or some modification of it would meet "A Small Rose Grower's" wishes, or the number of Roses might be limited, "open to amateurs not possessing more than 300 plants." Either of these rules would give "A Small Rose Grower" a chance of the distinction he covets, and I hope he may yet see his name in the list of prizewinners.

But as the larger classes, "Saxoring" seems to forget that many, perhaps most, of the largely successful exhibitors are amateurs in the fullest sense of the word, doing all the work or nearly all with their own hands, and with only the amount of land which they themselves can manage. The "eighth of an acre" of Mr. Slaughter is historical, and I fancy Mr. Pemberton would smile at the idea of keeping an "army of gardeners," yet they hold their own, and it would be easy to multiply examples. Indeed, when I see a middle-aged clergyman and his daughters in the tent setting up a box I expect to find something difficult to beat. No rule of exclusion can, I think, be fairly devised for the larger classes; but in the smaller, let the "big men" be kept away and the lesser fight it out.—DUCKWING.

I SYMPATHISE most heartily with "A Small Rose Grower." I am not quite 6 feet high myself, either by Nature or Rosa-culturally, but I do not see how we can do more than make a class or classes for "those who do not employ a regular gardener." The "two-day" limit would not work. No, we little fellows must not be too ambitious. It is no use running our heads against a wall, as it were, by showing at the Crystal Palace and the larger country shows, but the National Rose Society does provide classes for the smallest Rose-growers, as he will see by carefully looking over their schedules. I should further advise him to try his luck at some smaller country shows open to amateurs of all England. If I were not afraid of being considered to be advertising I could mention one in Herts and several in other counties easily accessible by rail. "Small Rose Grower" need not be afraid of going even 100 miles; he would then have a chance of winning enough to pay railway fare, plus a hundred-weight of honour and glory which he would bear lightly. I speak from experience. I am a small Rose grower, I consider, myself, cultivating 15 poles of ground, employing a man only twice a year—once in spring and once in autumn—to dig, and a boy occasionally to weed, and do budding, pruning, planting myself with only one hand (a half), and enjoy it.—F. H. G.

THE BOG GARDEN.

UNLESS it be in the garden of a hardy-plant specialist the bog garden is rarely seen, a fact much to be regretted, seeing that so many hardy plants are admirably adapted for such a situation, and indeed luxuriate under the treatment they thus receive. It is little known to what extent these bog beds improve the condition of many plants, otherwise we should see their more frequent adoption. There are few gardens which do not offer a suitable position for forming a bed for these moisture-loving plants, positions, too, which not unfrequently have become neglected spots. I was once informed that the position now occupied by that noble example of rockwork in the York Nurseries was once a stagnant pool, but now in its stead we have one of the most famous rockery formations which skill has raised. So, too, with the bog garden; any low-lying neglected spot may, if it can be drained, be converted into one of the most pleasurable and

interesting spots in the whole of the garden, not at the expense necessary to form a gigantic rockery, such as would make it a byword in horticultural circles for this comes within the reach of but few. No, there is no need for elaborate expenditure at all, for the primary cost would be little more than that of preparing an ordinary border for the reception of any collection of plants.

I will endeavour briefly to describe my idea of the formation of one of these spots, and at the same time to cite a series of useful free-flowering and interesting plants for its future embellishment. The exact position it shall occupy will depend entirely upon circumstances, but for an example we will imagine a circuitous walk encompassing a lawn and flower garden, and at its furthest extremity from the house a corner of irregular shape and which hitherto has been anything but pleasing. Such a place will afford an excellent opportunity for making an artificial bog. Presuming this spot is on the level, the first step will be to remove the soil; in doing so, avoid all pretensions to a formal margin, let this be as irregular as possible. Remove sufficient soil so that the surface of the bog be several inches, or a foot even, below the ordinary level, the sides sloping inwards and thereby insuring the rain draining into it. Upon the character of the soil will depend the next step. If this be of a stiff retentive nature, and facilities for obtaining cheap peat suitable for the purpose be not great, it will be advisable to grow only those plants which delight in stiff soils; but if cheap peat can be had in plenty, the best plan will be to remove the original soil to a depth of about 9 inches and replace it by peat. This may constitute the one half, and allow the other half to be of the original soil, to which manure and leaf soil with plenty of road grit sweepings may be added. If fears are entertained respecting stagnation, place a drainpipe through the bed and convey it to some neighbouring drain, or, if this is not convenient, a good drainage may be made of brickbats, broken pots, or the like; this should be covered with rough material, as, for example heather or bracken, and so guarantee a perfect drainage, for, be it understood, that though a plant may be decidedly moisture-loving it is not many that can endure stagnation, and none are benefited by it. One of the chief points to aim at is a plentiful supply of water, sufficient to keep the soil in a state of semi-saturation, and this with a comparatively free drainage, in such a place will bog plants thrive. As I have pointed out, the bog may consist of two parts, the one for peat-loving and the other for such as prefer stiffer or loamy soils. This, of course, will have to be settled at the outset, and also whether it is intended to grow the smaller types of vegetation, as, for example, the Androsaces, the smaller Gentians, Rhexas, Dentarias, and so on, or whether such picturesque plants as Bamboos, Spireas, Gunneras, Osmundas, and the like. By the adoption of the former we may embrace many of the loveliest of alpine gems so full of pleasure and interest, and by the latter it is possible to produce in some hitherto neglected spot a picture of tropical beauty. For the dwarfier plants a position fully exposed to the sun will be preferable, and if a rockery already exists the bog should be hard by. For Cypripediums, Trilliums, Orchises generally, and others to which I shall presently refer, a shady spot will be found beneficial. It sometimes happens that naturally wet boggy spots exist in gardens, and wherever this be so they should be turned to good account. Besides plants which are strictly bog-loving subjects, there are many more which are suited for the margins of lakes, streams, and the like, and which water only reaches in very wet weather, notwithstanding which, however, their roots are kept well supplied with moisture from the surrounding soil. These plants may be used for the margin of the artificial bog, so placed that their roots may penetrate into the moisture below. In the great majority of gardens there will be no great difficulty in obtaining a plentiful supply of water, either from the overflow of some ornamental fountain or the lake, and failing these, it will be no great task to convey it to any given spot by means of pipes. A perforated pipe round the margin may easily be concealed, or a central jet throwing the water in various directions would suffice; in either case, the water supply should be under control, so that soil may at any time be saturated if occasion required.

There is little else in the construction of the artificial bog which needs special comment, save a word or two respecting the surface. This need not be level, indeed it will be better if slightly undulated, and will thereby accommodate a greater variety of plants. On the slightly raised mounds and their sides may be placed plants which give preference to the drier portions of the bog. In such a position several species of *Primula* delight, among which are *P. furinosa*, *P. Florkiana*, *P. cashmiriana*, *P. rosea*, and also *P. Munroi*; *Mazus pumilio*, *Epigaea repens* and others are also suitable occupants for the sides of these mounds, and many small Ferns. Here and there in the little valleys stepping stones may be placed permanently for convenience sake

for getting about on. We will now imagine the bog in readiness to receive the plants, of which I will name some of the most suitable, the height varying from 1 or 2 inches to 2 feet. Among very dwarf plants are *Campanula hederacea*, *Gentiana bavarica* and *G. verna*, *G. pneumonanthe*, *G. Andrewsii*, *Anagallis tenella*, *Spigelia marylandica*, *Swertia perennis*, any of the *Soldanellas*, these are choice gems, and will require select spots in the drier portions; *Parnassias* in variety for the moister parts, *Pinguiculus* ditto; all the *Calthas* or Marsh Marigolds, *Rhexia virginica*, *Dentarias*, *Cypripedium spectabile* and *C. acaule*, *Saxifraga granulata plena* and *S. Hirculus* on the margins, and *S. peltata* for the moister portion. All the *Primulas* above named and also *P. sikkimensis*. This latter will do well in the wetter portions of the bog. Then we have *Trillium grandiflorum* and its forms *præcox* and *maximum*, than which we have no more delightful plants in spring. Sundews and *Sarracenia purpurea* for the wettest spots; the last named must be abundantly supplied with water to succeed with it. *Erpetion reniforme* is a good plant for shade and moisture, while *Linnaea borealis* and *Ourisia coccinea* are very pleasing in the drier parts. The *Ourisia* should be planted so that its rhizomes can overhang the side of a stone, and plant it in equal parts of peat and loam it will do well. My experience of this plant grown in pots is that it seldom flowers at the centre, whereas the rhizomes overhanging the sides of the pot flower remarkably free. I prefer a rather shady spot for it. Then among Ferns we have *Lastrea thelypteris*, *Onoclea sensibilis*, *Struthiopteris*, and others. These will be found a good selection of the dwarf bog plants. With regard to taller plants we have *Spiraea venusta*, *Astilbe rivularis*, *Orchis foliosa*, *Habenaria ciliaris*, the last two may be included in the first set, as though they attain a height of 3 feet they have to be very strong examples. *Osmunda regalis*, *Gunnera scabra*, *Bambusa Metake*, *Thamnocalmus Falconeri* which will attain 12 feet; *Cyperus longus*, *Lysimachia clethroides*, *Polygonum Sieboldi* and *P. japonicum*, *Spiraea Aruncus*, *S. Ulmaria* and varieties, *Iris ochroleuca* and *I. Kämpferi* in variety, *Lobelia cardinalis* and *L. syphilitica* with their varieties, and *Chrysobactron Hookeri*. *Phormium tenax* may also be used in places where it is considered sufficiently hardy, *Lythrum*s and others. It may be well to observe probably that many of these included in the above list grow to a considerable height, such for instance as the *Gunnera*, and in which case an isolated position would be best suited to its requirements; these taller plants for the most part while delighting in abundant moisture do not require to be constantly saturated. In both sets will be found a good variety of the best bog and marsh plants best adapted for making a permanent and pleasing feature in any garden.—GENTIANA.



WE are informed that Her Majesty's Commissioners of Works have accepted the tender of Mr. B. S. WILLIAMS, Victoria and Paradise Nurseries, Upper Holloway, N., for supplying Hyacinths, Tulips, Crocus, Daffodils, &c., for the following London Parks, &c.:—Hyde Park, Regent's Park, Victoria Park, Bethnal Green Museum, Battersea Park, Kennington Park, and Hampton Court Palace Gardens.

— "W. B., Leek," sends the following on THE LATE ALEX. MEIKLEJOHN'S COLLECTION OF AURICULAS:—"In your issue of the 14th ult., 'D., Deal,' refers to his collection as being in the hands of Mr. J. B. Young, Bridge of Allan. I may say in March last the whole of the collection, containing about 500 plants, was purchased by a few Auricula growers in Leek from Mr. Young. This in some measure accounted for our Auricula Show in the Town Hall on the 1st of May last, of which a report appeared in the Journal. We have amongst us over 1000 plants containing all the choicest named varieties in commerce, and our Show promises well to become one of our institutions, as within one week of the issue of admission tickets over 200 was sold, and the Committee, after paying all expenses, handed over a balance of £3 15s. for the benefit of our cottage hospital."

— MESSRS. J. VEITCH & SONS' NEW RHODODENDRON BALSAMÆ-FLORUM RAJAH is one of the most distinct of the greenhouse hybrids yet obtained. It is also especially interesting owing to the fact that it was

obtained from the pod of seed which yielded the beautiful pink and white varieties that have already been certificated; and of about seventeen varieties obtained from the same pod, all those that have flowered have proved to be distinct and worthy of preservation. The variety Rajah has a novel appearance owing to the outer petals or lobes being much larger than the others, round and flat, while the inner ones are small and clustered. The colour is bright orange tipped with red, the central petals being the darkest.

— "K." writes, "THE DOUBLE MAYWEED, MATRICARIA INODORA GRANDIFLORA PLENA, shown by Mr. T. S. Ware, Tottenham, at South Kensington last week, will probably become a useful plant. The old double form is well known, but the improved variety has much larger flowers, nearly twice the size, pure white, and without the greenish yellow centre that mars the other. It is free and strong in growth, and will be a capital plant for cutting."

— CERTIFICATED PEAS.—It appears that the list of Peas, page 87 sent to us from Chiswick, was incomplete, and we are requested to add that a "Seedling" unnamed (Sharpe & Co.), a dwarf, wrinkled blue Marrow, was also awarded a first-class certificate.

— A DUNDEE correspondent states that the FRUIT CROP IN SCOTLAND "will this year be a complete failure. The early part of the season was favourable for the fruit trees, and there was abundance of blossom; but more trying months than May and June have not been experienced by fruit-growers for a generation. The almost continuous frosts of these months have ruined the crop of Apples and Pears. This will prove serious to growers in such districts as the Carse of Gowrie, where there are large orchards. The bush fruit will be an average yield, but prices are very low, and thus those farmers who looked to this crop as an aid in paying their rents will be disappointed."

— SOUVENIR DE LA MALMAISON CARNATIONS AT RANGEMORE.—An object of great beauty, which has excited the interest and admiration of the many visitors to these well-known gardens during the past few weeks, is the grand batch of Carnations (*Souvenir de la Malmaison*) now in bloom there. The plants, comprising some five hundred in number, are staged in a large span-roofed house, several of the two-year-old plants carrying upwards of sixty blooms each, the flowers measuring from 4 to nearly 6 inches across, the colours ranging from very pale salmon to deep rosy pink. Though the plants are now past their full beauty the effect is still very fine, while their vigorous and healthy appearance reflects great credit on the cultivators.

— WE are requested to state that Messrs. Merryweather & Sons, the originators of the "autimonia" garden hose, which has gained a character for strength and long usage during the past nine years, have made for Baron Rothschild a new lawn and garden apparatus after the Paris system, with various improvements.

— WE have received the following notification from Mr. Richard Bremridge, Registrar of the Pharmaceutical Society of Great Britain relative to the sale of CYANIDE OF POTASSIUM:—"The public danger arising from the sale of insect-killing bottles containing cyanide of potassium by naturalists and other persons not registered as chemists and druggists, and without compliance with other provisions of the Pharmacy Act, 1868, has recently been brought under the notice of the Council of this Society, and I have been instructed to call the immediate attention of such persons to the fact that the sale of these insect-killing bottles by them is contrary to the provisions of the above-mentioned Act of Parliament, and that the penalty to which they render themselves liable is £5 for every sale."

— NATIONAL CO-OPERATIVE FLOWER SHOW.—The various co-operative societies in the north and south of England have decided to hold their first annual National Exhibition of plants, flowers, and vegetables on August the 24th, in the conservatory of the Royal Horticultural Society, South Kensington. The various exhibits are to be the *bona fide* productions of working men co-operators, and the cost of packing and transmission of the plants, &c., to South Kensington will be entirely defrayed by the societies to which the exhibitors belong. The Royal Horticultural Society not only grant the use of the building, but arrange the exhibits, and find two of the judges free of charge, and also offer one or more medals to be competed for. Liberal prizes are also offered by the Agricultural and Horticultural Association, the managing director of which, Mr. Ed. Owen Greening, is the chief promoter. Under

such favourable conditions as these there will, no doubt, be an excellent exhibition of amateur horticultural productions.

— VALUE OF THE OLIVE TREE.—A gentleman, says the *San Francisco Herald*, has recently collected 12,000 cuttings of the Olive tree for planting. The Olive is most successfully grown from cuttings, and the 12,000 will make a fine grove. When set in an orchard in the usual form they will cover 100 acres. An Olive tree when ten years old is estimated to be worth 10 dollars, and a grove of 100 acres, or 12,000 trees, will aggregate a value of 120,000 dollars. These are estimates made upon the value and profits made upon Olive trees in Santa Barbara, and single trees elsewhere. The Olive grows well throughout this region, and the demand for its fruit and oil is good and increasing.

ROOT-PRUNING PEAR TREES.

WE some time ago received a small pamphlet of thirty-one pages from the pen of Mr. Robert Smith, Yalding, Kent, a very successful fruit grower, describing his practice of growing Peaches, Nectarines, and Pears on open walls. A letter from a correspondent who desires "practical hints" on root-pruning Pear trees, suggests to us the citation of a portion of the chapter on that subject. It will be seen that the author's practice not only rendered the trees fruitful, but cured them of canker. His teachings on Peach culture are sound and good.

On root-pruning Pear trees to induce fruitfulness, Mr. Smith observes :—

"This operation consists in shortening, more or less, the roots of a tree. Its immediate effect is a reduction of the supply of nourishment, and consequently a less rapid development of woody shoots, within certain limits; for if root-pruning is practised too severely a general debility will result, and the tree, however pre-disposed by the operation to produce buds, is unable to bring fruit to maturity. It is advantageous to have the principal feeders of the tree near the surface. Take for example a tree planted against a wall and in a rich border; left to nature it would grow perpendicularly, and throw out most of its branches near the top of the wall, while its roots would extend horizontally, tap roots vertically, and the principal feeders would be found near the outer limits of the border. Root-pruning induces fibrous roots; cutting coarse roots that have a tendency to extend themselves a long way from the bole will cause fibres; to promote this is the object of root-pruning.


"I was led to root-prune a 'Beurré Rance' Pear tree on a south wall here—a large tree, with seven tiers of branches, 33 feet long, in 1880. This tree was not fertile for many years. It made so much breastwood every year that the tree seemed determined to grow wood and nothing else. I took to summer-pruning it, and that helped a little to get the tree into a bearing state, but even then I found that the fruit cracked and blistered, and not a clean one was to be had from the tree. Under these circumstances I determined to examine the roots, which I did in the autumn of 1880, when I found it had three large tap-roots. I had pieces cut out of these, two measuring $3\frac{1}{2}$ inches, and the other $1\frac{3}{4}$ inch in diameter. These pieces were cut out sufficiently long to admit of half a brick being put into their places. Instead of putting the old soil back I had fresh put in, then the tree was mulched with good rotten dung, and a good watering settled the soil round the roots. In the following year we had ten dozen well-ripened and good-flavoured fruit from this tree; and the second year, after tap-root-pruning, we had twenty dozen splendid Pears, and it has gone on bearing every year since. In 1885 there were over thirty dozen grand specimens, and in the Hardy Fruit Competitions, open to all England, at South Kensington, in the autumn of 1885, the first prize for 'Beurré Rance' Pears was awarded to my fruit. This success should tempt others to follow my example, as I cannot help thinking there are many old Pear trees about the country that might be made profitable by tap-root-pruning.

"Although most gardeners know the good results that arise from careful root-pruning, judging from the majority of gardens which we see from time to time, it is not half carried out, as is evidenced by the mass of breastwood or the paucity of fruit on the extremities of the branches. The best results are probably obtained by preparing a year previously in the case of wall trees and two years before in the case of espaliers. In the former the roots are certainly confined by the wall, while the latter have the power of feeding themselves on all sides; and if the roots are shortened on the face of the tree one year, the next season the back can be operated on, and so treated it will feel no check. Fertility will thus be induced, and the fruit also gains in quality. The warmth of the surface soil will greatly benefit the newly-formed roots, which should be protected and encouraged by summer mulching with good rotten dung and leaf soil—leaf soil put over the dung.

"There is scarcely a Pear tree in these gardens but what has been root-pruned, or bodily transferred, after preparation, to more suitable sites, and all of them have done well ever since. I had a large Pear tree of 'Marie Louise' transferred from a north to a south wall, without any preparation, four years ago last November; it did not fruit on the north site. This has borne most excellent fruit, very clean and handsome. The First Prize open to all England, at South Kensington, in the autumn of 1885, was awarded to fruit taken from this tree; and the press took notice of this dish by saying—'A very handsome dish of "Marie Louise" Pears from the Gardens, Kenward, which took first honours.'

"I have had many Pear trees cankered badly, but by carefully lifting and planting again on the same site, with fresh soil, I have cured it—that is, the trees have outgrown it, so to speak. The fresh soil has given new life and vigour to the trees operated upon, and the new growth has not yet shown any tendency to canker.

"Of course root-pruning wants doing well, and should be carried out in a thorough manner, and the operators want to be interested in their work. Any rough-and-ready manner will not answer, nor because the employee

wishes it done. The gardener should feel satisfied that it would be the best to be done with unfruitful trees. The soil taken out in the operation should be wheeled away, that would give more room for the workmen to work up under the tree's roots, as it requires a large opening to come at the tap-roots of large trees. It is of great importance in commencing to start immediately after breakfast-time, so that it might be completed before dinner, because it is of the utmost importance that the roots should not be left uncovered longer than is necessary for the operation. Having a large open space about the tree's roots, the workman will require a large chisel and mallet, and if the tap-root is very large, a pruning saw. The American saw is a most handy implement for this work, as I have found from experience. This saw will cut through a large root very speedily; I have very easily cut through a tap-root $3\frac{1}{2}$ inches diameter. I make two cuts thus— taking the pieces away. These pieces I cut sufficiently large to admit of half a brick being put into their place. This is of more importance than it appears at first sight. If no tap-roots are found, and the tree has made a quantity of breastwood year after year, giving no fruit, it will be well to cut pieces out of the two largest roots found, and shorten a few of the smaller ones; this will cause fibres to form very readily if the tree is healthy. On transplanting trees two or three years after they were thus operated upon I have found a grand lot of good fibres. Trees carefully transplanted, however large, will do well the first year. I have on a south wall a large 'Chau-montel,' twenty years old, transplanted last autumn, and at the present time (8th of April), it is as forward in bud as any other trees. This is only one instance out of many carried out here, for if a tree does not bear fruit I examine the roots in November to try and find out the cause. If I decide not to cut the roots I should have fresh soil to fill in with, instead of putting that back which came out when examining the roots. Fresh soil does a great deal of good, it gives a start to the tree, even if nothing more is done.

"I am writing from experience the satisfactory results obtained here from root-pruning for the last six years. It is so marked that I consider it worth publicity. The fruit is improved in size and flavour in a wonderful degree.

"To give my readers some idea of the size of the trees bodily transferred to other sites, I may mention two horizontal-trained trees that were moved in the autumn of 1884—one, 'Pitmaster Duchess,' the other, 'Williams' Bon Chrétien.' One had nine tiers of branches, the other eight; the branches were 16 feet long. These trees were too large to get through the doorway of the garden wall, consequently had to be got over the wall by a staff of men. These trees were prepared two years before by root-pruning and giving of new soil, and are now looking as though they had been in their present places for many years, and show great promise of fruiting this season, having a full crop of bold bloom bunches. This says much for root-pruning and preparing of fruit trees, and removing to more suitable sites, after very dry summers, as 1884-5 proved to be."

We have seen the fruit grown by Mr. R. Smith, and it was very superior in size and quality. The pamphlet is published by Simpkin, Marshall and Co., Stationers' Hall Court.

FUCHSIA MADAME THIBAUT.

AMONGST a collection of Fuchsias growing for testing the merits of old and new varieties in the gardens of the Royal Horticultural Society, Chiswick, earlier in the season, Madame Thibaut was so conspicuous that we procured the top of a flowering stem for engraving. Our artist was instructed to represent it as exactly as possible, both as regards the number, size, and arrangement of the flowers, so as to show the character of the variety and its adaptability for decorative purposes. This Fuchsia was raised by M. Lemoine and is new; it is in all probability destined to become popular as a conservatory and "market plant," this last being the best test of the merits of a variety for home decoration. Madame Thibaut is a sturdy, upright, vigorous grower, and will not readily lend itself to the twisting and bending that is adopted by floral milliners in producing plants as if cast in a mould and nearly as smooth as sugar loaves. Let it be well grown and assume its natural habit, and it will be regarded as an acquisition when associated with other plants for producing a pleasing effect in rooms, greenhouses, or conservatories, or wherever attractive arrangements may be desired in the summer months. There are many varieties of Fuchsias with more symmetrical and perfectly formed flowers, but we have seen none to surpass and few equal Madame Thibaut for sturdiness of growth with floriferousness. It is a dark Fuchsia, the prevailing colour being red, tube and sepal's crimson, corolla reddish vermilion.

WIRRAL ROSE SHOW.

The Wirral Rose Show has gone through many vicissitudes, commencing at the Birkenhead side of the Mersey, where its exhibitions, although excellent in the number and quality, failed to attract the general public in sufficient numbers. It was then removed to Liverpool, in the hope that an extended patronage would be given to it. The magnificent Hall, St. George's, grand in itself, has about the worst light for Rose shows that can be conceived; and notwithstanding increased efforts the Exhibition failed to attract. Indeed Liverpool does not seem to value flower shows, if we may judge from the splendid failure of the Royal Horticultural Society this year. It was then removed back to Birkenhead, and has been held for the last two years in Hamilton Square, and I believe with much better financial results. There was one thing the Committee have, amidst all these changes, been very persistent in—they have always managed to get wet days for their



Fig. 16. —FUCHSIA MADAME THIBAUT.

exhibitions. This year, however, made a break in their ill luck in this respect, as the day was just the perfection of a day for Roses—bright, yet cool; and as a result the Roses stood the ordeal of the Exhibition well, and I hope that their chancellor of the exchequer will not have to report a deficit in his budget.

The prizes offered by the Society are such as to tempt many of the leading nurserymen to exhibit, and as it will be seen by last week's Journal, they came from north and south to contend in friendly rivalry. Although Mr. B. R. Cant was not present, Mr. F. Cant was. Messrs. Paul & Son, Prince, and others exhibited, while nearer home the Messrs. Dicksons showed in good form. The Show, however, is strongest in the amateur classes, but not so strong in numbers as in some former years; but there was a manifest improvement in the quality of the blooms, and indifferent blooms were the exception. Thus, as in many places, showing the great improvement that has taken place in the culture of the Rose, good examples not being confined to the larger growers, but being also found in the smaller ones; and those who have been so assiduous in endeavouring to stimulate the zeal of others have been amply awarded.

In the class for seventy-two Mr. F. Cant of Colchester was first with a good stand, perhaps a little wanting in size, though bright in colour, of the following varieties:—*Souvenir d'un Ami*, Countess of Rosebery, Madame John Twombly, Dupuy Jamain, Madame Caroline Kuster, Rosieriste Jacobs, Merveille de Lyon, Duke of Teck, Countess of Falmouth, Ulrich Brunner, Madame Hippolyte Jamain, Sultan of Zanzibar, François Louvat, Dr. Sewell, Madame Angèle Jacquier, Général Jacqueminot, Maréchal Niel, Mrs. Laxton, Heinrich Schultheis, Earl of Pembroke, Marie Van Houtte, A. K. Williams, Niphetos, Fisher Holmes, Mons. Noman, Mrs. Prince, Madame Cusin, Star of Waltham, Marie Finger, Mary Rady, Madame E. Verdier, Victor Verdier, Marguerite de St. Amand, Prince Arthur, La France, Le Havre, Hippolyte Jamain, Marie Verdier, Marie Louis Van Houtte, Madame de Watteville, Abel Carrière, Innocente Pirola, Horace Vernet, Marie Baumann, Marie Cointet, Madame George Paul, Edouard Morren, Mons. E. Y. Teas, Madame Bravy, Exposition de Brie, Capitaine Christy, John Bright, Lady Mary Fitzwilliam Duchesse de Morny, Madame Lamhard, Countess of Oxford, Egria, Dr. Hogg, Pride of Waltham, Prince Camille de Rohan, Duchess of Vallombrosa, Madame Charles Wood, *Souvenir d'Elise*, Harrison Weir, Marquise de Castellane, Dr. Andry, La Boule d'Or, Alfred Colomb, Catherine Mermet, and François Michelon.

In class 2, for thirty-six trebles, Mr. F. Cant was again first with Duke of Teck, Marie Finger, Heinrich Schultheis, Horace Vernet, Charles Lefebvre, Maréchal Niel, Baronne de Rothschild, Ulrich Brunner, Marguerite de St. Amand, Caroline Knster, Général Jacqueminot, Marie Verdier, Catherine Mermet, Duke of Wellington, Dr. Sewell, Madame Margottin, *Souvenir d'Elise*, Marie Baumann, Maurice Bernardin, Rosieriste Jacobs, *Souvenir d'un Ami*, Marquise de Castellane, Rubens, Alfred Colomb, Madame Bravy, Merveille de Lyon, Alfred Dumesnil, Louis Van Houtte, Marie Van Houtte, La France, Alphonse Soupert, A. K. Williams, Innocente Pirola, Pride of Waltham, and Reynolds Hole. In class 3, for thirty-six singles, Messrs. F. and A. Dickson & Son, Chester, were first with Fisher Holmes, Hippolyte Jamain, Camille de Rohan, François Michelon, Sénateur Vaisse, Constantin Tretiakoff, Dr. Andry, Jules Finger, A. K. Williams, Antoine Mouton, Duke of Wellington, Marguerite de St. Amand, Marie Baumann, Eugénie Verdier, Charles Lefebvre, Merveille de Lyon, Lord Macaulay, Violette Bouyer, Xavier Olibo, Elie Morel, Alfred Colomb, La France, Abel Carrière, Gabriel Luizet, Ulrich Brunner, Captain Christy, Rosieriste Jacobs, Lady Mary Fitzwilliam, Mons. E. Y. Teas, Louis Van Houtte, Général Jacqueminot, Marquise de Castellane, Alba Rosea, Duchesse de Vallombrosa, Dr. Sewell, and Beauty of Waltham. In class 4, Messrs. Jefferies & Sons were first with Horace Vernet, La France, Lady Marie Fitzwilliam, Alphonse Soupert, Beauty of Waltham, Madame Gabriel Luizet, Marguerite de St. Amand, Louis Van Houtte, Marie Baumann, Marie Verdier, Baronne de Rothschild, Xavier Olibo, Ulrich Brunner, Queen of Queens, Merveille de Lyon, A. K. Williams, Abel Carrière, and Countess of Oxford.

In class 5, for eighteen Teas, Mr. George Prince was first with Princess of Wales, Etoile de Lyon, Madame Angèle Jacquier, Catherine Mermet, Madame Hippolyte Jamain, Jean Ducher, Niphetos, La Boule d'Or, *Souvenir de Paul Neyron*, Maréchal Niel, Madame Cusin, Marie Van Houtte, *Souvenir d'Elise Vardon*, Madame Furtado, Madame Lamhard, Comtesse de Nadaillac, Madame de Watteville, and Innocente Pirola. In class 6, for twelve new Roses, Messrs. Paul & Son were first with Baronne Nathalie de Rothschild, Pride of Reigate, Grandeur of Cheshunt, Lady Mary Fitzwilliam, François Rêve, Marshall P. Wilder, Ella Gordon, Merveille de Lyon, Longfellow, and Lady Darnley.

We now come to the open classes for amateurs. In the stand for thirty-six blooms, distinct, the Rev. J. H. Pemberton was first with Horace Vernet, Annie Wood, Magna Charta, Alfred Colomb, Lady Mary Fitzwilliam, Duke of Teck, Pride of Waltham, Charles Lefebvre, Niphetos, Louis Van Houtte, Merveille de Lyon, Comtesse de Camando, Captain Christy, Exposition de Brie, Madame Lamhard, Ulrich Brunner, Madame Eugénie Verdier, Marie Baumann, Marquise de Castellane, Madame Charles Craplet, Alphonse Soupert, Comte Raimbaud, Maréchal Niel, Reynolds Hole, La France, Beauty of Waltham, William Marsden, A. K. Williams, Madame Montet, Madame Victor Verdier, Mlle. Marie Finger, Auguste Rigotard, Madame Bravy, Miss Hassard, and Madame Gabriel Luizet. In class 8, for twenty-four varieties, the Rev. Lionel Garnet was first with Magna Charta, Mons. E. Y. Teas, Violette Bouyer, Edouard Morren, Madame Gabriel Luizet, Rosieriste Jacobs, Hippolyte Jamain, Countess of Oxford, Captain Christy, François Michelon, Xavier Olibo, Marquise de Castellane, Dr. Sewell, La France, Louis Van Houtte, Merveille de Lyon, Le Havre, Madame L. de Laplace, A. K. Williams, Alphonse Soupert, Mons. Noman, Ulrich Brunner, Eugénie Verdier, and Camille Bernardin. In class 9, twelve varieties bulbs, the Rev. J. H. Pemberton was again first with Horace Vernet, Baronne Rothschild, Pride of Waltham, Beauty of Waltham, Alfred Colomb, Madame Caroline Kuster, La France, Louis Van Houtte, Merveille de Lyon, Marie Baumann, Marquise de Castellane. In class 10, for twelve Teas, the Rev. Dr. King of Madingley, Cambridge, was first with Maréchal Niel, Niphetos, Comtesse de Nadaillac, *Souvenir d'Elise Vardon*, *Souvenir d'un Ami*, Caroline Knster, *Souvenir de Paul Neyron*, Madame Angèle Jacquier, Princess of Wales, Innocente Pirola, and Jean Ducher.

In the class for twenty-four varieties, the first prize being the gold medal

of the National Rose Society for growers in Lancashire and Cheshire, was awarded to T. B. Hall, Esq., of Larkwood, Rockferry, for a splendid box of blooms, large, fresh, and brilliant in colour. The varieties were Violette Bouyer, Le Havre, Madame Georges Schwartz, Marie Rady, Mons. Noman, Prince Arthur, Annie Laxton, Général Jacqueminot, Merveille de Lyon, A. K. Williams, Madame Hippolyte Jamain, Duke of Wellington, Captain Christy, Louis Van Houtte, Etienne Levé, Xavier Olibo, Dupuy Jamain, Duchesse de Vallombrosa, Marquise de Castellane, Marie Finger, Marie Baumann, La France, Beauty of Waltham, and Charles Lefebvre. In section D, the silver medal for twelve varieties grown within the Hundred of Wirral or ten miles from the Liverpool Exchange, was awarded to J. W. Crowther, Esq., for Marie Baumann, Star of Waltham, Dr. Andry, Captain Christy, A. K. Williams, Le Havre, Xavier Olibo, Madame Gabriel Luizet, Lord F. Cavendish, Duke of Teck, Fisher Holmes, and Merveille de Lyon. In the class for six varieties Jos. Armstrong, Esq., was first with Lady Mary Fitzwilliam, Duke of Wellington, Lord Macaulay, Merveille de Lyon, La France, and Fisher Holmes. In class 19, for twelve Teas or Noisettes, E. Claxton, Esq., was first with excellent blooms of Comtesse de Nadaillac, Madame de Watteville, Madame Willermoz, Caroline Kuster, Princess of Wales, Jean Ducher, Anna Ollivier, Madame Cusin, Niphetos, David Pradel, Madame Hippolyte Jamain, and *Souvenir d'Elise Vardon*. For the best six Teas, the first prize went to W. E. Hall, Esq., for Madame Cusin, Madame Willermoz, Anna Ollivier, Catherine Mermet, Marie Van Houtte, and Niphetos.

I have not added the names of the other prizewinners, as the full score was given in last week's Journal.—D., Deal.

CARNATIONS AND PICOTEEES.

It is very pleasing to admirers of these popular flowers to see the great interest taken in their culture, and also the prominent position given to them in the gardening papers. "Amateur's" remarks at page 84 are very interesting and instructive, dealing as they do with the long past history of the Carnation and Picotee. In reference to the present, I may be permitted to remark that the southern section of the National Carnation and Picotee Society was established in 1877, and the first exhibition was held in the Royal Aquarium at Westminster on July 18th of that year. A good deal has been said rather wide of the mark as to who promoted the first exhibition. To those requiring information on this point I would refer them to the *Journal of Horticulture*, vol. xxxii., new series, page 154. It is there stated that the "proposed show is due directly to the suggestion of Mr. Charles Turner" and another admirer of the Carnation. It was a very successful exhibition. About twelve competitors took part in it, and a great impetus was given to the culture of these beautiful flowers. The subsequent exhibitions have been held at the gardens of the Royal Horticultural Society at South Kensington, and have all been more or less successful. The last exhibition has been the most successful of the whole series. No less than twenty-nine exhibitors took part in it. All the exhibitors were from the southern districts; it was impossible to get in any flowers from the north. The Manchester Exhibition has been fixed for August 14th. Some of the members write to say it is rather late for them, others that it will be right, and some of the very latest districts will scarcely be in. One hears the same complaint in the south. One grower told me the show was ten days too late for him, but I made him confess that he had placed his plants under glass too soon, thinking they would not be in time. An error in judgment this, which even experienced growers will commit, although not always willing to bear the blame.

It is stated in your report of the exhibition that the number of single blooms entered was not so large as usual. This is owing to an alteration in the schedule. Exhibitors at one time were allowed to exhibit as many blooms in a class as they liked, and many of them entered six; this is not allowed now. No exhibitor must stage more than two blooms, and can take two prizes only; at one time he might have taken six in one class.

I would also like to refer to Mr. T. S. Ware's exhibits. The flowers are very effective shown in that way, but I doubt if small growers could exhibit in a class of that kind, as not only does it require a large number of blooms, but must also be very destructive to the "grass" which has to produce the plants for next year. On Mr. Ware's plan about seventy-two blooms and the material for seventy-two plants would be required to make up a stand of twelve bunches. This initial difficulty few amateurs would care to face. The fourth prize in twelve Carnations, third for six Picotees, and second for twelve Fancy Carnations were awarded to Huson Morris, Esq., The Nest, Hayes, Kent. The cards were not placed to the exhibits, and your reporter could not get the name on that account. After such a successful exhibition all must admit that wonderful progress has been made in the last decade. What will it be at the end of another? or who will live to see it? We need not look so far into the misty future. I was greatly pleased to see so many young growers taking part in the fray, and especially in the small classes. This bodes well for the future of the Society.—J. DOUGLAS.

ROSES AND ROSES.

I CAN endorse on a limited scale most of the experiences clearly and practically described in the opening article of the Journal for July 22nd, and with the writer's (Mr. Duncan Gilmour) concluding words about the Rose I cordially agree. Sitting now within reach of my Rose table, a round one standing rather low in a bay window looking out on the Roses outside, the eye enjoys the glow and brilliancy of the Rose, and appre-

ciates the freshness and fragrance in a measure I think above that of all other flowers. Our own home Rose shows do indeed repay for the attention and assiduity the Roses require, but then for almost the greater part of the year the Rose only wants proper feeding or protection beforehand, and then she rests by herself.

Dark Roses with me, until the recent rains came, were not so large or so velvety as usual. The paler Roses and the white ones were very satisfactory; Teas later and smaller. Mildew appeared in the very hot weather; it seems to come on in dry heat, as well as in chill and cloudy days. We had few insect pests and no aphides. Amongst the richest dark Roses in form and substance is Louis Van Houtte. It did good service as a trophy made up as a centre surrounded by the small but pure and beautifully formed Boule de Neige and relieved with spikes of Imperial Blue Delphinium. Another grand bouquet was composed entirely of the Rose Marquise de Castellane and edged with the exquisite buds of the common English Moss Rose.

So much for the bouquets our Rose garden gave us when we wanted those bouquets to be significant and distinctive. I must not intrude longer on your space, but shall hope some other time to say a word about our Rose table.—A. M. B.

HORTICULTURAL SHOWS.

WILTS HORTICULTURAL.—JULY 29TH.

THE above Society held its annual Show of plants, fruits, flowers, and vegetables in the Bishop's Palace grounds, Salisbury, on the above date, and the Committee and courteous Hon. Secretary (Mr. W. H. Williams) are to be congratulated upon the result of their efforts, though, in consequence of the weather having been somewhat showery in the afternoon, the takings at the gates were less than last year. In the majority of the classes the competition was keen, and the exhibits generally of excellent quality. Fruit was fairly well shown.

PLANTS.—For twelve stove and greenhouse flowering plants there were only two entries—namely, Mr. James F. Cypher, Cheltenham, and Mr. Rann, Handcross Park, Crawley, who took the prizes in that order with grandly flowered plants. Mr. Cypher's dozen contained similar plants to those he had at Southampton. In the corresponding class for a like number of variegated and fine-foliage stove and greenhouse plants four collections of grand plants were staged by Mr. J. Lock, gardener to W. B. Cleaver, Esq., Newcombe House, Crediton, Devon; Mr. J. Cypher, Mr. C. Rann, Mr. Lock being placed first, and the two exhibitors named equal second. And the Judges must have had no easy task in determining the relative positions of three such excellent collections of plants. Mr. Lock's best plants, if one may particularise in a collection so uniformly good, were *Gleichenia Speluncæ*, 12 feet over, *Cotons Warreni*, *Disraeli*, *Johannis*, *Chelsoni*, and *Williamsi*, all highly coloured; *Cocos Weddelliana*, a grand plant of the kind; *Dasyllirion acrotrichum*, *Cycas revoluta*, *Litania borbonica*, and *Kentia Belmoreana*. Mr. J. Mould was awarded an extra prize in this class for a very neat collection of fresh clean-looking plants.

For six stove and greenhouse flowering plants, distinct, first Mr. Lock, showing fresh well flowered plants of *Erica coccinea*, *Dipladenia amabilis*, *Erica ampullacea*, *E. Barnesi*, *E. Thompsoni*, and *Anthurium Schertzerianum*. Second Mr. Mould, whose best plants were *Erica Antiniana* and *Clerodendron Balfourianum*. Only two lots were staged. In the corresponding class for a like number of foliage stove and greenhouse plants two lots were staged, first Mr. Lock, whose best plants were *Alocasia macrorrhiza variegata*, *Thrinax elegans*, and *Kentia Fosteriana*. Mr. F. Smith, gardener to the Lord Bishop of Salisbury, was a good second, showing in his collection good *Pandanus Veitchi* and *Crotons*. Messrs. Lock and Smith occupied the same position in the class for nine exotic Ferns and Mosses, *Microlepia hirta cristata*, *Nephrolepis davallioides*, and *Cyathea dealbata* being his best, and Mr. Smith's best plants were *Adiantum farleyense*, *Gymnogramma chrysophylla*, and *Lomaria gibba*. In the class for six pots of *Liliums* Mr. H. W. Ward, gardener to the Earl of Radnor, Longford Castle, Salisbury, was first, showing well-flowered plants of *L. speciosum Kratigeri*. In the class for six tuberous-rooted *Begonias* Dr. F. W. Coates, Salisbury, was a capital first with fresh well-flowered plants, and Mr. Thornton, gardener to Mrs. Greenwood, Harnham, Salisbury, second. Mr. Lock had the best nine plants of *Gloxinias*, Mr. T. Wilkins, gardener to Lady Thodore Guest, Inwood House, Shaftesbury, the second best, and Dr. Coates the third best.

In the amateurs' classes Mr. Currie, gardener to Colonel Pepper, Salisbury, had the best six stove and greenhouse plants, distinct. Second Mr. Lovibond, St. Anne Street, Salisbury, both showing well. There were three collections of six Ferns staged. First Mr. J. Currie, with small but fresh plants of *Gymnogramma chrysophylla*, *Adiantum gracillimum*, &c. Second Mr. Gregory, third Mr. Lovibond, all showing well. Four lots of six *Coleus*, distinct, were staged. First Mr. T. S. Fletcher, second Mr. J. Rockett, gardener to G. Smith, Esq., third Mr. Lovibond, all of Salisbury, for well-trained and highly coloured plants. Dr. Coates had the best three pots of *Liliums*, showing good plants of *Harrisi*. Second Mr. Gregory. Messrs. Currie, J. S. Fletcher, and Lovibond took the prizes for six Zonal *Pelargoniums*, distinct, in that order; as also did Messrs. E. L. Brown, Portland Place, Salisbury, and T. S. Fletcher for four distinct varieties of variegated foliage plants. Dr. Coates was again victorious in the class for six *Begonias*, showing good and profusely flowered plants. Second Mr. Currie, who also showed well.

FRUIT.—Three collections of eight kinds were staged here. The collections staged by Mr. W. Iggulden, gardener to the Earl of Cork, Marston House, Frome, and Mr. H. W. Ward, were very close in point of merit, but after some time had been spent over the two the first prize was awarded to the Marston collection, second to Mr. Ward, and third to Mr. Evans, gardener to Lady Ashburton, Melchet Court, Romsey. Mr. Iggulden

showed a neat Queen Pine, Black Hamburg, and Foster's Seedling Grapes, good Gros Mignonne Peaches and Victoria Nectarines, Brown Turkey Figs, a good Blenheim Orange Melon, and Moor Park Apricots. Mr. Ward's best dishes were Black Hamburg and Muscat of Alexandria Grapes, Pine, Brown Turkey Figs, and Moor Park Apricots. Mr. Evans's best dishes being his Barrington Peaches, Elruge Nectarine, and Best of All Melon. Mr. Ward had the best Pine Apple and Mr. Evans the second best, both showing Queens. Seven three-bunch stands of Muscats were staged, the majority of which were very green. Mr. Pratt, gardener to the Marquis of Bath, Longleat, Warminster, was easily first, showing three large well-coloured bunches for their size and season. Second Mr. James Budd, gardener to F. C. Dalgety, Esq., Lockerby Hall, Romsey, with well ripened bunches. Third Mr. Thomas Northeast, Norton House, Warminster. For a like number of bunches of Black Hamburgs Mr. Pratt was again to the front, showing three large well-coloured bunches, Mr. Warden, gardener to Sir F. H. Bathurst, Bart., Clarendon Park, Salisbury, being a good second, and Mr. Iggulden a close third with smaller but well finished bunches. In the corresponding classes for any other white than Muscat of Alexandria, and any other black than Black Hamburg, Mr. Ward was first with well-ripened bunches of Buckland Sweetwater, followed closely by Mr. Warden with the same variety. Mr. Budd was third with Mrs. Pearson; several green lots of "Foster's" were shown in this. Mr. Budd was first with Madresfield Court, Mr. Warden second, showing the same variety, and Mr. Ward third with Black Prince. Several Melons were staged, the first prize going to Mr. Pratt for a large, well-coloured, and finely flavoured fruit of Longleat Perfection, Mr. Iggulden being second with the same variety. Out of several dishes of Peaches Mr. Evans secured first honours with splendidly coloured Royal George, the second going to Mr. Thos. Wilkins. In the class for Nectarines Mr. Budd was first with large well-coloured fruits of Elruge, and Mr. Iggulden second with fine fruits of Victoria. There was only one entry in each of the classes for Apricots and Plums, Mr. Iggulden deservedly obtaining the first prize in both.

For a collection of fruit, six kinds, in the amateur class, first Mr. Gregory, second Mr. John Currie. Messrs. Lovibond and Gregory were first and second respectively for two bunches of black Grapes, both showing fairly good bunches, Mr. Gregory and Mr. Currie taking first and second respectively in the corresponding class for two bunches of white. Mr. E. L. Brown was the exhibitor in the Peach class, and he showed the best dish of this fruit in the Show, Dr. Hogg. Mr. Gregory was the only exhibitor of a Melon in this class.

VEGETABLES.—There was only one class provided for these—namely, a collection of twelve kinds—the result being a capital competition of really good kitchen garden produce set up in really good style, though the awards in the first and second prize collections, which were very close to each other in point of merit, did not give general satisfaction to gardeners present at the Show. First Mr. Thomas Wilkins; second Mr. Haines, gardener to the Earl of Radnor, Coleshill House, Highworth, Berks; third Mr. A. Miller, gardener to W. H. Long, Esq., Rood Ashton Park, Trowbridge. Mr. Wilkins' best dishes were Cauliflowers, White Elephant Onions, small but even Tomatoes, good Canadian Wonder Beans, Marrows, and Leviathan Beans, his Globe Artichokes being very small, Cucumbers rather old, and somewhat irregular International Kidney Potatoes. Mr. Haines' only weak dish was Beet, his International Carrots (very fine), Duke of Albany Peas, Tomatoes, Woodstock Kidney Potatoes, and Leviathan and Canadian Wonder Beans being very fine. Mr. Pratt, who made his *débüt* as an exhibitor of vegetables, also showed well in this class.

CUT FLOWERS.—Roses were shown largely and well for the time of year. For thirty-six single trusses, distinct, T. W. Girdleston, Esq., Sunningdale, Berks, was first with fresh even blooms; Mr. G. Campbell, gardener to S. P. Budd, Esq., Bath, was a close second; third Mr. H. J. Gibbs, Stratford Sub-Castle, Salisbury, showing good blooms. Each exhibitor in this class secured a position in the prize list. In the next class for twenty-four trebles, distinct, Mr. Campbell and Mr. T. W. Girdleston exchanged places, and Mr. C. Warden was third. In the corresponding class for a like number of single trusses, distinct (not open to exhibitors in the two preceding classes), first Mr. J. Marlow, gardener to Mrs. Paxton, Cholderton House, Salisbury, showing even blooms; Mr. F. W. Flight, Twyford, Winchester, was second; and Mr. F. Smith was third. In the class for twelve spikes of *Gladiolus*, not less than six varieties, Mr. J. Evans was first, and Mr. R. West, gardener to J. R. Wigram, Esq., Northlands, Salisbury, was second. The class for eighteen bunches of cut flowers, distinct, was a good one. First Mr. J. Budd, with a very good collection of choice flowers—*Cattleya crispa*, *Thunia alba*, *Stephanotis floribunda*, and *Pancratium fragrans*; second Mr. J. Evans; and Mr. W. Iggulden third, both showing well. Mr. T. Hatch, jun., Salisbury, was first for eighteen Carnations or Picotees, not less than nine varieties, showing Mr. Dodwell, Yellow Queen, Charles Phillips, Pride of Penhurst, &c.; Dr. F. W. Coates a close second, and Mr. J. Evans was a good third.

For eighteen Roses, distinct, in the local amateurs' classes Mr. H. J. Gibbs was first with very good blooms; second Mr. F. Hatch; third Captain Napier, Elm Grove, Salisbury. With twelve Roses, distinct, Mr. F. Marlow, Fisherton, Salisbury, was first; Mr. H. G. Gregory second; and Mr. J. E. Nightingale, Wilton, third, all showing well. Zinnias were shown well by the Rev. A. B. Burnett, Winterbourne Saunsey, and Mr. T. S. Fletcher; as also were twelve bunches of cut flowers, distinct, by Messrs. Nightingale, Gregory, and Aylward, who secured the prizes in that order. For eighteen Carnations or Picotees Mr. T. Hatch and Dr. F. W. Coates were again first and second respectively, and Mr. Gibbs third.

For a dressed flower vase for decoration of dinner table there was a good competition. First Mrs. Chard, Clapham Common, London, with a very light arrangement of choice flowers; Miss Bessie Flight, Twyford, Winchester, being an excellent second; and Miss Lily Betts, Grove House, Salisbury, a good third. In the corresponding class for dressed flower vase for decoration of drawing room Mrs. Chard was again first with an equally light neat arrangement; Miss Agnes Flight, Twyford, a close second; and Miss Lily Betts third. Mrs. Chard was also first for three buttonhole bouquets, two lady's shoulder sprays; Miss Prewett, Hammersmith, London, being a good second; and Miss Matthews, Salisbury, third.

MISCELLANEOUS.—In the top end of the large tent in which the flowering plants were placed in the centre, and the fruit and vegetables on raised

stages on either side, the group of miscellaneous plants, Roses, and other cut flowers tastefully arranged by Messrs. Keynes, Williams & Co. of the Castle Street Nurseries, and having a miniature fountain playing in their midst, attracted a great deal of attention from visitors. The stands of Roses were backed up by decorative plants in variety staged by Messrs. Brittan and Son, The Waterloo Nurseries, Salisbury, at the lower end of the tent, containing the grand foliage plants in the centre, and having the Roses and other cut flowers arranged on the side stages.

SOUTHAMPTON SHOW.

JULY 31ST AND AUGUST 2ND.

THE Royal Southampton Horticultural Society has during the twenty-four years of its existence made a steady and satisfactory progress; its shows during that period have gradually improved, until they now rank amongst the best in the south of England, and are attended by a large number of the leading horticulturists as competitors. The Society is under the presidency of the Right Hon. Lord Montagu of Beaulieu, and the list of lady and gentlemen patrons includes the names of most of the leading inhabitants in the district. The summer exhibition has for some years been held in Westwood Park, and now that the Society has acquired this ground they enjoy special facilities for holding an extensive and handsome exhibition, and of which the Committee and hard-working Secretary, Mr. C. S. Fudge, know full well how to take advantage. Substantial prizes are, however, very needful to secure the attendance of competitors, and recognising this fact the Society provided in the most important classes three and in some cases four prizes of sufficient amount to render it worth an exhibitor's time and trouble to enter the lists. Thus in the open class for twelve stove and greenhouse plants £15, £12, and £10 constituted the prizes, and the slight difference in the value of the three prizes is an item of importance that other Societies might do well to consider in framing their schedules. Then in the nurserymen's and gardeners' classes for the same number of plants the prizes were in each case £10, £7, and £5. The President offered a prize of £5 for a collection of nine miscellaneous plants, three others being contributed by the Society. The Mayor and Corporation of the town gave a prize of similar amount for a group arranged for effect, and classes were also devoted to Orchids, Begonias, Ferns, Fuchsias, Pelargoniums, Achimenes, Celosias, Gloxinias, and Balsams, all of which constituted interesting features. The table decorations and cut flowers were similarly well provided for, fruit and vegetables having a number of classes devoted to them.

An excellent show was provided on Saturday last, one of the best the Society has held for some years. Two large tents, each about 150 feet long, were devoted to the specimen plants and groups, which formed a most beautiful display. The stove and greenhouse plants in particular were admirably represented, the competition being keen in nearly all the classes. There was a good proportion of flowering and fine-foliage plants, the Crotons, highly coloured, Ixoras, Allamandas, Statice, Bougainvilleas, and Heaths predominating amongst the former, and Palms and Cycads amongst the latter. Seven tasteful groups of plants were staged for the Mayor's prize, and these nearly filled one of the two tents named. One of the most remarkable specimens shown was a plant of *Trachelium cœruleum* from Mr. Molyneux, which we have never seen in such fine condition at any exhibition, and those who are only familiar with the plant as it is grown for conservatory decoration could form no idea as to its beauty when of specimen size and in such condition as that referred to. It was about 4 feet high and as much in diameter, with fifty or sixty grand trusses of its purple flowers 6 inches and more in diameter. The stems were secured to stakes, but they were not too conspicuous, and the plant altogether was very satisfactory. Mr. Cypher also had an exceedingly handsome specimen of *Phœnocomma prolifera* Barnesi, 4 feet high, 5 feet in diameter, wonderfully vigorous, growing as freely as a Pelargonium, and showing nothing of the sickliness too often apparent in such plants. Many other specimens might be particularised, but they are mostly mentioned in the following notes. Tents were also devoted to fruit, vegetables, and cut flowers, which were numerous shown, and of excellent quality throughout the classes.

The Hants Bee Society held their Show in the same ground, and the Patrons, H.R.H. Princess Beatrice, visited Southampton, accompanied by Prince Battenberg, to open both exhibitions. It was quite a gala day in the town, which was profusely decorated with flags and bunting, triumphal arches, &c., and the weather being remarkably fine rendered the event a great success. There was a very large attendance of visitors on Saturday and again on Monday, special attractions in the way of fireworks, bands, &c., being provided in addition to the Show.

PLANTS.—In the great class for twelve stove and greenhouse plants, Mr. Lock, gardener to B. W. Cleave, Esq., Newcombe House, Crediton, was first with a gigantic *Latania borbonica*, *Kentia Belmoreana*, and *Cycas revoluta*, a large and highly coloured *Croton Warreni* 5 feet in diameter, *Ixora coccinea* very fresh and well flowered, *Statice Holfordi*, and a magnificent *Croton Williamsi* 6 feet in diameter, and excellently coloured. Other plants were *Dipladenia amabilis*, *Erica Thompsoni*, and *Anthurium Schertzerianum*, much smaller; a large *Encelapartos villosus*, and a good *Erica ampullacea* Barnesi. Mr. J. Cypher, Cheltenham, took the second place, but few points behind the first, his *Phœnocomma*, already noted, being his best specimen. Mr. C. Rann, gardener to J. Warren, Esq., Handcross Park, Sussex, was third with strong plants, the Palms being especially fine, but the Crotons were rather deficient in colour.

Class 2 was for the same number of plants from nurserymen, and in this Mr. J. F. Mould, Pewsey, was first with medium-sized plants. *Erica Mar-nockiana*, *Clerodendron Balfourianum*, and *Kalosanthes coccinea* were the best. *Croton Andreanus*, though of good size, was poorly coloured, and *Allamanda nobilis* had few flowers. Mr. H. James, West Norwood, was second with well-grown plants of *Allamandas*, *Dipladenias*, *Kalosanthes*, &c. Messrs. J. C. & H. Ransom, Hill Lane, Southampton, were third, having *Croton Mortii* finely coloured.

In the amateurs' class for twelve specimens Mr. E. Wills, gardener to Mrs. Pearce, The Firs, Basset, secured first honours, showing *Cycas revoluta* in good health, *Statice profusa* finely flowered, *Phœnocomma prolifera* Barnesi of good size and very healthy, *Clerodendron Balfourianum* very handsome, and several other good plants, *Bougainvillea glabra* being the weakest. Mr. Amys, gardener to the Hon. Mrs. E. York, Hamble Cliff,

was a good second with large handsome plants, a *Rhynchospermum* being one of the best. The third place was taken by Mr. N. Blandford, Moor Hill, West-end, who had two fine *Allamandas* named *Hendersoni* and *Schotti* but thought to be the same.

For nine miscellaneous plants, Mr. E. Molyneux, gardener to W. H. Myers, Esq., Swanmore Park, Bishops Waltham, won chief honours with capital plants, including the *Trachelium* previously described, *Crotons* Queen Victoria and variegatus, 5 and 6 feet in diameter respectively, and both grandly coloured, *Allamanda Hendersoni* well flowered, a rather yellow *Bougainvillea glabra*, with vigorous plants of *Alocasia macrorrhiza variegata*, *Latania borbonica*, *Seaforthia elegans*, and *Areca lutescens*. It was a surprise to many to see Mr. Molyneux showing so well in this class, and it is to be hoped that he will be seen more frequently at such exhibitions. Mr. J. Reynolds, gardener to Col. the Hon. H. Crichton, Netley Castle, and Mr. W. Peel, gardener to Miss Todd, Sedford Lodge, Shirley, followed in the order named, both exhibiting well.

The display of Orchids was necessarily limited at this season, but there was one beautiful group of well grown plants and choice varieties from H. J. Buchan, Esq., Wilton House, Southampton, including some profusely flowered plants of *Dendrobium Dearei* and a wonderfully fine *Cattleya crispa* superba with six racemes of eight flowers each. Other notable plants were *Oncidium Lanceanum*, *Odontoglossum Uro-Skinneri*, *Miltonia Regnelli*, *Epidendrum vitellinum majus*, and *Odontoglossum crispum* varieties. For this group Mr. Buchan obtained the premier prize in class 6 provided for a group of Orchids and Ferns arranged for effect in a space 6 feet by 4 feet, and it was surprising what a pretty effect was produced in so small a space. From the same garden came a good specimen of *Calanthe veratrifolia* with ten spikes. Mr. Budd had strong plant of *Dendrobium moschatum* with eleven racemes of twelve and fourteen flowers each. Mr. Budd showed *Aerides quinquevulvum* with three fine spikes, and Mr. H. James had an example of the curious *Acineta Barkeri* bearing a stout spike of twenty-four powerfully fragrant flowers.

An interesting and important feature of the Show was formed by the seven groups in competition for the prize offered by the Mayor and Corporation of Southampton. The plants were required to be arranged for effect in a half-circle measuring 16 feet in diameter, and the tallest plants were not to exceed 7 feet in height. Much difference was noticeable in the style adopted by the different exhibitors, but Mr. H. James, Castle Nursery, Norwood, was rightly awarded the premier prize for a light and graceful arrangement. *Cocos Weddelliana* was freely employed as the background with *Adiantum* and *Asparagus tenuissimus* as the foundation, and a neat margin of *Caladium argyrites*, *Isolepis gracilis*, and *Cyrtodeira fulgida*, the flowering plants forming the body of the group consisting of *Carnations*, *Ixoras*, *Disas*, *Cattleyas*, *Odontoglossums*, *Dendrobium Dearei*, *Epidendrum vitellinum*, and *Cypripediums*. Messrs. J. & H. Ramson, Hill Lane, Southampton, were placed second with an effective and varied group, but not so light as the first. The Hon. H. Crichton, Netley Abbey, was third, Mr. E. Wills fourth, and Mr. J. Amys fifth. In the other classes of Ferns *Begonias*, &c., the entries were numerous and the plants good, the local competitors well maintaining their reputation as skilful cultivators.

The premier exhibitor in the table decoration and bouquet classes was Mr. J. Cypher, who had some very tasteful contributions. Mr. A. J. Trowbridge and Mr. H. Rogers of Balham also exhibited well. Messrs. Keynes, Williams & Co., Salisbury, were the premier exhibitors of cut Roses, showing some handsome, fresh, highly coloured blooms, and Mr. Molyneux took the lead with a pretty collection of hardy flowers.

FRUIT.—For eight dishes of fruit Mr. H. W. Ward, gardener to the Right Hon. Earl of Radnor, Longford Castle, Salisbury, was first with Black Hamburg Grapes, well coloured; Muscat of Alexandria, bunches and berries good, but not highly coloured; Moor Park Apricots, Victoria Nectarines, Elton Cherries, Brown Turkey Figs, Dr. Hogg Peaches, and a Melon. Mr. J. Evans, gardener to Louisa, Lady Ashburton, Melchet Court, Romsey, followed, Gros Colman Grapes, very large, but one bunch had suffered on its journey; good bunches of Muscat of Alexandria, but rather green; a fine Best of All Melon, and large Barrington Peaches.

There was good competition in the Grape classes, especially for three bunches of black Grapes, in which there were eight entries. Mr. W. Pratt, gardener to the Marquis of Bath, Longleat, Salisbury, led with large bunches of Black Hamburg, well coloured; Mr. E. Molyneux was second with smaller bunches, but admirably coloured; Mr. Warden, gardener to Sir F. H. Bathurst, Bart., Clarendon Park, Salisbury, was third with Black Hamburg, even bunches of medium size, the berries large and colour good; the fourth prize was taken by Mr. W. Sanders, gardener to J. East, Esq., Longstock House, Stockbridge, who had Madresfield Court in fair condition but wanting colour. For two bunches of black Grapes, Mr. W. Browning, gardener to J. Wylie, Esq., West Cliff Hill, Hythe, was first, showing Black Hamburg, well ripened but small in berry; Mr. Axford and Mr. J. Allen followed.

Five exhibitors contributed three bunches of white Grapes, Mr. W. Pratt leading with grand bunches of Muscat of Alexandria, but not at their best as regards colour. Mr. J. Budd, gardener to F. G. Dalgety, Esq., Lockerly Hall, near Romsey, was second with the same variety, much smaller. Mr. W. Wildsmith, gardener to Viscount Eversley, Heckfield Place, Winchfield, was third with Golden Queen, and Mr. C. Warden fourth with Buckland Sweetwater. With two bunches of white Grapes Mr. J. Allen, gardener to J. Bailey, Esq., Elmfield Hill; Mr. W. Sanders; Mr. A. Richards, gardener to D. Norton, Esq., The Dell, Bonchurch, Isle of Wight; and Mr. J. E. Axford, gardener to C. M. Shipley, Esq., Twyford Moors, Winchester, was fourth, none of the exhibits being remarkable. With one bunch Mr. T. Budd was first for Muscat of Alexandria, a large bunch; second Mr. W. Sanders; third Mr. W. Hills. For a scarlet flesh Melon Messrs. W. & G. Drewer were first, and for a green flesh variety Mr. W. Sanders took the first place. Hardy fruits were also well shown by local exhibitors.

VEGETABLES.—These were excellently shown by several exhibitors, the produce being all very clean and well grown. For a collection of twelve varieties, Mr. Cox, gardener to R. K. Wyndham, Esq., Corhampton House, Bishops Waltham, taking the lead with good Onions, Cauliflowers, Tomatoes, Beet, Beans, Cucumbers, Potatoes, Celery, Peas, Vegetable Marrows, Artichokes, and Carrots. Mr. Richards, gardener to the Earl of Normanton, Ringwood, Hants, was placed second, but several experienced growers thought he was entitled to the first prize, though after being very carefully

"pointed" it was found that they were exactly the same. He had fine samples of White Elephant Onions, Perfection Tomatoes, Moore's Cream Vegetable Marrow, Canadian Wonder Beans, Lapstone Kidney Potatoes, Sutton's Gem Carrots, Early London Cauliflowers, Green Globe Artichokes, Snowball Turnips, Pragnell's Exhibition Beet, Duke of Albany Peas, and Vicar of Laleham Potatoes. Mr. W. Sanders was third, having Perfection Tomatoes fine, Mr. J. Ams being fourth. For nine dishes of vegetables Mr. Molyneux took the lead with excellent samples, very similar to those shown by Mr. Cox in character and quality—Daniel's White Elephant Onions, Trophy Tomatoes, and Duke of Albany Peas being very fine, followed by Messrs. Allen and Axford.

Miscellaneous non-competing exhibits were not very abundant in the tents, but outside the local tradesmen showed garden implements and appliances very numerous. Messrs. J. Laing & Co., Forest Hill, had collections of Tuberous Begonia and Hollyhock blooms, both fine and rich in colours, the former well representing the excellent varieties for which the firm is noted. The collections were very highly commended. Messrs. W. H. Rogers, Southampton, contributed a beautiful group of Humeas and Conifers, with variegated Euonymus and Coprosma Baueriana, Hydrangea paniculata grandiflora, and other plants tastefully arranged. This was also very highly commended. Mr. F. Wehber, Tunbridge, Kent, showed a handsome bouquet of the lovely yellow Carnation Pride of Penshurst, which was greatly admired and commended. Mr. W. Gilbert, Bishops Waltham, also had some Carnations, which were commended.

PHAJUS HUMBLLOTI.

SIR TREVOR LAWRENCE, Bart., M.P., sent a plant of this distinct Orchid from his rich collection at Burford Lodge, Dorking, to the meeting of the Royal Horticultural Society on July the 13th, when the Floral Committee awarded a first-class certificate for it, and to which it was indisputably entitled.

We have several notable species of Phajus in cultivation, *P. grandifolius*, for example, being one of the really useful Orchids, easily grown,



Fig. 17.—Phajus Humbloti.

and though not so attractive as many other members of the family, its tall racemes of flowers have a good appearance and last well. It is an old garden plant, and was known many years ago as *Bletia* or *Limodorum Tankervillei*, under which title it is found in most of the publications early in the century. *Phajus Blumei* is another old plant, which as *Limodorum Incarvillei* was grown by the earlier cultivators of Orchids. But one of the most beautiful is *P. tuberosus*, which awakened the interest of Orchid growers when it first flowered in this country a year or two since.

P. Humbloti bears the name of a traveller and collector who found the plant, and though the name has been given as *Humboldt* under the supposition that it referred to the great traveller and writer, Humboldt. It is a handsome plant with long plaited leaves and stout globular pseudobulbs. The scapes rise well above the leaves, and bear six to eight flowers, which are about 2 inches in diameter (fig. 17), the sepals and petals of equal size, oval, and of a pale rose colour, the lip curiously winged at the base, contracted in the centre and bright rosy purple, white at the base and with yellow central crest, the column being slender, curved, and bright green. It is a valuable addition to the cultivated species.

CHANGES IN FLOWERS.

ENCLOSED herewith you have a specimen flower of *Hyacinthus non-scriptus*. It is one of many similar forms. But what interests me most is a clump of a blue variety embosomed in a hedge, but exposed to the east. It has gradually changed from dark blue to light blue, then striped, then to nearly white. This year one spike has come pure white, but it is so near the original clump that I cannot say whether it is a seedling or from a bulb of the original. Some six or seven years ago I transplanted, early in May, a lot of the Pheasant-eyed Narcissus, and they have gradually changed from single to double, being highly tinged with the red of the eye, while a yellowish colour is suffused throughout the petals, resembling a good deal the "Butter and Egg" Daffodil.

Is the custom of growing many of these old-fashioned flowers in woods and shrubberies dying out? I remember when I was a boy many flowers now to be seen only in gardens grew profusely in the woods, on the lawn,

and in the shrubbery near mansions, but now few are seen. Most of the bulbous roots succeed in the woods, and basketfuls of flowers can be pulled therefrom without baring the place too much or interfering with those in the garden. It was only the other day I was on a visit to a place a few miles from here. The lady with whom I am acquainted passed through the conservatory, all the other houses, and the garden. She then entered the wood, and there she found and pulled a nosegay of Hyacinths and Narcissuses, more to her taste than all the other flowers in the houses and garden. She waived it towards me, so that I felt and enjoyed the fragrance that is not easily surpassed. I entered into conversation with her as to the desirability of extending the varieties and culture of these sweet and homely flowers, to which she agreed, and orders were given to the gardener to carry her wish out.

The times are changed now from what they were fifty years ago. Then fruit and flowers could be grown safely in situations where everything is destroyed now. A sample of home rule, I suppose. In Scotland we are told to grow fruit, but we get no protection from the police when we do so. I have caught the thieves over and over again, but the police have never as yet made a case. I used to sell £30 of fruit from my garden; I do not sell £1 worth now.

There is amongst a certain class a wholesale Vandalism—nothing of beauty can be let alone. I will only mention one case of hundreds that I could cite. Eight years ago a proprietor near me threw his house open to a trip. The fruit and other trees were in bloom at the time, which were completely destroyed, and so completely were the trees denuded of their branches that many of them yet stand as if they had been pollarded without any growth following.

Your remarks to "Wilfrid" on wild flowers, page 520, brings me to another evil. Two years ago I was on a visit to a gentleman whose place is situated near an orphan's home. When I went the wayside were lovely with a profuse bloom of many varieties of wild flowers. Amongst these beauties I spotted a lovely white large Campanula which I intended to appropriate on my way back, but to my disgust what was a carpet of flowers and loveliness in the morning was as bare and barren-looking as if a swarm of locusts had passed over the place—every flower and green thing destroyed, and my Campanula amongst them. A little way further on I met with the depredators, who were the orphans and nurses or teachers, and in the breast of one I spied my drooping white Harebell; others carried a few of the now languid and withered flowers, and the road was strewn with the remainder, and the place that would have been beautiful and pleasant for others to see and admire for long was ruthlessly destroyed by the very persons that should have taught otherwise. But this is not the worst. Boys from the same home entered private grounds and pulled the flowers. When the superintendent was spoken to on the subject he said his boys would not be guilty of such a thing; but I saw them.

Some years ago a liberal gentleman in England threw his garden open to the public, but so ungrateful were they for the privilege that instead of guarding plants from harm, they wrought much destruction. At last a notice was put up that the first depredator would be punished. A woman was caught pulling a flower valued at a few pence. She was taken before a Judge. To him the case appeared a bad one owing to so much previous destruction. He gave her a severe sentence. A Glasgow paper commented upon it, and the strictures were severe upon the Judge. The editor of the paper rolled the ball so long, which he thought was a good one to get sympathy from those who do not respect property, and the result was that he managed to work upon the feelings of the Lord Advocate, who got an Act passed against punishing youths below a certain age, hence the cause of so much destruction in gardens and to private property by youths, and the habits of fiscals being against making a case against youths committing crime trains them to be criminals. When crime is allowed to go unpunished, it is safe to say that we live in troublesome times, and have great need of reform.—W. T., *Blantyre*.

[The flower enclosed in the letter of our correspondent was so dried and crushed in transit that all we can say of it is it was an extraordinary conglomeration of distorted petals and abortive stamens, the change from the normal condition being so great that we suspect no botanist could have recognised the species. The change of the Narcissus recorded is a very interesting circumstance.]



HARDY FRUIT GARDEN.

STRAWBERRIES.—Early runners should be used for every purpose, in order that all the plants may be strong and have large full crowns when growth is practically over in autumn. In our note a fortnight ago we only mentioned the planting of new beds, early attention to which is of the utmost importance. It must not be forgotten that there are many gardens wherein space cannot be afforded for new beds at this season of the year. For such gardens spring planting is recommended, and provision of plants should be made now by making nursery beds of strong runners. We have often had to do this, and we find it convenient to use

a spare piece of ground in the soil yard. A raised bed is made of leaf mould and coal ashes, in which the runners root freely, and the plants are subsequently transplanted with a large mass of roots and soil. Old beds, when the fruit is all gathered, should have all the runners cut off and cleared away with any weeds or rubbish; a dressing of old stable or farm-yard manure is then dug in among the plants without loss of time, our object being to promote a strong growth of roots, foliage, and crowns, and thus lay the foundation of a fine crop of fruit next season. Exhausted beds should be hoed up at once, and the space turned to account for vegetable culture. We may mention that there is no reason why Strawberries may not be grown in the same place for an indefinite period if the soil is porous, well drained, and has an annual dressing of manure.

PEACHES AND NECTARINES.—The fruit is now swelling fast, the crop is a full one, and we take care to give the whole of the border a thorough drenching with sewage every week to promote the growth of fruit, foliage, and wood. A close watch is kept upon the foliage, and syringing with clean water is resorted to to keep down red spider, especial care being taken to force the water well among and underneath the leaves. Sub-lateral growth is now carefully kept down by judicious pinching, but we do not remove foliage which covers fruit till the fruit is fully grown, then full exposure to sun and air for a week or two imparts both colour and flavour. The fruit of Early Beatrice Peach is exposed fully to the sun sooner than that of most other sorts, for we have found attention to this matter well repaid by colour so beautiful and flavour so excellent as renders this Peach worthy of a place among the best sorts. Grown under glass its fruit is insipid and altogether inferior, but from the open wall it is quite delicious.

FRUIT FORCING.

PINES.—*Preparing Houses for Plants.*—Houses as they become vacant should be thoroughly cleansed before being re-occupied with plants. The first thing to be seen to is the bed. If the bottom heat is furnished by hot-water pipes there will still be the plunging material, and if tan or leaves be employed for bottom heat they should be removed, or part of them, at least once a year, for predatory vermin, particularly woodlice, increase rapidly, and are a source of much annoyance. Sometimes tan with hot-water pipes beneath is provided for bottom heat. In any case everything should be placed into thorough order. Brush brick-work with hot lime, the wood and iron work with soap and water, keeping the soapy water as much as possible from the glass, which ought to be cleansed with water only. Any necessary repairs should be effected, and the wood and iron work painted. Beds that are chambered—*i.e.*, the hot-water pipes covered with slates or other material, are much in advance of those surrounded and passing through rubble. The beds composed of the latter must be turned over, and any dirt or small parts removed to allow the heat given off by the pipes to penetrate the whole and diffuse uniform temperature to the bed. New material will be required for beds. Provide fresh tan, of which 3 feet in depth is ample, where there are pipes placed beneath. If wet turn it a few times, especially on fine sunny days.

Potting Rooted Suckers.—Plants started as suckers in June will soon have filled the pots with roots, and should be shifted into larger pots before the roots become very closely matted. Queens should have 9 and 10-inch pots, and varieties of stronger growth 11-inch pots. There is no better compost than rather strong turfy loam stacked long enough to destroy vegetation. This, torn with the hand, and a quart of soot added to each bushel of compost, will grow Pines exceeding well. Pot firmly, and keep the plants well down. Supply water immediately after potting, and plunge in a bed having a temperature of 90° to 95° at the base of the pots. Allow the plants plenty of room, there not being a greater mistake in Pine-growing than crowding young plants. The plants, when crowded, become drawn and weakly instead of being sturdy.

Re-arranged Plants.—Look to the bottom heat of beds that have been recently upset by the removal of plants, not allowing the heat to exceed 95° at the base of the pots without immediately raising them, as too much bottom heat will disastrously effect plants with fruit, or those having the pots filled with roots. Water the plants about twice a week, and maintain a moist, genial, well-ventilated atmosphere. The weather is now so favorable that Pine plants grow luxuriantly, therefore discontinue any shading such as may have been employed for an hour or two at mid-day when the sun was powerful through the months of May, June, and July, the plants after this having the benefit of every ray of light, admitting air plentifully when the temperature reaches 85°, but not to lower it, but keep it between 85° and 95°, affording fruiting plants a night temperature of 70° to 75°, and succession 65° to 70°. Reserve, if possible, suckers on the stools for starting at the commencement of September.

CUCUMBERS.—Any frames at liberty may yet be filled with young plants upon a bed of fermenting materials, which will give a supply of fruit in September, and continue it to near Christmas if due regard be paid to lining the bed and to protecting the plants by mats over the lights in cold weather. Let plants in frames or houses be cut regularly once or twice a week, removing exhausted growths to make room for young bearing shoots. Keep the shoots stopped to one joint beyond the fruit, or, if the plants are vigorous and showing no signs of exhaustion, stop at the fruit. Enfeebled plants must have the young growth encouraged, lightly cropped, and assist root-action by a surface dressing of fresh loam and a mulching of short manure. Afford liquid manure twice a week to plants carrying full crops, and water as necessary, being guided by the state of the soil, over-watering making the soil sodden and sour, and too little causing a stunted growth. Syringe in the afternoon of

bright days, and close early, but avoid late syringing, having the foliage fairly dry before sunset, and commence ventilating early in the morning, keeping through the day at 85° to 95°, 75° by artificial means, and 65° to 70° at night. Preparation must be made for getting out the autumn fruiters without delay.

STRAWBERRIES FOR FORCING.—The plants will by this time have been rooted in small pots, or layered in the large pots, both systems having their advocates. If layered in small pots they should be transferred into the larger sizes as soon as they become well rooted, 5-inch being most suitable for early forcing, and 6-inch for midseason and late work. Good turfy loam with a fifth of well-decayed manure and a quart of soot, or any of the advertised fertilisers, to each bushel of compost, will grow them well. Drain efficiently, and pot firmly. Stand them on a base impervious to worms, and keep them duly supplied with water, removing all runners. They should have an open situation, but if possible, sheltered from winds. Good for early forcing are La Grosse Sucrée and Vicomtesse Hericart de Thury; for mid-season, Sir Harry, Bathwell Bank Prolific, and President; for late, Sir Charles Napier and Dr. Hogg.

VINES.—*Late Grapes.*—To insure these keeping well the Vines need to be started early and thoroughly ripened. The Grapes in houses started in February will now be colouring. Good Colman and Gros Guillaume take a longer time to ripen than most others, and they should have a house to themselves, where they can be given plenty of heat and abundant supplies of water. Muscats and Lady Downe's cannot stand the direct rays of the sun through large panes of glass, but there is a considerable difference in their requirements—*viz.*, Muscats must have plenty of light to give them the golden colour that denotes high finish; Lady Downe's finishes well under foliage; indeed, black Grapes colour in proportion to the foliage, but white Grapes appear to require more light and the shoots thinner. A night temperature of 70° should be maintained, with a little ventilation at the upper part of the house, and very free ventilation by day until all danger from scalding is past. When the colouring commences fire heat will be necessary to induce a minimum temperature of 70°, and 85° in the daytime, with moderate ventilation at night and in dull weather, so as to secure a circulation of rather dry warm air, proportionately increased on fine days. The roots must not be neglected in the supply of water, but if they have been too dry during the swelling period an excess of water will only accelerate shanking—indeed, neglect of water in swelling and mulching, so as to keep the roots active near the surface, are prolific of disaster, as Vines carrying heavy crops afford a plentiful harvest of shanked berries. Let the borders inside and out have a good soaking with liquid manure in a tepid state, or water as may be considered advisable, for the manure will require a good supply of nutriment for some time yet.

Regulating Growth.—Although we advise the extension system in preference to the restrictive, it is not desirable to allow the laterals to be crowded before pinching them, as it gives a severe check, large reductions of foliage at a time often resulting in shanking through loss of roots; therefore keep the laterals well in hand, and do not allow more foliage to be made than can have exposure to light to elaborate the sap and feed the buds at their base.

Young Vines.—Keep these in full growth by maintaining a moist atmosphere, and encourage all the growth practicable, subject to the part that is to be retained for next year's fruiting having the principal leaves fully exposed to light, the laterals being stopped, so as to concentrate the force of the Vines in the buds that will be reserved for fruiting next season. Supernumeraries should have the laterals stopped to about 8 feet up the canes, above which lateral extension may be allowed. Close early with plenty of sun heat, and keep the surface of the border moist and mulched, so as to keep the roots active near the surface.

Ripe Grapes.—In order to preserve black Grapes at this season as long as possible it is essential that the Vines have good foliage, so as to prevent the sun taking the colour out of them, or if the foliage be thin a slight shading will be necessary. Examine the bunches occasionally for shanked or decayed berries, and keep the house cool, well ventilated, and moderately dry, slight moisture not being injurious to the Grapes.

PLANT HOUSES.

Hybrid Perpetual Roses.—All plants intended for early forcing next season may with safety be repotted. Young plants potted last autumn in 7 and 8-inch pots may be transferred into others 2 and 3 inches larger. The drainage from these need only be removed, and loose soil from the surface of the ball unless the soil is sour or has become saturated. If in this state shake the whole from the roots, and return the plants to the same size pots in which they have been growing. Plants in 10-inch pots should have their roots reduced about one-third, and then be returned into the same size pots, or smaller, according to their condition. If the stock upon which the youngest plants are worked was not completely buried when they were first potted, they should be placed as low in their pots as possible. The soil should be pressed firmly round the roots. Before potting be careful that the roots of the plants are in an intermediate state for moisture. These varieties do well in fibry loam, one-seventh of decayed manure, one 6-inch potful of bone-meal, and the same quantity of soot to each harrowful of soil. If the loam is light, dry some clay, and then reduce it to powder, and add one-seventh to the loam before the other ingredients are incorporated. After potting plunge the pots and cover the surface of the soil to prevent evaporation. If this is done, and the plants liberally syringed twice daily during dry weather, they will need no water at their roots. The roots will have filled the pots before it becomes necessary to place them under cover in autumn.

Tea Varieties.—Those that are planted out under glass, and intended

for early forcing, must have abundance of air day and night to harden and ripen their wood. They must be syringed at least once daily to keep their foliage clean, and watered at their roots whenever they need it. If the last is not attended to they are certain to become a prey to mildew, which if once established in the house may prove a source of trouble for a long time. All the flower buds that appear from this date should be removed, so as to give the plants every opportunity of growing and flowering well when they are required to do so. Plants in pots may now be turned out and repotted. The soil used for these should be of a lighter nature than advised for Hybrid Perpetuals. If the loam is moderately light add about one-third of leaf mould to it, and it may require a little sand. These plants should be restaked and their branches tied, and then either plunged outside and treated the same as the H.P.'s or placed again under glass until they are partially established in their pots. They are better outside, when once established, for two months, and then if properly treated when housed will yield abundance of buds until Christmas. The remaining portion can be started into growth to succeed them. The plants harden and ripen their growth outside, and when placed in a temperature of 50° to 55° break quickly into growth and flower freely.

Young plants that it may be necessary to grow on and are now vigorous in 6 or 8-inch pots may be transferred into others 2 inches larger. These plants, if grown under glass, will give a good autumn supply of flowers and bloom again abundantly towards the end of March or early in April. Young plants rooted in the spring and now in 5-inch pots may be placed into 7-inch pots. They should be grown under glass, removing all flower buds as they appear, so as not to induce the plants to make growth until the end of September, when they may be allowed to flower. Gloire de Dijon, William Allen Richardson, and all of similar growth that have been trained up the roof close to the glass will have made abundance of firm wood by this time. When these are well ripened early in the season and kept under glass they often start into growth in autumn and flower irregularly. To prevent this the plants should be turned outside and secured to a wall until the end of September. They can then be trained round stakes ready for housing after the first frost or two. When removed the position they occupied can be given to others of later growth.

Exhausted Plants.—Any plants, whether Tea or Hybrid Perpetuals, that have become bare or exhausted from continuous forcing, may be stood outside and left in the pots in which they have been growing. They can either be taken out and repotted now or left until the spring, which is preferable. They should be partially pruned in autumn, so that they will stand in a cold frame and finally pruned close back to near the surface of the soil early in January. These old plants will, if given cold frame treatment, produce very strong shoots, and during the season make bushy healthy specimens.

Striking Cuttings.—For growing on in the place of any plants that may be discarded after flowering in spring a good batch of cuttings should now be rooted. In order to maintain a healthy stock of Gloire de Dijon, Maréchal Niel, Rêve d'Or, and others, cuttings should always be rooted at this season of the year. Plants established in 5-inch pots and wintered in a cold house make earlier and stronger growth than if propagation was deferred until the early part of the year. If half-ripened wood is selected for cuttings they will root freely at this season, either in a handlight under glass in a coolinery or behind a north wall. Two or three joints are ample for a cutting, and may be inserted in all sand in preference to a mixture of soil and sand. When rooted the tender brittle roots can be lifted out of sand without breaking them with greater freedom than out of soil. The roots also appear to extend more rapidly in sand than soil. A good soaking of water should be given when inserted, and the handlights kept air-tight until they are rooted. Directly they are rooted place them singly into 3-inch pots, and grow them on in a close frame until they are ready for 5-inch, and when they are established in these they may have cool treatment under glass.

THE FLOWER GARDEN AND PLEASURE GROUND.

Propagating Roses.—Dwarf plants on their own roots are the best for most soils, but as these cannot often be procured, those who can get suitable cuttings should endeavour to raise their own stock. There are two ways of striking cuttings, one being under handlights at the present time, and the other with well ripened growth in October and November, much as we would Gooseberry cuttings. It is to the former and least practised method we will at present confine our remarks. The best position for striking cuttings at this time of the year is at the back of a north wall, and either handlights or bottomless boxes, closely covered with squares of glass, are required for the purpose. In these should be placed 3 or 4 inches of gritty sandy soil faced over with more of the road grit, or failing this silver sand. The cuttings to be preferred are short firm shoots that have recently perfected a bloom, and these should be taken off with a heel, and if necessary shortened so as to reduce them to about four joints. If a sufficiency of these cannot be procured, then medium-sized firm shoots may be cut up into lengths of three or more joints, trimming off the lower leaves, and cutting clean across below the lowest joint. The lowest buds ought not to be removed, as these will eventually push up strong shoots, thereby greatly improving the plants. As fast as the cuttings are made they should be dibbled in firmly and about 4 inches apart each way. If allowed to lay about for an hour or two after they are cut from the parent plants, a failure to strike will be almost certain. They should be watered in, and the glass kept closely over them until they are rooted, which may take place in about a month, when they ought to receive plenty of air. If the position is at all open to the full sunshine at the hottest part of the day, the cuttings must be

carefully shaded at that time, or they will lose their leaves and fail to strike. These summer-rooted plants may either be potted or bedded out on good ground where they will be sheltered somewhat, this being done in October or early in November before the leaves fall, and they may then form a few fresh roots before the weather sets in. In cold districts it may be advisable to allow them to remain where they were struck, as they can then be more readily protected in severe weather. We are alluding principally to the Hybrid Perpetuals, but we have struck Gloire de Dijon, Maréchal Niel, Souvenir de la Malmaison, Safrano, Devoniensis, Catherine Mermet, and other Teas in a similar manner. Only the cuttings were obtained from plants trained on sunny walls. It is useless to attempt striking soft unripened growth.

Budding Briars.—The recent rains will have been favourable to this work. In dry hot weather the buds do not separate readily from the wood, neither do the bark of the shoots to be budded open freely. The rains or heavy soakings of water correct this, and directly it is found that they are in good condition a start should be made. About three shoots on each Briar is ample. Select plump but not far advanced buds, use a sharp knife for cutting this away from the wood, the small piece of wood accompanying the bud being carefully separated, without, however, removing the heart. If the latter comes away with the wood it useless to insert the bud into the Briar. Insert the bud in a T cut, and between the bark and the wood of the Briar shoot, the smooth bone handle of a budding knife being the best for opening the bark. The bud should be carefully slid in so as to be near the main stem of the Briar as possible, and should face outwards. Many novices are apt to fix the buds 1 inch and even 2 inches from the main stem, where the shoots which eventually form are much more liable to be blown out than they would be if only one-quarter inch, or rather more from the stems. The closer they are to the stems the sooner they become firmly attached. The buds, whether on the branches or removed, ought to be kept moist till they are inserted, should at once be bound in with matting or worsted, and in very hot weather are best shaded with Cabbage or Rhubarb leaves.

Late Bloom on Roses.—The very hot and dry weather experienced late in June and early in July had the effect of rapidly opening all the Roses, and the season was much shortened thereby. The dwarfs were the least affected, and these are now pushing up strong young shoots, which will give a good succession of bloom till injured by frosts. In order to assist the plants and to improve the quality of the blooms it is advisable to lightly shorten all the old strong-flowering growths, picking off all dead blooms, and at the same time any deformed buds that may be formed. Then if sufficient rain has not fallen a good soaking of soft water or weak liquid manure may be given with advantage. We also make a point of disbudding early and freely, so as to concentrate the strength of the plant on a few well-formed buds, and the superior blooms resulting give more pleasure than do clusters of thin and much smaller blooms. It is useless to do this disbudding after the buds are far advanced, but it should be done as soon as they are large enough to be rubbed out without injuring those reserved. No trimming should be resorted to in the case of the Maréchal Niel on walls, but the long strong shoots should be retained to their full length, and carefully tied or nailed in, and unless injured by very severe frosts will next season develop fine blooms at nearly every joint. Gloire de Dijon shoots formed early will, if preserved, frequently develop a strong bloom at the ends and many late blooms throughout their entire lengths. It is only the earliest shoots that do this, but many of the later ones may also with advantage be laid in to their full length, these blooming early next year. It should be remembered that this fine old Rose is very apt to become exhausted, and large trees may be irreparably ruined before their owners have realised that they ought to have been well fed at the roots.

BOILERS.—I should be pleased to know if any of the readers of the Journal have had experience with Keith's patent sectional challenge boiler, and if it is suitable for heating horticultural buildings, and what fuel is the best for it? My employer wants me to have one, but I have had no experience with it.—A. S.

THE BEE-KEEPER.

SEASONABLE NOTES.

THE weather up till the 26th July was very changeable. The honey season seldom extends beyond this date, and this year with us it has not yet appeared. There have only been seven days in July that bees stored any surplus, and these days occurred at intervals being all the worse for the secretion of honey. There have been only two consecutive fine days, and the weather is, while I write, gloomy with a low temperature. There are some localities where a fair surplus has been gathered, but with us it is much below the average.

During the height of the Clover season, and for three days in succession, the wind blew a perfect hurricane, never before experienced here in July. At least 50 per cent. of my hives have swarmed, which not only gave extra labour, but taxed my ingenuity to make the most of them. I have often stated the

impossibility of preventing bees swarming when once they have made up their minds to raise queens, which I still adhere to. I therefore need not say more on that at present, further than do not try to prevent it. Bees will not work much while queen-rearing is going on, but the swarm will, and two joined will go ahead in fine style. Second or after-casts, unless required for the increase of stocks, should be prevented, but this can only be done by excising all royal cells unless one. Syrians and Cyprians are very troublesome, by throwing off many after-casts, owing to the great number of queens raised, while both them and Carniolians will send out a swarm from but one or two combs placed in a full-sized hive. Of how little worth, then, is the theory that swarming can be prevented by giving room.

There are many assertions made that have nothing to substantiate them, and bee-keepers often draw false conclusions from the appearances of a casual visit, and then put them in print in perfect good faith, but not with accuracy, hence are misleading. Huber and other great naturalists devoted much time in taking notes and watching the movements of their bees—the only way facts can be arrived at and the true workings of the bees set down. Many things occur amongst bees of which the casual observer has no knowledge. I have been often puzzled at times, but confess I have a weakness for knowing the exact nature of abnormal appearances and occurrences in my apiary. To solve these I have, to my loss, watched my bees for weeks together from sunrise to sunset without being many minutes absent, the result being that I can now tell from the conduct of the bees what is their intention, and what is the cause of any supposed or real aberration on their part.

Saturday, the 17th July, was the first day of the season that was favourable for dividing into nuclei. The weather and the conduct of the bees that day was all that could be desired. Queens were piping and a huge swarm came off a non-swarming hive, a dozen of nuclei were formed, and combs of swarmed stock overhauled, all its royal cells were excised, and its combs taken to strengthen nuclei. While in the act of dividing, a Syrian stock sent off a swarm of the usual sort common with these prolific queens. It was hived and thrown back quickly to allow me to go on with the more important work of securing what I had hope to be pure-breeding Carniolians, but owing to its being Saturday must take their chance at home for fertilisation, and even should they not mate with pure drones, they will be none the worse for honey-gathering next year. The Carniolians have only one fault—viz, that of flying a long time when swarming before settling or clustering. Neither veil, gloves, nor any quieter is necessary whatever when manipulating these bees if anything like care and caution is used. They are first-class honey-gatherers too, leaving nothing else to be desired that we wish bees to possess. I observe, too, that they are capital at super work, which some of the other varieties lack; but for honey-gathering the crossed Cyprians excel all others; were it not that I prefer pure breeds to crosses, for appearance sake, I should not desire any other kind of bee.

All my crossed Cyprians are heavy, much heavier than any other sort, having finished supers, and a first swarm of these four weeks hived with the untoward weather and few honey days already described. The bees, combs, and their contents (minus the hive) weigh 80 lbs. As I am on the eve of departing for the Highland and Agricultural Show at Dumfries, will leave over till another paper the difficulties I encountered with queens from other hives entering my nuclei, as well as some vagaries of the Syrian bees, also an account of the Caledonian Apiarian Show at Dumfries.—A LANARKSHIRE BEE-KEEPER.

PRESERVING BEES DURING WINTER.

THAT success follows well wintered hives where the bees of autumn or summer have been preserved until the following summer no sensible person will attempt to deny. Where that is not the case, then bee-keeping becomes a failure. At the present time I have bees which are to my certain knowledge fourteen months old, and I believe they are some months older, as I count only from the time I hived them last year. I can describe the best system of managing bees without the slightest fear of contradiction from any important bee-keeper. This was not always the case, although I have never deviated from the course I have pursued nearly all the term of my bee-keeping life. I remember well the advice upon this point given by Mr. Pettigrew, and he was right and in accordance with my own experience. It may be summed up in the following words:—Do not feed bees if it can be avoided. When required feed at once as quickly as possible, and in quantity sufficient to tide the bees over till all danger is past. Feed no later than September, and it is better it be finished in August. Feed swarms if the weather is unfavourable, and when there is a danger of the bees drawing the brood. Feed at a time and in such a manner that stranger bees are not attracted to the fed ones.

Feeding in October, if carried out, the bee would soon become extinct in many districts. After hives are filled in August with new worker combs, well provisioned, the hive of a size to admit both stores and brood of a healthy, young, fertile, and prolific queen, there remains little else to be done but to protect the bees and hive from damp, both internally and externally, for the rest of the winter. From what I have seen written in bee periodicals, and what I have witnessed in apiaries, there is no doubt that the successful plan of wintering bees is but little understood, especially amongst modern bee-keepers.

Although I can form a fair knowledge how a hive is likely to stand well and survive the winter when under my direct supervision, it is not quite so easy a task to give instructions for the management of those I have never seen. I have just been looking at a hive of bees which have been located in a roof for a year. They seem strong, and apparently in good heart. Some people will probably come to the conclusion that to keep bees under similar circumstances success would be sure to follow, but after imitating them to the letter nothing but disappointment would result. I speak advisedly upon this point. The roof of a house is dry, and being a long way above ground is, in a great measure, away from the exhalations of the earth; and from the position of bees and combs they are, comparatively speaking, free from the moist atmosphere, at least the air does not affect bees in a roof as it does in structures made specially for them; moreover, it is always warmer close to the roof of a house than it is away from it. But if we give bees the same treatment in hives as those located in roofs disaster is sure to follow. If it was the damp from the respiration of bees only that we had to contend with, we should have little difficulty; but when the humidity of the air is combined with that of the bees, it baffles us in the treatment we should necessarily give for a successful issue. I have often witnessed bees come successfully through severe winters that had little attention or protection, while those evidently cared for were in a poor state. Our changeable and variable climate, no doubt, tends to puzzle us as to the way hives should really be protected.

I have witnessed hives standing side by side one lot in hives open at every joint and the air whistling through the hive, yet that had preserved the bees healthy as they were, because others that were well wrapped up suffered much, having many dead bees. A more frosty and drier winter might, however, have reversed things. The great question at issue is how should bees be protected to withstand the vicissitudes of any winter. I have often pointed out how I have successfully wintered my own bees; still, there are some important points that I may have overlooked.

The late Mr. T. W. Woodbury demonstrated one thing fully in his experience of sending a hive of bees to the Antipodes, which on nearing the line commenced to breed, and thereby exhausted the stores intended for the adult bees only, consequently the hive perished. Heat is the main factor which encourages bees to breed, not stimulative feeding, and when stores are abundant in the hive, together with the conserved heat combined, bees naturally begin to breed soon after the shortest day, and continue doing so if all is well until the end of season. Some writers have expressed their fears that bees sometimes begin to breed too early. I never knew a case where loss was sustained through that cause, but have known of much disaster by October and stimulative spring feeding. If bees are kept at a low temperature and domiciled in a hive subject to change of atmosphere through any defect in make or covering, the adult bees become languid, and whenever they leave the hive they perish. Then, on the other hand, if breeding is going on under similar circumstances, hatching is retarded and the young bees are often tender and defective in the wings, are therefore useless, or so tender that they fall victims to the chilling winds which occur in spring and early summer, and so the hive thereby dwindles away either to nothing or to be so late as to be utterly profitless. Bee-keepers should therefore perceive the importance of having their hives covered so as not to be influenced internally by any change of temperature and of such material as will carry off all moisture from the interior of the hive. Non-porous material on the crown and a close-fitting floor form a slaughter-house for the bees.

The position of the bees in the hive during winter is also of importance. A hive having its entrance in the centre, if a wide hive, and a severe winter, the bees by travelling to one side may be unable to return to the other when the side first gone to is cleared of honey, and the bees will die. No such disaster will follow bees in deep hives. I always work my entrances from the side, and when the bees take up their position close to the entrance there is never any danger of their perishing of want, as they need only to travel inward for what they require; besides, when located near the doorway the humidity from the air is not so ready to enter, and the bees and brood are more comfortable than if they were located at the back, where they are subjected to the cold playing against them from the doorway.—A LANARKSHIRE BEE-KEEPER.

DRIVEN BEES

STRAW AND FRAME HIVES.

WOULD "A Lanarkshire Bee-keeper" kindly answer me the following questions?

An old-fashioned bee-keeper has offered, at the end of the season, to let me have the bees out of six of his straw hives, as he wishes to take the honey and doesn't want to keep the bees through the winter. I thought of driving them into two hives and feeding them. Would you recommend straw hives or bar-frame hives? How would you proceed to drive them? Is it necessary to scent the bees in uniting them? If so, what would you use? How would you do about the queens? Also, could you tell me of any solution, not hurtful to the flesh, to put on the

hands to prevent the bees stinging when handling them? Any information will greatly oblige.—ALPHA.

[Put your bees into straw hives at first, feeding them up to the required weight. Next year when they swarm put them into one of the tiering hives recommended in this Journal. For about twenty years I used the Lanarkshire tiering hive on the same principle as the Stewarton, and I am going in more for it again. It is now as it was then, the most satisfactory hive, especially when placed in an outside case to draw in and out. Swarms always work better than old stocks unswarmed. To have sufficient of these and to get good results would advise keeping three or more stocks to swarm.]

When you begin driving the bees smear a very little carbolic acid at the entrance, having a stout wing feather also smeared a little; push it into the entrance, this will quiet the bees, when the hive may be inverted and an empty one placed on the top. A band of cloth should now be wound round the junction of the two. Meanwhile, an empty hive should be placed on the site of the old stock to attract the flying bees, which, however, may be very few if the hive is deftly inverted and the carbolic acid feather judiciously used. After the two hives are secured to each other, and the bottom one steadied in a bucket or stakes in the ground, rap gently on the sides of the full hive. The bees will first gorge themselves with honey, then will creep up to the empty hive, occupying only a few minutes altogether, providing the day is a favourable one. The above is the close method of driving, which is the best one for you to adopt.

It will be safer to scent the two lots of bees before uniting. After they are driven have ready some very thin syrup, to which add a drop or two of oil of peppermint. Invert first one hive then the other, quickly but cautiously, sprinkling both thoroughly, then shake the one into the other, then the two on to a cloth, having two cross sticks laid on it to prevent crushing bees when the hive is placed over them. The whole thing should be performed quickly, and the best way to shake the bees from the hive is to catch it in both hands, throw it lightly upwards, catching it with a bump from both hands when descending. If both queens are young ones let them fight it out themselves; but if one is old and the other a young one, depose the old one.

A solution of honey on the hands helps to keep bees from stinging, but when properly handled and at the right time, no precautions are necessary. A pair of mits, going right over the vest sleeves and leaving the fingers bare, is the best protection when manipulating, and does not hinder the operator. The German Masque, sold by Messrs. Neighbour, is the best protection for the face. A little experience will soon enable you to overcome all difficulties.—LANARKSHIRE BEE-KEEPER.]

HANTS AND ISLE OF WIGHT BEE-KEEPERS' ASSOCIATION EXHIBITION OF HONEY, &c.—JULY 31ST.

ONE of the Exhibitions held during the year by the above Society took place as usual in connection with the Royal Horticultural Society of Southampton, in Westwood Park, of that town, and was in every way a great success. It was, without doubt, much the best Show yet held by this useful and flourishing Society. Perhaps this is accounted for, in some measure, by the reason that the President of the Bee Society is H.R.H. Princess Beatrice, who visited the Exhibition for the purpose of declaring it open, and distributing the prizes to the successful competitors. Under such conditions it was to be expected that bee-keepers would put forth their whole strength to make the Exhibition worthy of its name. The result was a grand display of honey, bees, and appliances. The honey as a whole was particularly good in quality, some of it exceptionally so. Amongst the appliances were to be found every conceivable article that could assist bee-keepers. The manipulation of the bees was successfully performed during the day at intervals by the Rev. W. E. Medlicott and Mr. E. H. Bellairs, and was watched by a numerous company with evident interest. The duties of Hon. Secretary were ably performed by E. H. Bellairs, Esq., who laboured hard to make the Show what it was—a decided success.

Class 1 for 24 lbs. of super honey, in sections not exceeding 2 lbs. each. A silver medal was awarded as the first prize to Mr. W. Woodley, Worlds End, Newbury, for twelve supers of 2 lbs. each of excellent quality, even in build, extra good in colour, in fact it was the best super honey in the Show. Second prize, a bronze medal, to Mr. E. Ainsley, Swanmore, Bishop's Waltham, for sections of the same size as the former, little inferior to the first prize lot. Third prize to the Hon. Secretary, E. H. Bellairs, Esq., for excellent honey. For the best 24 lbs. extracted honey, in 1 lb. or 2 lb. vessels, first E. H. Bellairs, Esq., for honey of good quality. Second prize was awarded to Mr. W. Woodley. Equal third prizes were awarded to Mr. James Lee and Mr. W. E. Duffin. Mr. W. Woodley gained the first prize for the best design in honeycomb, consisting of the initials of H.R.H.P.B.B., the second prize not being awarded through the design not being completely worked, but a third prize was awarded Mr. J. J. Candy, Commercial Road, Landport.

Class 5 was devoted to bee furniture, but owing to a misunderstanding of the rules the prizes were not competed for so largely as they ought to have been, but the first prize, gained by Mr. J. B. Blow, Welwyn, Herts, consisted of an excellent assortment of goods, all of which were of the best workmanship, in fact everything that is of use to bee-keepers was shown. Mr. C. T. Overton, Lowsfield, Crawley, Sussex, was awarded the second prize for an excellent stock of goods. Messrs. Abbott Brothers, Southall, London, had an extensive collection of bee furniture on view, but owing to the misunderstanding named did not compete.

Prizes were gained by Mr. T. B. Blow and Mr. Overton in the order named for the best observatory hive stocked with bees and queen. This to visitors was an interesting class. Mr. J. S. Baldwin, The Apiary, Bromley, Kent, had the best 2 lbs. of brood foundation, and the same quantity of super foundation, which required to be manufactured by the exhibitor, closely followed by Mr. T. B. Blow. The most

complete bar-frame hive, the price not to exceed 35s., was shown by Mr. T. Tanner, Southampton Street, Ringwood, of the Cheshire pattern, being well made. Mr. T. B. Blow was second. For a hive of more modest price, 25s., the first was awarded Mr. T. B. Blow; while the second was given to Mr. A. D. Woodley; third to Mr. Overton. The best cottager's hive, price 10s. 6d., was shown by Mr. H. D. Woodley; the second prize was awarded to Mr. Blow, and the third to Mr. Baldwin. An improved honey extractor was shown by Mr. W. T. Meadows, Syston, Leicester, which combined all points essential to satisfactory extraction of honey in any form. Mr. Blow gained first prize for section rack, prepared for putting on the hive with an excellent manufacture. Second prize, Mr. Overton.

Class 16 of the schedule was the champion class—viz., for 12 lbs. of super in sections not exceeding 2 lbs. each, and 12 lbs. of extracted honey in vessels not exceeding 2 lbs. each. The first prize was the silver medal of the British Bee-keepers' Association and £1 given by H. and I.W.B.K.A. This was considered to be the leading class. Most interest was concentrated here, as showing the different qualities of the honey in both sections (super and extracted) as gathered in the same place and by the same bees, which produced fourteen entries. After a close scrutiny the Judges awarded the first prize to Mr. H. Puzey, Farrington, Alton, Hants, whose super honey was grandly built, uniform in colour, and of excellent appearance; the extracted also was of high character. A bronze medal given by the same Society as second prize was awarded to Mr. W. Hunt, South Wainborough, Odiham, Hants, who was a close competitor for the first prize. The third prize was taken by Mr. C. Richmond, Swanmore House Farm, Bishops Waltham.

For the same quantity as in the foregoing class, open to cottagers and artisans only, Mr. E. Ainsley gained the award with a splendid exhibit, good in colour, quality and build. Second Mr. T. Giles, Cowsfield, Salisbury; third Mr. J. Downton, Abbots Anne, Andover. Miss Evelyn Myers, Swanmore House, Bishop's Waltham, gained the first prize for 12 lbs. of super honey, not exceeding 1 lb. each, with honey in every way most satisfactory. Miss Medlicott, Swanmore Vicarage, Bishop's Waltham, gained the second prize with a capital exhibit. Miss Johnson, Northgate Place, Winchester, was third in this class, which was largely represented by no less than eighteen entries, thus it was no little honour to gain a prize where the competition was so spirited. The following class was on the same conditions as former one, except it was confined to cottagers and artisans only, Mr. Ainsley followed up his previous successes by taking the first prize, followed by Mr. Giles and Mr. A. Roots, Morestead, Winchester. For 24 lbs. extracted honey, in vessels of any size, Mrs. Hughes, Longstock, Stockbridge, gained the first prize with honey which was bright and clear, and of excellent appearance. Mr. J. Downton and Mr. Giles received the remaining awards in the order named. Mrs. Hughes followed up her previous success by again taking the first prize for 12 lbs. of extracted honey in 1 lb. or 2 lb. vessels, with a sample as good as in the former class. Mr. Broom was second, and Miss Martin, Swanmore, Bishop's Waltham, third. Ditto cottagers and artisans, Mr. Broom first; second Mr. Downton; third Mr. E. Ainsley. For a super of honey, not in sections, and exceeding 10 lbs. in weight, Mrs. Burgess, Hinton, was the only competitor who was awarded the first prize for a good sample.

Rev. W. E. Medlicott gained the first prize for the best display in the most ornamental manner, to be under 100 lbs. in weight, with a good exhibit, tastefully arranged, followed by Mr. J. J. Candy and Miss Myers, Swanmore House, in the order named. The best sample of beeswax, not less than 2 lb. weight, was staged by Mrs. Burgess; second Mr. J. Forward, Newtown, Christchurch; third Mr. A. Stephens, Newtown, Christchurch, all very good in quality. The best home-made hive, the work of an amateur not being a carpenter or joiner, was shown by Mr. W. Welch, West End, Southampton; second Mr. E. Maberly, Avonmouth, Christchurch; third Mr. A. Stephen.

THE BRITISH BEE-KEEPERS' ASSOCIATION'S TENTH METROPOLITAN EXHIBITION OF HONEY, HIVES, &c.

The B.B.K.A. are to be cordially congratulated on the success of their tenth Exhibition, as for quality and quantity it far exceeded any of their previous shows. When the question was hinted of holding a show at the Colinders, it was pointed out that there would have to be a large sum of money guaranteed for expenses, as the only income would be the entrance fees, no gate money being obtainable.

However, by the end of June, the fund had reached to nearly £160, and there being over 300 entrance fees, the financial success of the Show was assured. A novel feature in the Show was the county competition, open to all county associations affiliated to the B.B.K.A. which produced eleven entries.

Unfortunately several of our best honey-producing counties have not competed—namely, Devonshire, Dorsetshire, Lincolnshire, and Hampshire, the latter county having held a large Show at Southampton at the same time.

The Lancashire and Cheshire Association scored an easy first, followed by Hertfordshire, Norfolk, Buckinghamshire, and Wiltshire. The conditions being that honey in any form was to be displayed on a table 6 feet by 6 feet and 3 feet in height, and that ten members at least should contribute the honey. It was very unfortunate that the winning association had not complied with the regulation that all honey in bottles should be corked, and a formal protest was lodged against the Judges' decision, which will be considered by the Committee, though we have been informed that if the protest is upheld that the first prize will be withheld, and not awarded to Hertfordshire. We are strongly of opinion that the decision of the Judges should be always upheld, unless it can be shown that they have contravened the schedule. Judges like others of us are only mortal, and fallible, and if they awarded a prize for smokers to thirty-six 1-lb. sections of honey, we think the Committee would be perfectly justified in over-riding their decision, as well as in such a case as the present.

Class 2 was for thirty-six 1 lb. sections of honey, which included forty-three entries, and the prizes were awarded to Messrs. W. G. Preece, T. Elderton, T. Sells, and Mrs. Tom; while Messrs. Drake, Read, and Stanford were highly commended. For twenty-four 2 lb. sections there were only six entries, and Messrs. Sells and Woodley and Miss Gayton were the prizewinners in the order named. For run honey, the Revs. J. A. Kemp, Anderson, and Sun-

de Land, Miss Gayton, and Messrs. Sell, Kendle, Lloyd, and Clowes were the successful competitors. The Committee, with a wise discretion, eliminated the usual class for collections of bee furniture, and had only two classes for hives, the first class to include hives not exceeding 20s, and the second class 15s.

Bee-keeping nowadays has become more of an industry and less of a hobby, and expensive prices, except for the *dilettante* bee-keeper, are things of the past. In these classes Messrs. Neighbour, Blow, Baldwin, Overton, Dines, Abbott, Howard, and Meadows were successful; while in the class for extractors, T. B. Blow took a silver and two bronze medals, and C. T. Overton a silver medal. Bronze medals were awarded to Messrs. Abbott, Overton, and Webster for smokers, and appliances for quieting bees, and we think that the carbolic acid fumigator will be the fumigator of the future. For feeders, Messrs. Howard and Meadows gained a silver medal and a bronze medal, which was also obtained by Messrs. Blow and Baldwin. For section racks Messrs. Neighbour and Abbott were awarded prize medals; while Messrs. Abbott secured the silver medal for a travelling crate.

In the class of useful inventions introduced since 1883, Messrs. Abbott, showed a very neat contrivance for fixing foundation. A groove, the under surface of the top bar is cut into one side, perpendicular, and the other side slanting; the sheet has the upper end placed in this groove, and is kept in position by a thin strip of wood, which jams it so tightly that the foundation will bear the strain of several pounds.

Mr. C. T. Weston showed a Bertrand fumigator, which we can bear testimony to as being a very efficacious way of curing foul brood. The price (14s. 6d.) is rather prohibitive, but the county associations could easily let it out on hire to their members. The Self-Opening Tin Box Company showed some cheap useful tins for storing honey, which supplies a very great want, as all sorts of utensils, from washing basins to bread pans, have to be pressed into the service of bee-keepers, very much to the detriment of the temper of the careful housewife.

In the miscellaneous class there were various exhibits from medallions to medicine, from bottles to bee flora, from comb foundation to cakes and confectionery. Most of the honey shown was for sale, and a brisk trade was carried on by the exhibitors, as well as by Messrs. Neighbour, the Bee and Fruit Farming Company, and the British Honey Company, who respectively showed very attractive exhibits of honey of all kinds and qualities, from the ancient glass super to the modern section, the most convenient and saleable form of comb honey.

[The complete prize list of the above Show was not received on our going to press, and the report of the Caledonian Society's Apiarian Exhibition arrived too late for insertion this week.]

TRADE CATALOGUE RECEIVED.

L. Späth, Rixdorf, Berlin.—*Catalogue of Bulbs, Roses, &c., 1886.*



* * All correspondence should be directed either to "THE EDITOR" or to "THE PUBLISHER." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

UNANSWERED LETTERS.—We find it necessary to state that letters to which replies are expected in this Journal should be addressed to the "Editor of the JOURNAL OF HORTICULTURE," and in NO OTHER WAY, to insure attention.

Royal Caledonian Society (Show).—We cannot give you the date you require; the best course would be to write to Mr. J. Stewart, 4, Albyn Place, Edinburgh.

Princess Frederick William Strawberry (H. Mills).—We forwarded your letter to our correspondent, who replies:—"This variety does not seem to be in general cultivation, though it is an excellent variety for forcing, being a great bearer, the trusses thrown well up, as in La Grosse Sucrée, and has a particularly fine aroma when ripe. It was grown a few years ago by Messrs. James Dickson & Sons, Newton Nurseries, Chester."

Chrysanthemums (J. Dorset).—Your writing is so indistinct that we can scarcely read your letter. You have done quite right in promptly removing the buds. The next will probably show at the right time for "taking," and with good management will develop into fine blooms from crown buds. You should read carefully what Mr. Molyneux has written on this subject, and proceed with early and late varieties accordingly.

Specimens of Ferns—Mushrooms (H. G. B.).—The neatest way to secure the fronds is by gumming narrow pieces of strong paper across the stipes and base of the pinnæ or pinnules, and if some care be exercised in placing these the frond can be rendered quite secure. If gummed, as you

suggest, the gum employed should be thin and clear. The heat is probably too great in the cellar, and that would cause the Mushrooms to grow with long stalks as described.

Apple Blossom (H. C.).—The semi-double Apple blossom you have sent is 2½ inches in diameter and very beautiful. You would observe it was the only blossom on the spur, and if you examined its stem or peduncle carefully you would not only see it was very stout and a little flattened, but ribbed. The ribs represent the stalks of other flowers, and instead of the specimen being a solitary flower it was an aggregation of all the flowers of the truss—a merging or concentration of them all into one flower, and a very complete and interesting example of fasciation.

Cutting Down Jacaranda mimosæfolia (W. M. G.).—We should take cuttings of the plant now—the tops of the shoots—and try and strike them. They should be a little firm, and inserted in sand over sandy peat made firm, in pots over which bellglasses can be placed, or in a close case in a warm house or pit. We should not cut the plant closely down now, but only shorten the growths, keep the soil rather dry through the winter, and prune lower in early spring. Healthy plants are very beautiful in a small state—charming for table decoration and vases.

Brugmansias Losing their Lower Leaves (Cambridge).—This is to some extent natural; but these plants are very much subject to red spider, and it is possible that your plants are suffering from that cause. They should be well syringed twice daily should such be the case. It is more likely that the plants at some time have been too dry than that they have been too moist. Standing in a rather shady position would be beneficial rather than otherwise. Give them a top-dressing of loam and manure in equal parts, and when roots appear on the surface give occasional waterings with weak liquid manure. Syringe daily and they may flower tolerably well during the autumn. Postpone shaking them out till the end of the year, when they should be repotted in equal parts of turfy loam and peat and well-decayed manure; but red spider is the chief difficulty with these plants, and must be guarded against.

Tea Roses (Tea Rose).—Practically all the beautiful blooms with which you have been enamoured were grown outdoors, and we see no reason whatever why you should not grow these charming Roses well. We do not say you can grow them equal to the splendid examples to which you allude—unless, indeed, you can grow Hybrid Perpetuals as good as the best of the best growers. If your soil is very heavy make it lighter by the addition of vegetable refuse and gritty matter of any kind, wood ashes being excellent, and soot good. The site must be free from stagnant water, and the ground made fertile with manure to the depth of 2 feet. If it is inclined to be wet grow the Roses in beds raised a foot above the general level of the land, with paths between them. With shelter from thatched hurdles as you propose, and the addition of dried fern in the winter if needed, pruning to good buds on stout ripe wood, surface-dressing with manure, and giving liquid manure if required, thinning the growths and disbudding, you ought to have healthy plants and good flowers of all the varieties you name.

Fertilising Moss (Amateur).—We have not used this moss, but have seen small softwooded plants and young Ferns growing in it satisfactorily; indeed, Messrs. King & Co. exhibited such plants, also a Coleus, Begonia, and a Caladium, at Liverpool. We do not know whether it has been tried for Orchids, but it would appear to be worth trying. Nor can we tell how long such plants as the above would continue healthy in it under good management. The old practice of binding fresh sphagnum moss around the roots of hedding plants in spring, owing to scarcity of small pots and the knowledge of the fact that such plants have for a time made progress, and quickly started off when finally hedded out, has no doubt had a great deal to do with the Fertilising Moss theory. Messrs. King & Co. claim that the fertilising properties which, in the process of manufacture they impart to the moss, become permanently fixed, so that they can only be dissolved and assimilated as the plants require them. If this is a fact it is a "step in advance." Hyacinths and other bulbs would no doubt grow and flower in this moss well, and it is convenient for using in jardinetts and ornamental vases. Why not try a few experiments? The cost would be trifling, the "indulgence" interesting, and the results instructive.

Habits of the Fly or Aphis (F. J.).—The innumerable insects of this group, about one of which you inquire, haunt almost every plant more or less, and they vary much in size, also colour, green, black, brown, yellow, &c. In general habits, however, they all nearly resemble each other; a few stragglers live through the winter in houses and sheltered outdoor spots, but the origin of every year's succession of them is a batch of eggs laid during the autumn by females, winged, or occasionally wingless, usually on twigs and branches, it may be on walls; hence the importance of cleansing these in winter, when it can be done. From these eggs appears the first brood, about April, of females, which, as the season advances, develop a progeny wingless like themselves, and other broods follow in rapid succession. A decided check given to the first minute examples of spring greatly lessens one's future troubles. Winged aphides appear in May and September; these perform migrations, but seldom travel far. All the aphides are feminine, except part of the autumn generation, before egg-laying, and in every stage of growth the insects are active, day and night, sucking plant juices. Fortunately for us they have a large number of foes, which destroy them by thousands, some parasites even attacking them while in the egg. There are some aphides that infest the roots of plants; these are destitute of wings. It is doubtful if the "mite of a fly" to which you refer is the originator of the insects on your Begonia. The house should be thoroughly cleansed in every part at a convenient time in winter, then by periodical light fumigations in spring, before the insects appear, the plants may be kept clean. Possibly also the atmosphere of the house is kept somewhat too dry.

Dwarf Chrysanthemums (C. W. C.).—Your cuttings will strike if their leaves are kept fresh, but they would have been much better in a close frame. If the ends of good shoots, those of a stout short-jointed character, are inserted now, one in the centre of a 2-inch pot in sandy loam, surfaced with sand, well watered, and the pots stood on damp ashes in a frame kept regularly moist and shaded to prevent the leaves flagging, they will soon emit roots. They must have all the light they will endure, but the leaves should be kept fresh. In the course of a week give it a little air, increasing

by degrees so long as the leaves do not droop, drawing the sash off on fine nights so that the cuttings may benefit by night dews, and eventually in the daytime. When roots are seen protruding through the drainage shift the plants into 5 or 6-inch pots, using a compost of turfy loam, with a fifth part of decayed manure added, crumbled with the hand, mixing a handful of eoot with a peck of soil and a little sand. Pot firmly, and grow the plants in a sunny position in the open air, not topping them. You may insert three or more cuttings of Pompon varieties if you wish round the sides of the pots, and shift them into larger pots, without dividing the plants. We have seen dwarf bushes grown by inserting half a dozen cuttings in 5 and 6-inch pots, and leaving them there to grow and flower. In this case the pots should be two-thirds filled with very good compost, surfaced with sandy soil, and not filled nearer than within an inch of the rim. Liquid manure is not required, at least till the pots are filled with roots. It is not often that plants kept long in the cutting pots to "keep them back" prove very satisfactory. You can try yours, treating them as advised for later struck cuttings. All the pots should be made ready and the soil well watered before the cuttings are taken, and these sprinkled after insertion. They should not flag before being put in, nor after either, or they will not strike quickly, if at all.

Resting Cattleyas (A. B. C.).—The time for resting the majority of these plants is from November until the end of February or the early part of March. The system of resting varies according to the variety. For instance, *C. intermedia* makes its growth early in the year, and flowers upon it before it is really completed; it then makes roots, and an autumn growth which does not flower. This requires to be well ripened, and the plant rested through the winter, until signs of growth are visible in February. *C. eldorado* makes its growth and flowers from July onwards on pseudo-bulbs that are not ripe, but requires ripening after flowering by warmth, light, and sunshine, then a cooler and drier atmosphere, with only sufficient water at the root to keep them from shrivelling, will rest them. *C. Trianae* makes its growth and produces a sheath. The first must be thoroughly hardened and ripened, by which time it will be autumn. This variety should then be rested, not in too low a temperature; but if given water to keep its pseudo-bulbs plump it will continue to develop its flower buds, which unfold early in the season. Rooting with this variety commences about the same time, and they should not be allowed to suffer by an insufficient supply of water, although they will not require as much as when in active growth. *C. Mossiae* flowers later, and in consequence makes its growth later in the season, and therefore cannot be rested quite so early as *C. Trianae*. *C. Mossiae* invariably begins to make roots about the time *C. Trianae* comes into flower. The growths of Cattleyas should always be well ripened before they are rested, whether they flower after being rested or before. The examples named will be some guide to you in this respect. Never rest these plants until the pseudo-bulbs are firm and thoroughly developed about this stage, or directly after the roots cease action. You must not check your plants by resting them while the roots are in activity, as is often the case with these plants long after the growth appears to be completed.

Names of Fruits.—The names and addresses of senders of fruit to be named must in all cases be enclosed with the specimens, whether letters referring to the fruit are sent by post or not. The names are not necessarily required for publication, initials sufficing for that. (*W. R.*)—Only one fruit, and that the smallest, arrived in its entirety, the others being all smeared. Strawberries should never touch each other when packed for travelling. We cannot name it, but we do not think it is *Dr. Hogg*; indeed, the small sound fruit is not a typical specimen of any variety.

Names of Plants.—We only undertake to name species of plants, not varieties that have originated from seed and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in firm boxes. Slightly damp moss or soft green leaves form the best packing, dry cotton wool the worst. Not more than six specimens can be named at once. (*Carex*).—11, *Carex divisa*; 16, *C. glauca (recurva)*; 17, Cannot be named with certainty. All the specimens arrived in the worst condition. (*D. C.*).—*Festuca bromoides*. (*H. W. G.*).—It is quite impossible for anyone to give the correct name of a Tomato from a solitary leaf. Your Tomato is of the Dedham Favourite type, and that is all we can say about it. (*Rosa*).—The specimen sent is not sufficient to enable us to identify the plant with certainty, but it resembles *Acampe multiflora*, formerly known as a *Vanda*, but now separated with several others to form the genus *Acampe*. It is found in China, and is said to be common in ravines of Hong Kong. (*Old Subscriber, Norwich*).—1, *Aspidium capense (Polystichum capense)*; 2, *Scolopendrium plantagineum (Antigramme plantaginea)*; 3, *Lomaria species*; 4, *Blechnum longifolium*; 5, *Asplenium erectum (variety braziliense)*; 6, *Asplenium alatum*. (*Constant Reader*).—1, *Aconitum versicolor*; 2, *Campanula persicifolia alba plena*; 3, *Spiraea salicifolia*; 4, *Asperula odorata*.

Italian Bee (Clifton).—From the description given of the bee it appears to be an Italian (*Apis ligustica*), or it may be a cross from either it or one or other of the yellow-striped bees, such as the Syrian, Cyprian, Egyptian, &c., or a dark coloured pure one of one of the above; but, from the description given, we think it an Italian.

Preserving Sections for Sale (F. J.).—The best way to preserve sections after being taken off hive and not for immediate sale is to pack them in an air-tight box, and as nearly as possible hermetically sealed. Keep them in a dry place. Place the sections in the original way they stood upon the hive. If for immediate sale, consult the tastes and wishes of customers whether they should be in boxes, in numbers, or if glazed separately. The former plan is decidedly the cheapest if according to the wishes of customers.

Making a Bar-Frame Hive (R. C.).—Every hive in an apiary ought to contain frames of the same size and dimensions, so that every comb when built in proper form will be interchangeable with every other. The advantage of this arrangement is very evident. In the hive described the dimensions are rather different to those most generally adopted, without having any of the advantages claimed for deep frames over shallow ones to

counterbalance the serious difficulty that will be occasioned—when perhaps it is least expected—if a standard frame hive should be purchased. Hives should be either deep or shallow, and if shallow the standard frame should, for the sake of convenience, be always used. The "outside" dimensions of a standard frame are 14 inches long by 8½ deep, top bar three-eighths of an inch thick, bottom bar one-eighth of an inch, and the side bars one-quarter of an inch thick, the width being seven-eighths of an inch. The "inside" measurement of a hive to contain these frames is 14½ inches from front to back, and 8½ inches high; the length will depend upon the number of frames it is desired to use. If it is preferred to have a deep frame the better plan is, as far as I can see, to have another hive of the same dimensions, and work one upon the other, after the style of the "Stewarton," thus obtaining the advantages of the standard frame and also the benefit of deep combs, which in winter are supposed by many to be eminently conducive to the comfort of the bees. There is no special advantage in the double walls (though in my apiary they are used) according to some authorities, and they are undoubtedly heavy and make the hive more cumbersome and difficult to move. "A Lanarkshire Bee-keeper" (its inventor) has more than once described the perforated zinc floorboard in former numbers of this Journal, and on referring back its manner of construction will be made sufficiently clear. The fact that you are unable to dovetail is not of much force either against or for the use of double walls; but if the wood is accurately and carefully and well nailed or screwed together the hive will be sufficiently weathertight, but the work must be well done. The colour of the paint is not a very material point, and it may be used as intended, the hive itself being afterwards thoroughly well painted with any "dull coloured" paint that can be obtained. Any further information will be given if required; and if after reading the notes on the construction of the zinc floorboard you are unable to form a clear idea of it we shall be pleased to assist you.

COVENT GARDEN MARKET.—AUGUST 4TH.

No alteration from last week.

FRUIT.

		s.	d.	s.	d.			s.	d.	s.	d.
Apples	$\frac{1}{2}$ sieve	0	0	to	0	Melon	each	1	0	to	2
Cherries	$\frac{1}{2}$ sieve	2	0	4	0	Oranges	100	6	0	12	0
Currants, Black ..	$\frac{1}{2}$ sieve	2	3	2	6	Peaches	per doz.	4	0	10	0
" Red	$\frac{1}{2}$ sieve	2	6	0	0	Pine Apples English ..	lb.	2	0	3	0
Figs	dozen	1	6	2	0	Plums	$\frac{1}{2}$ sieve	0	0	0	0
Grapes	lb.	1	0	3	0	St. Michael Pines ..	each	4	0	6	0
Lemons	case	10	0	15	0	Strawberries	per lb.	0	6	1	0

VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.
Artichokes	dozen	1	0	0	0	Lettuce	dozen	1	0 to 1
Asparagus	bundle	0	0	0	0	Mushrooms	punnet	0	6 to 1
Beans, Kidney ..	lb.	0	3	0	0	Mustard and Cress punnet	0	2	0 to 0
Beet, Red	dozen	1	0	2	0	Onions	bunch	0	3 to 0
Broccoli	bundle	0	0	0	0	Parsley	dozen bunches	2	0 to 3
Brussels Sprouts ..	½	sieve	0	0	0	Parsnips	dozen	1	0 to 2
Cabbage	dozen	1	6	0	0	Potatoes	cwt.	4	0 to 5
Capsicums	100	1	6	2	0	" Kidney	cwt.	4	0 to 5
Carrots	bunch	0	6	0	0	Rhubarb	bundle	0	2 to 0
Cauliflowers	dozen	3	0	4	0	Salsafy	bundle	1	0 to 1
Celery	bundle	1	6	2	0	Scorzonera	bundle	1	6 to 0
Coleworts	doz. bunches	2	0	4	0	Seakale	per basket	0	0 to 0
Cucumbers	each	0	3	0	6	Shallots	lb.	0	3 to 0
Endive	dozen	1	0	2	0	Spinach	bushel	3	0 to 4
Heros	bunch	0	2	0	0	Tomatoes	lb.	0	4 to 0
Leeks	bunch	0	3	0	4	Turnips	bunch	0	4 to 0

PLANTS IN POTS.

		s.	d.	s.	d.			s.	d.	s.	d.	
Aralia Sieboldi ..	dozen	9	0	18	0	Ficus elastica ..	each	1	6	to	7	0
Arbor vitæ (golden)	dozen	0	0	0	0	Fuchsia ..	per dozen	4	0	to	9	0
„ (common)	dozen	6	0	12	0	Foliage Plants, var.	each	2	0	to	10	0
Arum Lilies ..	dozen	0	0	0	0	Heliotrope ..	per dozen	4	0	to	8	0
Bedding Plants, var.	doz.	1	0	2	0	Hydrangea ..	per dozen	6	0	to	12	0
Begonias ..	dozen	6	0	9	0	Ivy Geraniums	per dozen	3	0	to	6	0
Calceolaria ..	per dozen	4	0	9	0	Lilium anatum	per doz.	18	0	to	60	0
Cineraria ..	dozen	0	0	0	0	„ lancifolium	per doz.	9	0	to	18	0
Cockscombs	per dozen	4	0	6	0	„ longiflorum	per doz.	18	0	to	30	0
Crassula ..	per dozen	12	0	24	0	Lobelia ..	per dozen	3	0	to	4	0
Cyperus ..	dozen	4	0	12	0	Marguerite Daisy	dozen	6	0	to	9	0
Dracæna terminalis,	dozen	30	0	60	0	Mignonette ..	per dozen	3	0	to	6	0
„ viridis ..	dozen	12	0	24	0	Musk ..	per dozen	2	0	to	4	0
Erica, various ..	dozen	0	0	0	0	Myrtles ..	dozen	6	0	to	12	0
Euonymus, in var.	dozen	6	0	18	0	Palms, in var.	each	2	6	to	21	0
Evergreens, in var.	dozen	6	0	24	0	Pelargoniums, scarlet, doz.	3	0	to	6	0	
Ferns, in variety ..	dozen	4	0	18	0	Pelargoniums	per dozen	6	0	to	15	0

CUT FLOWERS.

		s.	d.	s.	d.			s.	d.	s.	d.
Abutilons ..	12 bunches	2	0	4	0	Lily of the Valley, 12 sprays	0	0	0	0	0
Arum Lilies ..	12 blooms	4	0	6	0	Marguerites ..	12 bunches	3	0	6	0
Asters	12 blooms	0	4	0	6	Mignonette ..	12 bunches	1	6	4	0
Azalea	12 sprays	0	0	0	0	Myosotis	12 bunches	2	0	3	0
Bouvardias ..	per bunch	0	6	1	0	Pelargoniums, per 12 trusses	0	9	1	0	
Camellias ..	12 blooms	0	0	0	0	" scarlet, 12 trusses	0	3	0	6	
Carnations ..	12 blooms	1	0	3	0	Roses	12 bunches	2	0	9	0
"	12 bunches	3	0	6	0	" (indoor), per dozen	0	6	2	0	
Chrysanthemums	12 blooms	0	0	0	0	" Tea	dozen	0	9	1	0
Coriander ..	12 bunches	1	6	3	0	" red	dozen	1	0	2	0
Cowslips ..	doz. bunches	0	0	0	0	" Moss	12 bunches	9	0	12	0
Daffodils ..	12 bunches	0	0	0	0	Primroses, Yellow, dozen					
Epiphyllum ..	doz. blooms	0	0	0	0	dozen bunches	0	0	0	0	
Eucharis ..	per dozen	2	0	4	0	Pyrethrum ..	12 bunches	4	0	9	0
Gardenias ..	12 blooms	2	0	4	0	Spiræa	12 sprays	0	0	0	0
Hellebore ..	doz. blooms	0	0	0	0	Stephanotis ..	12 sprays	2	0	3	0
Hyacinths, Roman,	12 sprays	0	0	0	0	Stocks, various	12 bunches	3	0	5	0
Iris	12 bunches	0	0	0	0	Sunflowers ..	.. .. .	0	6	1	0
Lapageria, white,	12 blooms	0	0	0	0	Sweet Pea ..	12 bunches	2	0	4	0
Lapageria, red ..	12 blooms	1	0	2	0	Sweet Sultan ..	12 bunches	3	0	4	0
Lavender ..	dozen bunches	4	0	5	0	Tropæolum ..	12 bunches	0	0	0	0
Lilium candidum	12 blms.	0	6	1	0	Tuberose ..	12 blooms	0	6	1	0
"	12 bunches	24	0	30	0	Violets	12 bunches	0	0	0	0
" longiflorum, 12 blms.	3	0	6	0	0	" Czar, Fr. ..	bunch	0	0	0	0



HARVEST PROSPECTS.

At this season of the year the newspapers give frequent reports of harvest prospects as a matter of national importance worthy of general attention. Such reports are curious and interesting, but we can hardly regard them as sufficiently accurate to be really trustworthy, for if we inquire about the source of such information we find that it is derived both from local reports and general observation. Fairly tested, the matter resolves itself into an expression of individual opinion, and consequently we invariably receive reports of such a nature with a considerable degree of reserve, not unmixed with some doubt. It is by no means an easy matter to give an accurate account of the condition of crops even in a single parish. Still more difficult is it to say why some crops are good and others bad. Changes of weather doubtless affect the growth and development of the crops, but good or bad crops are much more the result of cultivation than of seasons, so that when we speak of harvest prospects we ought not to convey or receive an impression that because we have had so many hot or cold, dry or wet days, certain crops are likely to afford an abundant yield or otherwise. The weather is a factor to success which we have no wish to hold lightly, much less ignore, but we are bound to give due weight to the high importance of skilful cultivation as the primary source of success.

Compare the light sketchy report of the ordinary newspaper with, for example, the report of prize farm crops in the Journal of the Royal Agricultural Society. The one is merely a bit of gossip by the way, the other a lesson of deep and lasting importance. Each farm is described field by field, the cultural process explained, its effect upon the crop given, and we have the cause of success or failure clearly set forth. It is precisely in the spirit of such teaching that farmers should compare notes on harvest prospects. It is by no means an uncommon thing when out driving to see crops upon different farms with only a road or hedge between them, totally different in appearance, and we may then safely venture upon the conclusion that we see examples of good and bad practice in farming. For example, a certain farm came upon our hands in the spring of last year after most of the crops were sown, and we found that the Wheat proved a very inferior crop, yet the Wheat upon an adjoining farm close outside one of the boundary hedges was excellent. Upon asking for an explanation of this difference, we were told that ours was heavy land and that the Wheat crop was always a poor one. With the facts before us we did not believe this statement, and we are glad to say that by careful culture we have this season really good Wheat crops. The fault was neither in the land nor in the weather, it was the careless slovenly management of the farm that caused the failure. We had only to stir the soil well, to get it clean, and apply an autumn and spring dressing of pure chemical manure to ensure a good crop of Wheat. The improvement of such land is both simple and sure. Assuredly we do not intend to rest content with merely good crops, but rather to go on to better and best results. Step by step, year by year, it can and will be done, so that there is a regular progressive improvement in our harvest prospects.

With results before us it is well to try and understand them, to learn why this crop is good, that crop bad, and so acquire better knowledge for our guidance in future. It is surely in this way that inquiry into harvest prospects should be made. That we should regard them as an outcome of good or bad practice, affected in some degree by the weather, but affected only in degree according to our skill and care in cultivation and cropping. That is the point. When we

discuss the probable quantity of corn that will be grown this year, and calculate how much we shall have to import to meet our requirements, ought we not to inquire how much more home-grown corn it would be possible to obtain, or rather how much more might be grown profitably under an improved system of cultivation? In a matter of such importance we advocate nothing of a speculative nature; no step should be taken that is not based upon a clear knowledge of possible results and how to obtain them. Upon how many farms do we find foul land, faulty drainage, and a want of fertility! In how many farmers do we find ignorance of the science of farming, of the nature of the soil, of the best way of imparting fertility to it? While faults in knowledge and in practice continue to prevail so generally among those who cultivate the soil can we hope the land will yield her increase in fullest measure? We recently saw a field of Mangolds remarkable for the size and vigour of the plants; all the more remarkable because the farm had long been notoriously a poor one. Upon inquiry we found that a new tenant had pipe-drained the land, cleaned it, stirred it deeply, stored it well with fertility, hence the result. Assuredly the harvest prospects of such a man are good, and it is to such prospects we must turn if we would form a correct view of what they should be throughout the entire country.

WORK ON THE HOME FARM.

Pea harvesting has been done under difficulties and not without some loss, showery weather causing many of the peas to be shaken out of the pods about the fields to the benefit of the pigs which were turned upon the land as soon as the crop was cleared off. Cabbage drilling for late spring feeding has been done, and advantage taken of wet weather to transplant both Cabbage and Thousand-headed Kale from seed beds. We have now a fine example of the advantage of early drilling of Kale upon rich land. The plants have grown away freely from the first, and we have now a crop of several tons per acre ready for use as we may want it. For cows and cattle generally, as well as for sheep, such an abundant supply of green food is invaluable at a season of the year when pastures are so frequently parched and bare. Swedes and Mangolds on really good land are now growing with remarkable rapidity, by far the best piece of Mangolds being that to which we applied the full dressing of home-mixed chemical manures, with farmyard manure. The next best had farmyard manure, fish guano, and muriate of potash, and the next had only fish guano and farmyard manure. At a large off-farm, where the Swedes are good, the Mangold crop is backward and the roots will be small. A close scrutiny of the soil showed that the action of the manures was spoilt or rather prevented by the wet condition of the land. We drained all we could of this farm last winter, and we hope to be able to do the remainder next winter. Certainly this half failure of Mangolds will act as an incentive to do all that is possible to relieve the land of superfluous water, for, until this is done, we only spend our strength in vain efforts to obtain full crops of any kind. Our best Swedes are in a field at the home farm, after Rye, which had an early spring dressing of a hundred-weight per acre of nitrate of soda, and was eaten off by sheep in folds. Many of the roots there are already as big as one's fist, and the strong growth of leaves meets across the rows. White Dutch Clover for seed has been saved in capital condition. Red Clover, also for seed, is now nicely in bloom, and we hope to be equally successful with it. Again we remind our readers of the importance of breaking up each field immediately after a crop is cleared off from it, for sure we are, if this were done with promptitude and care, foul land would be much less common than it now is.

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude, 111 feet.

DATE.	9 A.M.					IN THE DAY.				Rain	
	Barome- ter at 324 and Sea Level	Hygrome- ter.		Direction of Wind.	Temp.-of Soil at 1 foot.	Shade Tem- perature.		Radiation Temperature.			
		Dry.	Wet.			Max.	Min.	In sun.	On grass		
1886.	Inches.	deg.	deg.		deg.	deg.	deg.	deg.	deg.	In	
July.											
Snnday	25	29.623	60.4	58.8	S.	62.0	74.2	53.4	119.3	48.2	0.663
Monday	26	29.470	61.9	56.2	W.	61.8	69.3	53.2	120.2	52.4	0.010
Tuesday	27	29.735	58.6	52.0	N.W.	61.2	62.4	53.7	108.6	51.9	—
Wednesday ..	28	30.114	57.4	51.2	W.	59.3	65.6	44.4	115.6	40.0	—
Thrsday	29	30.186	62.2	56.1	S.	59.4	68.7	52.3	101.3	47.7	—
Friday	30	29.769	65.8	61.3	E.	59.7	73.3	57.7	125.9	52.2	0.017
Saturday	31	29.705	61.1	55.7	Var.	60.6	71.4	55.4	117.8	53.3	—
		29.786	60.8	53.0		60.6	69.6	53.0	115.5	49.4	0.720

REMARKS.

25th.—Wet early; dull day, with slight showers; heavy rain 3 P.M. till midnight; thunder at 5.40 P.M.
 26th.—Fine pleasant morning; rain in afternoon.
 27th.—Fine and pleasant, but not much sun, and at times almost cold.
 28th.—Fine, but rather hazy.
 29th.—Generally dull and threatening.
 30th.—Dull morning, with spots of rain.
 31st.—Slight rain, and cloudy early; slight showers in afternoon.
 A rather dull week, with temperature slightly below the average.—G. J. SYMONS.



12	TH	Taunton Show.
13	F	
14	S	
15	SUN	8TH SUNDAY AFTER TRINITY.
16	M	
17	TU	Bilston Show (two days).
18	W	Shrewsbury Show (two days).

BIGENERIC HYBRIDS.

INNUMERABLE experiments have been undertaken during the past fifty years in hybridising and cross-breeding plants, and the results have been very important in effecting the improvement of particular races either for ornamental or useful purposes. Hybrids between indisputably distinct species have been obtained in large numbers, and crosses between varieties of such species have produced similarly beautiful or remarkable cross-breeds, until in many cases it has become very difficult to trace the parentage or lineage of the cultivated forms. With so many persons engaged in this work and such abundant results in other directions, it is strange that so few hybrids between species of different genera should have been raised. At the first glance this would seem to indicate that the botanists have been especially careful in determining what should constitute genera, and that in grouping the species under them they have only associated those that agree in certain essential characters, clearly marked from all other genera. Unfortunately we know that this task has been too difficult to accomplish satisfactorily, and scores of instances could be given in which some species of allied genera are so nearly alike, or so variable in character, that their distinction is often purely arbitrary. This consequently renders the scarcity of bigeneric hybrids the more remarkable.

Amongst the extensive collections of plants now in cultivation we find but few well-marked bigeneric hybrids, and including those of doubtful parentage it would be difficult to enumerate more than a score, and certainly not half that number is generally seen in gardens. Perhaps some of the best known examples of this crossing are afforded in the genera *Libonia* and *Sericographis*, which have yielded two hybrids of some merit as garden plants, and which faithfully show the leading characters of both parents. For these the compound name of *Sericobonia* was appropriately suggested, and has been commonly adopted, though they are occasionally seen under the titles of *Libonia* or *Sericographis ignea* and *penrhosiensis*. In both these cases we believe *Libonia floribunda* was the seed-bearing plant, yet the characters of the hybrids approach more nearly to *Sericographis Ghiesbreghtiana*, which furnished the pollen, than they do to the *Libonia*, a result different from the experience of hybridists in some other genera, though much evidence of a similar kind has also been afforded, and it appears very difficult to lay down any rule respecting the matter.

Equally as interesting and nearly as well known is the bigeneric hybrid obtained between *Lapageria rosea* and *Philesia buxifolia*, upon which the title *Philageria Veitchi* has been bestowed, thus happily indicating the parentage of the plant and the firm that succeeded in raising it. In this case the *Lapageria* was the seed parent, but the characters of both parents seem nearly equally shared, and if the prepotency of the pollen parent were a general rule it would

perhaps have been more satisfactory had the cross been reversed, as we might then have had a hybrid more nearly resembling the *Lapageria* in floriferousness than is the case with the *Philageria*. The *Philesia*, unfortunately, is a somewhat shy-flowering plant usually, and a year or two since we gave an illustration of a plant which had not flowered for twenty years, though under good management, and yet suddenly produced its flowers in the greatest profusion after it had been discarded as worthless. The *Philageria* seems to resemble the pollen parent in habit and shyness, or erratic character of flowering, the flowers themselves being more like the *Lapageria*.

Other instances might be named, but attention may be turned for a few minutes to the Orchids, which afford us the most numerous examples of bigeneric crosses. In connection with this family the remarks made by Mr. H. J. Veitch in the paper he read before the Orchid Conference last year are well worth reproduction:—

“Glancing over the whole range of our operations, and the results obtained from them, I may safely reply that thus far the stability of the genera is scarcely affected, and the changes in nomenclature need be very few indeed. Leaving the progeny derived from species of *Cattleya* x *Lælia* out of consideration, the last-named genus being confessedly an artificial one, only two bigeneric hybrids have yet flowered—namely, *Phajus irroratus*, and *P. irroratus purpureus*. Many years ago Dominy raised *Anæctochilus Domini* from *Goodyera discolor* and *Anæctochilus Veitchi*. Plants derived from both crosses are still in cultivation, but the names they bear are simply garden names. We have plants, but which have not yet flowered, raised from *Cattleya Trianae* crossed with *Sophranitis grandiflora*, and from *Cattleya intermedia* crossed with the same species of *Sophranitis*. We have besides a seedling whose parents are *Cattleya Trianae* and *Brasavola Digbyana*, but as the last-named is now referred to *Lælia*, this can hardly be regarded as a bigeneric cross. With these few cases I have exhausted the list. But when we enumerate the capsules with apparently good seed that have been obtained from bigeneric crosses, but from which no seedlings have been raised, the list is somewhat more formidable. Some of the most remarkable of these were produced by *Acanthophippium Curtisii* x *Chysis bractescens*, *Bletia hyacinthina* x *Calanthe masuca*, *Chysis aurea* x *Zygopetalum Sedeni*, *Odontoglossum bicktonense* x *Zygopetalum maxillare*, *Zygopetalum Mackayi* x *Lycaste Skinneri*.”

Phajus irroratus mentioned in this paragraph is especially interesting as a bigeneric hybrid, because the parents are so different in habit, *P. grandifolius* being evergreen, and the *Calanthe* deciduous with strong pseudo-bulbs.

An exceedingly important addition has been made to these bigeneric hybrids by a cross between *Sophranitis grandiflora* and *Cattleya intermedia*, and though when the statement was first made that plants had been raised from crosses between *Cattleya* and *Sophranitis* it was received rather incredulously by some, yet the matter is now satisfactorily proved by a plant that has just flowered in Messrs. Veitch & Sons' Chelsea Nursery. This is one of the Sedenian experiments, the *Sophranitis* having been fertilised with pollinia from *Cattleya intermedia*, and the seed resulting from this cross was sown five years ago. Several plants have been showing flowers for some weeks, and on one of these the long-expected flower opened a few days ago and revealed the fact that a satisfactory bigeneric cross had been accomplished. The plants are as yet small, and the one which has flowered is the weakest, so that a fair estimate can scarcely be formed of the real merits of the hybrid. The growths are slender, 2 to 3 inches high, with oval leaves 1 to 1½ inch long. The flowers 2¼ inches in diameter, like the *Sophranitis* in general outline, the sepals elliptical rather acute, the petals oblanceolate, and both of a light rosy purple tint—a rather curious shade, and having somewhat the

pearance of an underlying tint, probably the effect of the *Sophronitis* colour, though it is strange that such a distinct hue is not more strongly marked. The lip is like that of a small *Cattleya intermedia* with the wings curving over the column, white, and the central lobe, which is much more rounded than in the *Sophronitis*, is of an intensely rich crimson, and very finely edged with white, as is often seen in the *Cattleya* named. The column is white faintly margined with crimson, and is very pretty resting in the white throat of the lip. With stronger plants we may expect to see the characters more nearly resemble *C. intermedia* in robustness, for, of course, at present the difference in this respect is very notable, though there is ample indication of the share the *Cattleya* has had in the parentage.

It is somewhat peculiar that the first published description we have of *Sophronitis grandiflora* appears under the name of *Cattleya coccinea* with a figure of *Cattleya intermedia pallida* in the "Botanical Register" for 1836, and of the former Lindley says, "Stems 2 or 3 inches high; flowers bright scarlet, 3 inches across, a most remarkable and beautiful species." Subsequent examination of other specimens, however, and the introduction of living plants, determined the reference of "*Cattleya coccinea*" to the genus *Sophronitis*, and it has been accepted as distinct by succeeding authorities. It would be rather strange if after all the original name should be found to be an appropriate one, and the fact that a cross has been obtained with the *Cattleya* would seem to indicate that the relationship is nearer than has been supposed. The late Mr. G. Bentham classed both genera in the tribe *Epidendreae*, sub-tribe *Laeliæ*, the chief characters of the latter residing in the pollen-masses, which are either four in one series or eight in two series. *Lælia*, *Schomburghkia*, and *Sophronitis* are associated together as instances of those with the two series of four pollen-masses each, equal or nearly so. In a paper contributed to the Linnean Society's Transactions the same author observes that "*Lælia* is so closely allied in every respect to *Cattleya* that one has great hesitation in accepting the technical distinction of the eight pollen-masses in two series instead of the single series of four (as in *Cattleya*), especially as hybrids are so readily produced in cultivation in which the number of pollen-masses is variable." The relationship of *Sophronitis* through *Lælia* to the *Cattleyas* is therefore apparently rather close, and it will be interesting to learn in what way the pollinia characters of the hybrid have been affected, which Professor Reichenbach, to whom the plant has been referred, will no doubt dilate upon.—L. C.

PROVING GARDEN NOVELTIES.

THE attempt to determine the relative value of garden novelties, as compared with established favourites or well-known sorts, will always be one of difficulty to amateurs. These trials should invariably be not only as inclusive as possible with respect to the latter, but under exactly similar conditions as to the nature and preparation of the soil, as well as to sowing and after treatment, and, what is of very great importance, pronouncedly true stocks of the several kinds should be employed. Afterwards comes the exercise of judgment when the conclusions are formally set out; but these are not always—as they should be—regarded as a "one year's trial," conducted through, as the case may be, a more or less favourable season. The consequence is that amateurs sometimes unintentionally mislead themselves or may be misled by others. For instance, I may allude to the Duke of Albany Pea. To Mr. Abbott, the raiser of this new Pea, should be accorded the merit of having succeeded in raising one of the best of the very large-podded varieties that have been exhibited this season. The true variety produces broad, dark green coloured pods, some of them measuring as much as 6 inches in length, but the ripe seed is not positively distinguishable from some other sorts. During this season I have seen Peas grown under the name of Duke of Albany that had light green coloured pods, and I might add inferior to what I presume to be the true variety. Of course the growers differed in their estimate of it.—S. P. E. S.

[Our correspondent directs attention to a subject of great and wide importance. We have seen not only the Pea mentioned but other varieties of vegetables grown in gardens that were certainly

not derived from true and original stocks; and "trials" in the absence of this initial condition are delusive.]

THE BOILER CONTEST AT LIVERPOOL.

[Since the Judges in this contest appear to decline giving a joint report, we have engaged Mr. Bardney, as one of them, to place the facts of the trials before the public, and he has replied with the following exhaustive communication.]

I FAIL to see that the specified conditions have been carried into effect by the Judges—that is, if I read rightly rule 12 and 13 of the conditions for conducting the "boiler contest." Rule 12 says, "Every point for and against each boiler can be pointed out, and will be carefully considered by the Judges, and may be embodied in the report of the contest, so that competitors should carefully avoid anything that might tell against them." Rule 13 says, "Intending competitors must send in, at the time of entry, full particulars as to heating power, &c., of their boilers, with price at which they are prepared to supply the public, which will be published." An official report has not been drawn up by the Judges, and there appears to be a reluctance to draw up one signed by all, and therefore I consider that our work has not been completed. The competitors did their part, and they have a perfect right to expect the "specified conditions" to be fulfilled by others who took part in the contest. Whatever opinions may be entertained in relation to the contest or its value to horticulture, there is no reason why a report should not be made public, in fact it only leaves the competitors room for complaint. Any amount of prejudiced opposition on the part of the competitors would not have induced me to act independently in this matter. I am taking this step because I think it right to do so, and to prevent incorrect figures being placed before the public, for this has already been done. I do not ask any gentlemen who acted with me to share in any opinion I may express, but leave them to act as they may desire. In the issue of this report I take the sole responsibility, and trust you will send a printed copy to the Council of the Royal Horticultural Society.

In the contest for 2000 feet three competitors tested their boilers—namely, Messrs. F. & J. Mee, Wood Street, Liverpool, with an ordinary saddle boiler with their patent waterway back and water bars. The front plate of the water bars can be removed, so as to remove all sediment from the bars or water box when desired. Messrs. Foster & Pearson, Beeston, Notts, with their "Chilwell Nurseries" boiler, which is composed of longitudinal cast 4-inch pipes; and Mr. T. Wood, Eastville, Bristol, with a longitudinal tubular boiler. This was composed of 2½-inch tubes for water bars, which were also continued up each side and secured in water boxes to the back and front. In addition to these, tubes run directly through the centre of the fire. This was the only boiler of the three that was fed at the top.

Table 1 will show the time of starting (12.30) on the 29th of June, and also each time the thermometers were read. It will readily be seen from the figures after each competitor's name how the temperature tables have been worked out. The first column of temperatures has not been counted, but the heat of the water at starting time found and then deducted from the average heat acquired. Only eleven thermometers could be had, therefore two were inserted on two flows at the extremity of the pipes—that is, 100 feet from the boiler, and one on each return near to the boilers. It will be seen that Mr. Wood had only three thermometers instead of four. This gives him an advantage in the average rise of temperature; but when R. 7 is considered twice as marked * at the bottom of the table he is placed on the same footing as the other two competitors. By taking R. 7 twice the figures may tell slightly in his favour or the reverse, as will be observed by the slight variations in the return pipes of the other competitors. Although Mr. Wood gained the highest temperature by 112° he had a slight advantage at starting time, as will be seen from the temperature of the water as given in the first column, he is only 3.50° in the average rise in the temperature over Mr. Mee and 13.85° over Mr. Pearson. A glance at table 4 will show that Mr. Wood burnt the most fuel, and therefore obtained less heat per bushel of fuel burnt than either of the other two competitors as shown on table 1. Messrs. Foster & Pearson, as will be seen, were well ahead in this respect, and burnt 11 one-fifth bushels less fuel than Mr. Mee and 13 bushels less than Mr. Wood. Partially burned fuel left after banking has been considered equal to half its original quality, as will be observed in table 4. The figures show that Mr. Mee heated his pipes first, and the water was circulating in the return pipe in nine minutes and a half. Mr. Wood's boiler heated rapidly after it was once started, as the temperatures testify in table 1. The "Chilwell Nurseries" boiler heated steadily and circulation was very even (see return thermometers R. 8 and R. 9), but it was not well stoked. This boiler is so constructed that a large body of fire is not needed, but the flame from the fuel must be continually playing amongst the tubes for quick heating, and not checked by putting on too much at one time. It may be stated that the letters F and R prefixed to the tables mean flow and return pipes.

Condition 7 made provision for the pipes being placed too deep with three, five, or ten syphons, or boxes respectively at the extreme end. All in this contest had the last number, but near the boiler the whole of the pipes lead from one box or syphon with ten outlets, or what amounted to the same thing, the arrangements varied slightly. Although the boilers heated 2000 feet of 4-inch piping, the water only travelled 200 feet before it re-entered the boiler. In any future contest it would be better to arrange the pipes so that the water would travel the whole 2000 feet, or the amount of piping to be heated before it could return to the boiler.

This would be much nearer practical arrangements in heating horticultural buildings than was the case in the late contest. As the pipes were arranged the full heating power of the boilers and their economy of fuel or the reverse could not be accurately estimated. The true temperature of the water in the pipes was not recorded, simply because provision had not been made for sufficient thermometers for insertion in all the pipes, which should have been the case, for the whole of the pipes do not heat evenly throughout. The outlets most direct to the inlet of the water box from the boiler always take the lead. Gardeners and others contemplating such arrangements should take note of this, and arrange their pipes accordingly.

Clause 6 specifies that each boiler should not have more than "one flow and two return connections." Mr. Wood tendered a protest against all boilers in the classes in which he competed that had more than the one flow from the boiler. This was against those boilers that had water-way bars and a water back. It was utterly impossible to arrange these without connections, as in the case of Messrs. F. & J. Mees' boiler and Mr. Sam Deards' champion coil in the 1000 feet contest. These connections were made close to the boiler and the water passed out of the boiler through one neck, as specified. These connections were considered part of the boiler, but had they been arranged by the aid of a valve, so that they could have been worked separately or conjointly, they would have constituted separate boilers. It would be well in any future contest to specify precise particulars on this point, and it might perhaps be well to take the ruling of the Judges in this case as a precedent upon which to work in the future.

While on the subject of protests—and they appear to have been the order of the day in the late contest, or, it may be, the one referred to may have led to others being presented—it may be remarked that one was signed by Messrs. Mee, Deards, and Foster & Pearson against the durability of the tubes used in Mr. Wood's boiler. The one on view for inspection was in thickness what is known as No. 8 Birmingham wire gauge. This was said to be the thickness of the tubes in the boiler, but we had no means of examining them, and therefore took the one exhibited as being the same as those in work.

Two of the competitors exceeded the conditions specified in clause 5, as will be seen in table 5. The flow pipe was not to exceed 24 inches above the boiler, or the pipes rise more than 6 inches in 100 feet. Messrs. Foster & Pearson were $1\frac{1}{2}$ inch too high and Messrs. F. & J. Mee $5\frac{1}{4}$. Mr. Wood kept within the stipulations, and was only $4\frac{1}{4}$ inches rise overall. The two first competitors could undoubtedly have been disqualified, but no protest was lodged against the level of their pipes before the awards were made, and the level of the pipes were not taken until after the contest was over. This was certainly a mistake, and should have been seen to on the day previous to the contest, or even earlier than this, for it would then have been too late to rectify the mistake, and the only alternative would have been disqualification. This in future must be avoided by some responsible person being on the ground to take the level of the pipes or bearers as they are arranged; or, better still, to give the proper levels for the men arranging the pipes. This point entailed considerable deliberation, which resulted in not disqualifying any of the competitors, but it was made a point in favour of Mr. Wood against the other two.

The 1000 feet contest was practically between Mr. J. Witherspoon, Chester-le-Street, Durham, with his patent "Red Rose" boiler, and Mr. Sam Deards, Harlow, Essex, with his coil boiler and water bars. Messrs. F. & J. Mee entered this class, but the boiler worked was the same as in the previous class, but its enormous heating surface for this contest in a very large measure excluded them from consideration with the two first-named competitors. The "Red Rose" behaved wonderfully well, but was badly stoked at the commencement. It was clear that Mr. Witherspoon was afraid to bring it to its full heating power until towards the evening of the day of contest. He had trusted to some individual to fit up his pipes with indiarubber rings, and they were carelessly put together, and Mr. Witherspoon had to repack many of his joints on the morning of the contest. The pipes leaked badly, and he forced one or more of the rings out during the contest and lost a large quantity of water. In the hurry to get the pipes fitted up ready for starting the supply tank was placed on one of the flow pipes, it would have been better for the boiler on the return. The temperatures will show at a glance that the boiler heats quickly and is capable of raising a very high temperature. At 8.5 P.M. it was contended that the boiler was generating steam, but the average of the figures recorded will show that these assertions were unfounded. There can be no question that the "Red Rose" would have soon generated steam, for the loss of water through the joints was great, and evaporation by the high temperature of the pipes enormous. The "Red Rose" is a good boiler, and would heat in practice considerably more piping than Mr. Witherspoon gives it credit for in his circular. The owner of this boiler, although only accorded the bronze medal in this contest, need not be afraid to enter it against any boiler in the market on any future occasion.

Mr. Deards' Coil certainly exceeded my expectations, and according to measurement was capable of heating about the specified quantity of piping. This boiler worked steadily and evenly from the beginning to the end of the contest, as will be observed from the recorded temperatures in table 2. This, and the smaller boiler in the 500 feet contest, worked more as if they were actually in practice than in a contest. Mr. Witherspoon certainly gained the highest temperature, but if the various items in the tables are selected it will be seen why the silver medal was accorded to Mr. Deards' Coil, and therefore details need not be entered into here.

There is no occasion to enter into particulars in the 500 feet contest,

for the tables will prove all the particulars that guided the decisions arrived at. Mr. Deards' boiler was a small coil without water-bars, which maintained a steady heat and only burnt 4 bushels of coke, and registered the highest temperature per bushel of fuel burnt of any boiler in the contest. This boiler received the silver medal. Messrs. Wood and J. G. Wagstaff, Alma Iron Works, Macclesfield, Manchester, bronze medals each, as has been recorded. Mr. Wood's boiler was similar to the one that was worked in the 2000 feet contest. Mr. Wagstaff's boiler was an independent horizontal tubular saddle, with a saddle over the tubes instead of bricks, and, therefore, requires no bricks in setting. This is a quick heating powerful boiler, and in some respects resembles the "Red Rose" boiler, though quite distinct.

It appeared to be a general impression that those who gained the highest temperature would win the contest in which they were engaged. This, however, was not the case, as may be ascertained from table 6, for the whole of the points there mentioned were duly considered. Some dissatisfaction exists because those who gained the highest temperature were not given the silver medals, but, I think, if all look at the points brought out, for and against such boiler, with an unbiased mind, they will at once see the foundation for the awards made.

As will be gathered from what I have said, that I am in favour of a report being issued on a matter of such importance to horticulture. I fail to see why it should be expected for the Judges to give the exact points upon which the contest was decided—the main facts being sufficient—any more than those who judged any other portion of the exhibition. In other branches, in which I was not engaged, I heard various complaints, and if we are expected to make public why we decided as we did, they too have a perfect right to do so. The whole facts are given, because criticism is not feared, and if nothing worth retaining can be learned from criticism it is of but little value.

In any future contest I strongly recommend the pipes to be arranged so that the water will travel 2000 or 500 feet, as the case may be, before it can re-enter the boiler. The average heat of the water can then be ascertained. There should be a competent person to give to the Judges the proper level for the pipe and to measure the heating surface of the boilers on Hood's or some other authority's standard. The plate of the boiler and the thickness of the tubes (if any are used) should be examined by the same person, so that some reliable idea of the durability of a boiler can be arrived at. The length of time a boiler has been working in any place should also be handed to the Judges, so that they can make any inquiries they desire. The durability of the boiler is a disputable point and should be thoroughly discussed. If the durability of a cast boiler is inferior to a welded one or *vice versa* they should be classed separately in different contests. Again, it is unfair in giving the price of a boiler to do so without giving the quantity of bricks required to set it and the cost of setting. It is only reasonable to suppose an independent boiler may cost more than one that requires a large quantity of bricks to set it. The first might on this account lose a point, while the latter would perhaps be the most expensive boiler in the end, therefore the cost of setting as well as of the boiler should be placed in the hands of the Judges. In any future contest the boilers entered for competition should at least be divided into two classes—namely, saddles and tubulars and the improved forms tested, say by the side of a terminal end saddle and a tubular boiler of an old make that might be selected for the purpose. Competitors entering in future contests should state at the time of entering their boilers what fuel is best suited for them, then those that burn coke and those that burn coal should be grouped separately. It is perfectly clear that a certain kind of fuel is more suitable for some boilers than others. Coke does not suit all boilers or bring out their heating powers or display the economy of the boiler to the best advantage. In my opinion, when these boilers are compelled to burn coke when coal or a mixture of both is the best they are in a measure handicapped by the side of those to which the fuel selected may prove the most suitable for them. Another point worthy of consideration in future is the smoke that issues from the chimney; if black it is certain that great waste is going on. A thermometer should also be placed in some convenient place in the chimney, and also to the front of the boiler, for some waste an enormous amount of heat at the front in comparison with others. All who walked along the front of the boilers at Liverpool will have discerned this. The supply tank in future should be fixed close to the boiler in the return pipe and fitted with a ball tap, so that the pipes could be kept full of water, as is the case, or should be, in actual practice.

Boilers that are employed in contests in future to heat a given quantity of piping should be the trade size, and not capable of heating 5000 instead of 2000 feet. A boiler too large for the work it has to do means a wasteful expenditure of fuel. In nearly every case in the late contest (Deards' coils excepted) the boilers were too powerful for the work they had to do. It will be seen in one case the water was forced out of the return from the boiler instead of the flow pipe. In two others the water was at boiling point or nearly approaching it. It must be remembered that in practice it is very rarely indeed that the temperature of the water rises to 200° Fahr. in the boiler. It is just as easy to boil the water in large boilers as small ones if plenty of fuel is placed under them, and they have insufficient work to do. We want a boiler in gardens that can be heated as quickly as a locomotive, at the same time to be durable and capable of maintaining a steady heat combined with the greatest economy. The last point depends in a large measure upon the stoker.

Another suggestion, and the last, is that each boiler should be stoked after lighting the fire, say for one hour, and then only hourly, until banking time. This more resembles the practice in gardens than for one or more men to be engaged in stoking the whole of the day pushing on the

fires as rapidly as they can. Competitors in any future contest must not be allowed to know when the reading of the thermometer will take place. The boilers in the late contest were stoked purposely in several instances, so that the temperatures could be at their highest each time the Judges went round.—WM. BARDNEY.

TABLE 1.

Boiler contest at Liverpool for 2000 feet of 4-inch piping from 12.30 P.M., June 29th, to 8.0 A.M. June 30th.

No. of Thermometer.	Competitor.	12.30 P.M.	12.50 P.M.	1.10 P.M.	1.30 P.M.	2.30 P.M.	4.30 P.M.	6.30 P.M.	8.0 P.M.	8.0 A.M.	19½ hours.
F. 1..	F. & J. Mee..	deg.	deg.	deg.	deg.	deg.	deg.	deg.	deg.	deg.	
F. 2..	"	82	105	120	126	130	148	146	156	98	
F. 10..	"	83	110	124	126	130	146	148	156	104	
R. 11..	"	72	77	84	104	108	124	118	135	92	
R. 11..	"	66	74	76	93	104	120	114	130	92	
4		303	361	404	454	472	588	526	578	386	8 | 3724°
											4 | 4655°
											11637°

Heat of water at starting, 75.75°.

Average heat acquired, 116.37°.

" rise in temperature, 116.37° - 75.75° = 40.62°.

" per bushel of fuel, 1.32°.

Total amount of heat produced, 931°.

Amount per bushel of fuel, 33° nearly.

No. of Thermometer.	Competitor.	12.30 P.M.	12.50 P.M.	1.10 P.M.	1.30 P.M.	2.30 P.M.	4.30 P.M.	6.30 P.M.	8.0 P.M.	8.0 A.M.	19½ hours.
F. 5..	Wood ..	deg.	deg.	deg.	deg.	deg.	deg.	deg.	deg.	deg.	
F. 6..	" ..	84	88	126	132	156	163	156	158	110	
R. 7..	" ..	91	92	116	126	150	162	152	153	108	
R. 7..	" ..	71	74	82	92	122	130	124	125	99	
3		245	254	324	350	428	460	432	441	308	8 | 2997°
											3 | 3746°
											12487°

Heat of water at starting, 81.6°.

Average heat acquired, 124.37°.

Average rise in temperature, 124.37° - 81.6° = 42.77°.

" per bushel of fuel, 1.51°.

Total amount of heat produced, 999°.

* Wood, with 4 thermometers, R. 7 being considered twice 8 | 3336°

Heat of water at starting, 79°.

Average heat acquired, 119.87°.

Average rise in temperature, 119.87° - 79° = 40.87°.

" per bushel of fuel, 1.43°.

Total amount of heat produced, 959°.

Amount for one bushel of fuel, 33.6°.

No. of Thermometer.	Competitor.	12.50 P.M.	12.50 P.M.	1.10 P.M.	1.30 P.M.	2.30 P.M.	4.30 P.M.	6.30 P.M.	8.0 P.M.	8.0 A.M.	19½ hours.
F. 3	Foster and Pearson	deg.	deg.	deg.	deg.	deg.	deg.	deg.	deg.	deg.	
F. 4	"	82	90	120	120	146	138	146	143	88	
R. 8	"	80	85	108	110	138	126	134	132	82	
R. 9	"	73	74	78	82	106	104	108	112	74	
R. 9	"	75	76	78	82	108	106	110	112	78	
3		310	325	384	394	498	474	498	498	322	8 | 3393°
											4 | 4241°
											10602°

Heat of water at starting, 77.5°.

Average heat acquired, 106.02°.

Average rise in temperature, 106.02° - 77.5° = 28.52°.

" per bushel of fuel, 1.84°.

Total amount of heat produced, 849.2°.

Amount for 1 bushel of fuel, 54.7°.

TABLE 2.

Contest for 1000 feet, from 12.45 P.M., June 30th, to 8.10 A.M., July 1st.

No. of Thermometer.	Competitor.	12.45 P.M.	1.5 P.M.	1.25 P.M.	1.45 P.M.	2.45 P.M.	4.45 P.M.	6.45 P.M.	8.5 P.M.	8.10 A.M.	19 hrs. 25 mins.
F. 1	Witherspoon....	deg.	deg.	deg.	deg.	deg.	deg.	deg.	deg.	deg.	
F. 2	"	80	90	131	114	150	160	180	190	81	
R. 11	"	84	112	132	121	152	168	181	204	84	
R. 11	"	74	74	80	92	112	130	150	188	74	
3		228	276	343	326	414	458	514	580	239	8 | 3150°
											3 | 3997.5°
											13125°

Heat of water at starting, 79.3°.

Average heat acquired, 131.25°.

Average rise in temperature, 131.25° - 79.3° = 51.95°.

Total amount of heat produced, 1050°.

Amount for 1 bushel of fuel, 104.4°.

No. of Thermometer.	Competitor.	12.45 P.M.	1.5 P.M.	1.25 P.M.	1.45 P.M.	2.45 P.M.	4.45 P.M.	6.45 P.M.	8.5 P.M.	8.10 A.M.	19 hrs. 25 mins.
F. 3	Dear's	deg.	deg.	deg.	deg.	deg.	deg.	deg.	deg.	deg.	
P. 4	"	88	99	108	122	136	148	158	156	84	
R. 1	"	86	98	112	122	138	152	160	158	84	
R. 1	"	73	80	88	98	114	126	138	128	74	
3		250	288	308	342	388	426	456	442	242	8 | 2872°
											3 | 359°
											1196°

TABLE 2—continued.

Heat of water at starting, 83.3°.

Average heat acquired, 119.6°.

Average rise in temperature, 119.6° - 83.3° = 36.3°.

Total amount of heat produced, 957.3°.

Amount for 1 bushel of fuel, 114.3°.

Foster & Pearson retired at 2.45 P.M. from the contest, boiler leaking.

No. of Thermometer.	Competitor.	12.45 P.M.	1.5 P.M.	1.25 P.M.	1.45 P.M.	2.45 P.M.	4.45 P.M.	6.45 P.M.	8.5 P.M.	8.10 A.M.	19 hours 25 minutes.
F. 7	F. & J. Mee.	deg.	deg.	deg.	deg.	deg.	deg.	deg.	deg.	deg.	
R. 8	"	90	131	152	176	181	176	186	182	91	
R. 8	"	82	84	118	131	156	186	186	158	80	
		172	218	270	312	340	332	332	340	172	8 | 2316°
											2 | 2895°
											14175°

Heat of water at starting, 86°.

Average heat acquired, 144.75°.

Average rise in temperature, 144.75° - 86° = 58.75°.

* Result of F. and J. Mee with three thermometers. F. 7 being twice calculated:—

8 | 3598°

3 | 449.75°

149.91°

Heat of water at starting, 87.5°.

Average heat acquired, 149.91°.

Average rise in temperature, 149.91° - 87.5° = 62.41°.

Total amount of heat produced, 1199.3°.

Amount for one bushel of fuel, 118.4°.

TABLE 3.

Contest for 500 feet. From July 1st, 1.15 P.M., to July 2nd, 8 A.M.

No. of Thermometer.	Competitor.	1.15 P.M.	2.5 P.M.	2.40 P.M.	3 P.M.	4.15 P.M.	6 P.M.	8 P.M.	8 A.M.	18 hrs. 45 min.
F. 1.....	Deards	deg.	deg.	deg.	deg.	deg.	deg.	deg.	deg.	
F. 2.....	"	85	88	114	116	128	130	134	92	
R. 9.....	"	88	128	124	120	114	138	144	96	
R. 9.....	"	68	72	80	90	100	110	102	80	
3.....		244	283	322	326	372	378	380	268	7 | 2334°
										3 | 3334°
										111.1°

Heat of water at starting, 81.3°.

Average heat acquired, 111.1°.

Average rise in temperature, 111.1° - 81.3° = 29.8°.

*Deards, without F. 2.

No. of Thermometer.	Competitor.	1.15 P.M.	2.5 P.M.	2.40 P.M.	3 P.M.	4.15 P.M.	6 P.M.	8 P.M.	8 A.M.	18 hrs. 45 min.
F. 1.....	Deards	deg.	deg.	deg.	deg.	deg.	deg.	deg.	deg.	
R. 9.....	"	88	88	114	116	128	130	134	92	
R. 9.....	"	68	72	80	90	100	110	102	80	
2.....		156	160	94	106	223	240	236	172	7 | 1436°
										2 | 20514°
										102.67°

Heat of water at starting, 78°.

Average heat acquired, 102.57°.

Average rise in temperature, 102.57° - 78° = 24.57°.

Total amount of heat produced, 718°.

Amount for one bushel of fuel, 179.5°.

No. of Thermometer.	Competitor.	1.15 P.M.	2.5 P.M.	2.40 P.M.	3 P.M.	4.15 P.M.	6 P.M.	8 P.M.	8 A.M.	18 hrs. 45 min.
F. 3.....	Woods	deg.	deg.	deg.	deg.	deg.	deg.	deg.	deg.	
R. 8.....	"	88	111	144	170	200	208	216	102	
R. 8.....	"	78	90	124	158	186	210	212	98	
2.....		166	04	268	328	383	18	418	200	7 | 2122°
										2 | 3174°
										1387°

Heat of water at starting, 83°.

Average heat acquired, 158.7°.

Average rise in temperature, 158.7° - 83° = 75.7°.

Total amount of heat produced, 1111°.

Amount for one bushel of fuel, 195.8°.

No. of Thermometer.	Competitor.	1.15 P.M.	2.5 P.M.	2.40 P.M.	3 P.M.	4.15 P.M.	6 P.M.	8 P.M.	8 A.M.	18 hrs. 45 min.
F. 5.....	Wagstaff	deg.	deg.	deg.	deg.	deg.	deg.	deg.	deg.	
R. 6.....	"	90	136	158	178	202	212	210	104	
R. 6.....	"	82	88	128	148	184	200	206	100	
2.....		172	224	286	326	386	12	416	204	7 | 2254
										2 | 312°
										161°

Heat of water at starting, 86°.

Average heat acquired, 161°.

Average rise in temperature, 161° - 86° = 75°.

Total amount of heat produced, 1127°.

Amount for one bushel of fuel, 155.4°.

TABLE 4.
FUEL TABLE IN CONTEST FOR 2000 FEET.

Com- petitor.	Bushels of coke at 12 30 P.M., starting time June 29th.	Bushels of coke unburned at 8 A.M., June 30th.	Bushels of ashes.	Bushels of clinkers.	Bushels of coke partially consumed having passed through the fire.	Partially burned fuel estimated at half its original quality.	Bushels of coke actually consumed.
F. & J. Mee	33	7½	1	1	4½	2½	26½
Wood	33	6	2½	1 shovelful	3	1½	28½
Foster & Pearson	36	20	¾	—	1	—	16½

FOR 1000 FEET CONTEST.—CLASS 2.

Witherspoon	20	9½	7½	—	1½	¾	10 1-20
Deard	20	11½	½	1 shovelful	¾	1½	8½
F. & J. Mee	20	8½	2½	2 shovelfuls	3½	1½	10½
Foster & Pearson	Retired. No particulars taken of fuel.						

FOR 500 FEET CONTEST.—CLASS 3.

Wood	11½	—	1½	½ shovelful	2	1	10½
Deards ..	11	6½	½	½ shovelful	1	½	4
Wagstaff..	11	3½	½	½ shovelful	1	½	7½

TABLE 5.

PRICE OF BOILER AND LEVEL OF THE PIPES.

2000 feet Contest.—Messrs. F. & C. Mee, price of boiler, £35. Level of the pipes, 11¼ inches (overall).

Mr. Wood, price of boiler, £24 2s. Level of pipes, 4¾ inches (overall).

Messrs. Foster & Pearson, price of boiler, £21. Level of pipes, 7¾ inches (overall).

1000 feet Contest.—F. & J. Mee, price of boiler, £35. Level of pipes same as previous contest.

Mr. Sam Deards, price of boiler, £22. Level of pipes, 6 inches (overall).

Mr. Witherspoon, price of boiler, £26. Level of pipes, 6 inches (overall).

500 feet Contest.—Mr. Deards, price of boiler, £10. Level of pipes as before.

Mr. Wagstaff, price of boiler, £14. Level of pipes, 4½ inches (overall).

Mr. Wood, price of boiler, £9 18s. Level of pipes as before.

TABLE 6.

CHIEF POINTS CONSIDERED IN THE CONTEST.

Temperature. Level of the pipes. Consumption of fuel. Price of boiler durability. Banking up, or condition of the fire in the morning. Clinkers. Ashes. Heating surface of the boiler. Heat per bushel of fuel consumed.

SMALL ROSE GROWERS.

I AM glad to see that this subject is being so warmly taken up, and that there are others beside myself and "Saxoring" who recognise the fact that there are amateurs and amateurs, and that it is not fair to ask the man who is dependant entirely upon the attention that he can personally give to his Roses to compete with the man who can afford to have all or nearly all the work done for him. The latter is not the actual grower or producer of the blooms he exhibits to anything like the extent that the former is.

I have often wanted to ask in the case of an exhibit from "Jones, gardener to Smith, Esq.," who is in strict fairness entitled to the prize? The gardener is not, for he never bought the plants, he does not bear the expense of the land on which they are grown, and he is paid for all the labour he has expended upon them. Neither, in another sense, is his employer entitled to it, for in most cases the work of production has been performed by another; probably all he has done has been to cut the blooms and stage them, and all the work of getting the boxes to the show, &c., has been done without him. Therefore I ask, Who is to have the prize?

I am glad of the sympathy of "Duckwing" and "F. H. G.," and shall be much obliged if the latter gentleman will give me the addresses of the small county shows to which he alludes, though there I expect I should have to fight the amateur plus his gardener. But if the National Society can be induced to take up the line of "bar the gardener" it will be the dawn of a more encouraging day for many.—A SMALL ROSE-GROWER.

I AM heartily glad to see that the difficulties of small rosarians are being ventilated, and especially that "The National" is being appealed to to take the matter up on new lines. As a member of that Society I know that small classes have been provided purposely to meet such cases as that of "A Small Rose Grower," and again and again have looked over the exhibits in those classes to see how the plan was working, but in nearly every case I have found the prize tickets on the boxes of "Rev. Mr. So and So," "Mr. Blank, gardener to, &c." Now, sir, such men are small Rose-growers only from choice; they have the means, if they so desire, to enlarge their beds almost *ad infinitum*, and are in a position to engage all the help necessary for the production of either a "six" or a "thirty-six."

Again, I know that Mr. Mawley and Mr. F. G. Oliver provided classes for suburban-grown Roses (Why were they discontinued? Cannot they be revived?), to meet the case of many earnest men heavily handicapped by the smokiness of gardens near town; but it does seem to me that no effort has been made to enable the man to win a prize who, of necessity, not of choice, has to do everything to his Roses with his own hands, and I sincerely hope that "The National" will prove itself worthy of its name by establishing a class or classes exclusively for such.

"Duckwing," in last week's issue, speaks of classes "within so many miles," or "for amateurs not employing a regular gardener." This latter is very similar to the restriction mentioned by "A Small Rose Grower," and to my mind is what is wanted to meet such cases, although, as the term "regular" is a very elastic one, I think a stipulation for not more than two days, or three, a week should be made in order to define more exactly what is meant by "non-regular" aid.

I again express the hope that "our Society" will energetically take up the matter (the Palace also ought to), and shall be glad to help in any way towards such a desirable object.—A LADY ROSARIAN.

MADRESFIELD COURT GRAPE CRACKING.

UNDER the above heading "R. M." is pretty near the truth when he states that the cause of this Grape cracking is due, in a measure, to atmospheric moisture. Last year about this time our samples of this Grape commenced cracking, and imagining that a saturated atmosphere had a certain influence in bringing about that unhappy result I determined to try what dryness could do. It must not be inferred that dryness at the root is meant, as that is not the case, having frequently had occasion to give them a thorough soaking from that time, but I always selected what promised to be a bright sunny day for that purpose, and watered the border the first thing in the morning, kept a brisk heat in the pipes, and with full ventilation on the surface of the border was well dried during the day, thereby preserving a dry atmosphere during the night. Since I adopted this method of culture I have always been able to finish Madresfield Court without the loss of a berry. The means employed by some to divert the superabundance of sap into other channels than the fruit is more imaginary than real. By extending the lateral growths they are encouraging root-action, and, consequently, adding to the vigour of the Vine.

It ought to be borne in mind that a dry atmosphere has a tendency to draw the water from the fruit and prevent bursting, whereas a saturated atmosphere will not. My Madresfield Court Grapes are now colouring, and by following the method described I am confident of finishing them without having to cut away the half of the bunches or even half a dozen berries out of the lot. "J. C.'s" explanation of the cause and remedy reminds me of a little episode in connection with the "wonderful tree" at Chatsworth. One gentleman on being asked why the tree was not in leaf—then midsummer—commenced a scientific explanation of the freaks of Nature, when every bud replied to his remarks by sending down upon the unfortunate individual a shower of water, drenching the unhappy gentleman who made bold to elucidate the "whims" of Nature, forgetful of art.—P. RIDDELL.

It was on July 15th that I saw and advised my friend on this matter, and with me up to this date, August 9th, one berry only has cracked; so much for my practice.

In reply to Mr. W. Mosely, let me say that had the free growing of laterals been a preventive with me, I should never have seen any cracking, and in those days I gave even more ventilation than I do now. The foliage does not allow the sun to shine on the berries, as I know what that means. My two Vines are in the corners of a span house, standing north to south, consequently the west corner Vine gets morning sun from about eleven o'clock till the east corner one does of the afternoon sun. To avoid burning the berries I allow the leaves to hang fairly low at the two sides, so they are safe.

I should be sorry for "R. M." to apply water to the roots of my Madresfield Court Vines, as I know what would be the result. Two years ago I inarched Madresfield Court on Gros Colman to put the water to its test, with the result that cracking occurred, and this, too, with very liberal ventilation. Could I be sure of only, say, one or two berries cracking I would soak this inarched Vine, but not having faith I am afraid. Since taking the pen in hand it occurs to me that the fact of "R. M." not employing fire heat for eleven days, and then putting fire on, may be a solution of the mystery. My fire is never out from the time of starting the Vines till the Grapes are cut. Soil to my mind has much to do with the evil, a stiff one being most conducive to the fruit cracking. My Madresfield Court commenced colouring on July 28th. I then bedded the border down (an insile one) with newspapers and dry grass, and no more water will be given while the Grapes hang; this is the fourth year of so doing. My crop for three years has been 160 lbs., being for each Vine yearly 26½ lbs.—STEPHEN CASTLE, West Lynn.

CHRYSANTHEMUMS AND THEIR CULTURE.

(Continued from page 107.)

FLOWERS "DAMPING"—REMEDIES.

ONE of the greatest evils which a cultivator of Chrysanthemums on the "large bloom" principle has to contend with is the subject of "damping." Many hours' anxious thought would be avoided if

such a defect as the one in question was unknown. Some beginners in the culture of these plants may not know what is meant by "damping." I will explain how it affects the flowers, give my opinion as to its cause, and state the remedy I have found the most effective in checking it. Take, for instance, a large bloom of any of the Queen family which is, say, three parts expanded. The

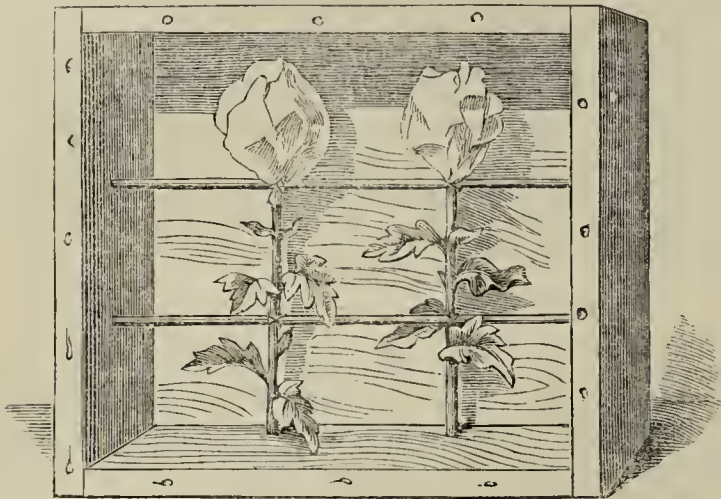


Fig. 18.—Travelling Box.

florets appear to be quite solid, and the prospect of a handsome flower quite cheering. All of a sudden, upon a closer examination several brown specks resembling dust in appearance are plainly seen. In a short time—the next day, for instance—it will be found that the dust-looking specks have increased considerably, quite half the florets being attacked in the same manner; and after the lapse of a few days the damping spreads so rapidly that large holes can be seen in them, and if this continues a few days longer the flower is spoilt entirely. This is what is meant by "damping," and those growers who have experienced much of it know well what the consequences are. It attacks the Japanese varieties exactly in the same way. Sometimes it begins upon the very first attempt of the flower to unfold. I have seen buds of Fair Maid of Guernsey which never expanded beyond the first struggling floret or two, but decayed. M. Ardene is a variety very susceptible to this. Damping is more prevalent in wet foggy weather than in a dry frosty air, thus proving that the atmosphere has something to do with its more rapid spread that takes place then than when the air is clear and dry. Where houses are not tightly glazed and rain drips in upon the plants and flowers the evil is most felt; but I have seen very bad attacks of damping take place where water could not possibly touch the flowers, and the air at the same time was kept in a dry state by fire heat.

I will endeavour to explain what in my opinion is the cause. Having closely observed plants which were grown under various conditions, I have come to the conclusion that overfeeding the plants is the principal cause of the trouble. The plants are gorged with artificial stimulants to make them as gross and thick as possible; the roots are crippled with excess of various manures; and though while wood and foliage are being made it is all right, when that growth ceases then a breakdown occurs in the system of the plants, and they fail to produce what is expected of them. I am more convinced of this after having seen collections of plants which were grown for no particular object except for home decoration. Such plants had never received any artificial manures as stimulants, nothing being given to them but weak liquid manure from farm-yard tanks in addition to clear water, and damping there was unknown.

How to stop at once the spread of this pest is perhaps more than I can explain, but I will describe the manner in which I have seen it checked. As soon as it makes its appearance some growers think it is caused by a lack of ventilation. They at once throw open all the ventilators and doors and cause a thorough draught. My plan has been almost the reverse of this, giving a fair amount of air to the plants, but in such a manner that a direct draught is not caused. We warm the pipes, ventilate freely in the front of the house and a little at the top to let out excessive moisture. It is not the quantity of air, it is the manner in which it is applied that answers best. All drainings from the pots after watering should be dried up as quickly as possible, and everything done to render the air light and sweet, but overfeeding is probably the direct cause of damping in most cases.

TRAVELLING BOX WITHOUT CUPS.

Persons who have reason to send blooms of Chrysanthemums a distance by rail are often puzzled to know how to pack them to

preserve them from injury. When packed in the way adopted with other flowers seldom it is that they are presentable for the show table when they reach their journey's end. For the information of those who do not know how to pack these flowers securely without the aid of the cups and tubes which are generally used for exhibition purposes I have had a drawing prepared, showing the best method I have yet seen. Flowers secured in that way will travel by rail 500 miles without being in the least damaged. It is a capital way to take a few extra blooms when going to a show in case of accident, and when no space in the exhibition box for auxiliary flowers is available. A careful cultivator never goes to compete without one or two extra flowers in case of an accident. The annexed engraving (fig. 18) represents a box packed with two blooms as an illustration how they should be secured. The size of the box must be determined by the number of flowers to be conveyed. If the box is to be sent alone, a stout packing case should be selected, but if it accompanies the exhibitor a box of lighter construction is all that is required. Take, then, an ordinary packing case, lay it on its side, fasten to each end (by means of a nail driven through the end into each) a lath or stick at about equal distance from top to bottom of the box, cut the flowers with a stem of say 1 foot long, and to the cross sticks fasten the stem of the flower securely, first wrapping around the flower a single fold of very thin tissue paper, securing it at the top by a twist in the paper. Should the box by any means get turned upside down no harm can happen to the flowers packed in this manner. If they have to be carried a long distance, tie some wet moss securely around the bottom of the stem. This retains the blooms

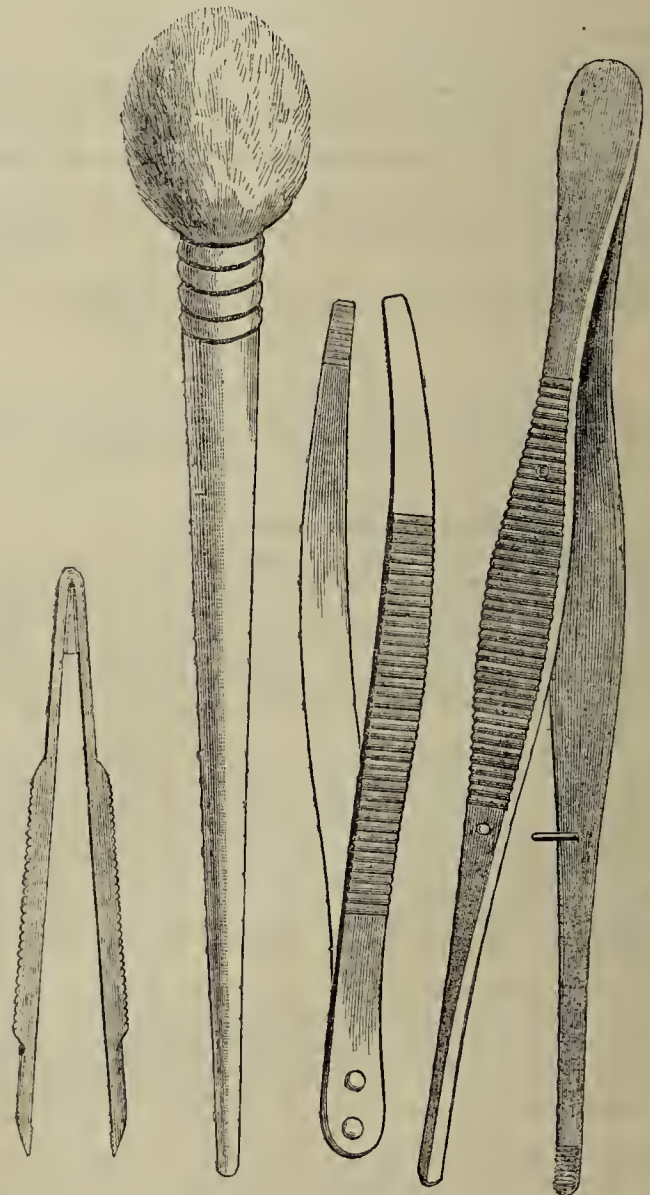


Fig. 19.

fresh much longer. Double rows either in height or width can be fastened precisely in the same manner if a greater number is necessary, as the stems need not be cut so long, but when they are less than 6 inches in length the process of cupping the blooms is rendered more difficult, hence my reason for selecting 12 inches of stem to each. The double rails to which the stems are fastened make them much firmer than when one only is used. The flowers

may be near enough to touch each other, when no harm will be done. The lid or door should be fastened with four screws, which prevents the jarring caused by nails and is more easily removed at the end of the journey.

APPLIANCES, FORCEPS, AND BRUSH.

Cultivators of Chrysanthemums intended for exhibition or even for home decoration ought to provide themselves with appliances, such as forceps or tweezers for the manipulation of the flowers with a view to their improvement, even if they are not intended to be placed upon the exhibition table, as a few minutes' attention given to a flower improves its appearance greatly. Amongst growers there is a variety of opinions as to which is the best kind of forcep to use for dressing the blooms. Fig. 19 represents the best instruments I have yet seen. As each cultivator has his own particular fancy in the selection there is no name by which they are known; those shown in the engraving are made from steel of a special pattern to order. Such instruments vary in price from 3s. 6d. for the smallest size to 7s. 6d. for the largest pair. The brush is made of camel-hair 1 inch long, and the handle measures 6 inches. This is used to free the flowers from dust, which they are almost sure to collect in travelling, and upon the white varieties is a defect, whereas by gently brushing in an upward direction the dust can easily be removed. The smallest size is 3 inches long and one-quarter of an inch wide in the middle. The mouth or points are very narrow, just the extreme point rounded off; these are used for finishing off a bloom for exhibition. The next or middle size are 5 inches long and five-eighths of an inch wide at the rough part, which is made to allow of a firm grip being had of them. The points are square, as can be seen, are rough and one-eighth of an inch wide; these are used for taking out any bad or wrongly placed

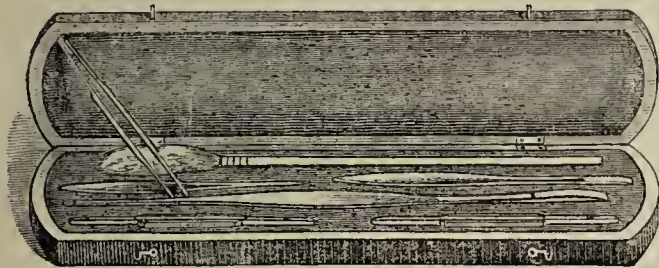


Fig. 20.—Instrument Box.

petals. The largest size measures 8 inches in length, are half an inch wide at the rough or grip part. As will be seen, they are narrow, one-eighth of an inch wide at the points. These also are for removing petals from the centre of a flower of large dimension. They are made with a very easy spring, which facilitates the handling of them considerably. There are various other patterns and sizes, but I consider these a fair sample; any optician or tool-maker can supply them on order. Some growers prefer to use those made of bone and ivory. The objection to them is that they do not grip the florets firmly enough, they are so liable to slip off. Fig. 20 shows the box in which the forceps are kept when not in use. It is not absolutely necessary that such a thing be used, but where much manipulation is required I find it better to have a box for the instruments, as greater care can be taken of them; they are not so likely to be lost or get rusty by laying about. The size of the box is 10 inches long, 2½ inches wide, and 1¼ inch deep; spaces are made wherein fits the forceps and the brush also; the box in question is lined with velvet.—E. MOLYNEUX.

CULTIVATION OF THE STRAWBERRY.

(Continued from page 87.)

STRUCTURES SUITABLE FOR FORCING.

A STRAWBERRY house should be high at the sides so as to allow of sufficient head room all round, or 6 feet at the eaves, and of this half or 3 feet of the lower part may be brickwork or wood, the upper part glass, and made to open the entire length from the bottom outward by crank and lever movement. A shelf of slate or 1-inch deal, 7 inches wide, may be placed at the side about 3 inches below the wall plate, supported by iron brackets galvanised, and another of 1-inch deal about 15 inches from the glass of the roof, which is also best supported by iron brackets galvanised secured to each front upright. This, or the upper shelf, must have half-inch square strips of wood secured to the upper outer edges, "planting" them on the shelf bedded in white lead, and secured with screws. These will form a dish, and with holes at every alternate front upright or light through the shelf, and a half-inch zinc tube inserted and taken below

the other or lower shelf, will prevent the water dripping on to the lower shelf from the upper one. These side shelves are very useful, and increase the standing room considerably; besides, being at the sides they get more air, and so are suitable for fresh introductions. I find these shelves hold quite enough plants to fill the central stage, where they must be given more room; the shelf plants are, therefore, coming on whilst the central stage ones are perhaps flowering and setting. The roof should be at an angle of 35°, and have a lantern ventilation which will take some of the height off the otherwise sharp ridge, and the opening must be 12 inches, the cover of the opening to be raised by a ratchet and wheel or handle. The pathway, or from the inside of the wall, may be 3 feet wide, the width of the house inside not being less than 15 feet. This will give room for a 9 feet wide stage, or 4 feet 6 inches on each side, we get room for nine shelves, four on each side, and a central one. The shelves need only be 7 inches wide, but fixed in the centre of the foot space, or 2½ inches from each side, and this will prevent one tier dripping on to the one below it. The lowest shelf of the stage must be 2 feet 6 inches from the floor, and the uppermost one 3 feet from the glass, so by putting a string tight from the outer edge of the upper and lower shelf it will show where the other shelf edges are to be. The house, of course, can be of any width, only if narrower there will be fewer shelves, as less space than 3 feet cannot well be allowed for a path, the side shelves taking up some room. On dry sites the pathway may be sunk, having the steps and area outside.

Span-roofs should have the ends north and south. If a lean-to is used the aspect should be south, and I need not enter into particulars, as lean-to's are only the half of spans. A house with a pathway up the centre is also suitable for forcing Strawberries, provided it has side ventilation, though it may have blank side walls, but with wooden ventilators in the walls. We have only to reverse the staging, having the shelf at the back about 15 inches from the glass, and then falling to the path, each tier proportionately, as the height allows 12 inches width for each row of plants. Bricks afford a ready means of improvising a stage where there is a bed, as in a Cucumber or Melon house.

All houses are not suitable for forcing Strawberries. The structures must be light, well ventilated, and properly heated, having sufficient hot-water pipes to maintain a temperature of 70° to 75° without hard firing. The next condition is to keep the plants near to the glass. They will not take any harm at a distance of 3 feet or more, provided they have unobstructed light, but the nearer they are to the glass without touching it the better. Air is essential, and if it reach the plants below or above them it will be preferable to coming directly upon them. These remarks are made as Strawberries have very often to be accommodated in Peach houses and vineries on suspended shelves, which are not the best places for them, but much can be effected by such means by removing the plants as the structures accord in temperature, &c., with the requirements of the Strawberries in their different stages. To force Strawberries well two structures are required, so that a succession can be maintained, as up to setting they do not require a high temperature, but after the fruit is fairly swelling they require a high temperature with corresponding moisture, which can hardly be accorded in Peach houses and vineries without prejudice to the Peaches and Grapes.

PREPARING FOR FORCING.—The house must be clean. The glass must be washed both inside and outside with clear water, and not leaving any dirt or green, as that is speedily added to. The woodwork brushed and thoroughly cleansed with soap and water, the brickwork or other similar surface thoroughly washed with hot lime, if necessary painted after any repairs, the whole put into good order, not forgetting the heating apparatus and the working of the ventilators.

The plants having been in frames or pits will be available at any time for introducing to the forcing structure. Plants that are to be started in November for the earliest crops must be placed in the frames or pits early in October, and as they will be removed by the middle of November others can take their place for starting later, and so on as the succession plants are removed for placing in heat, others from the outside reserves can be placed in the frames. It is well in all cases to have the plants a month to six weeks in frames preparatory to their being introduced to artificial heat, therefore sufficient frame or pit room must be at command to allow of their being so treated. Plants, for instance, that are to be started by the middle of November must be in the frames by early October, those for January starting by the middle of November; for February from the middle of December to early January, and for March from the middle of January to early February. As these will go out in

March their places can be taken by the latest plants for cool or late started structures, or if these are not forthcoming the plants can be fruited in the frames or pits so as to maintain the succession of fruit until those in the open ground continue it. The frame treatment to some extent accelerates the forcing process by perfecting and forwarding the flower buds, at least they start better, not being disposed to make so much leaf growth before the trusses appear as plants taken direct from the open ground, and this, we think, in consequence of the frame treatment being favourable to the formation of roots.

Before being placed in position the plants should have any decayed leaves removed, but there must not be any attempt at close trimming, such as is sometimes done, the crown, or very little more being left, but any green foliage be retained. Clear the surface of the soil from any mossy growth. The drainage must be seen to. If worms are in the pots stop the base with clay, and soak with lime water. The worms will be expelled, and the drainage can then be put right. The pots must be washed clean, and a surface dressing given. I find nothing better than fresh horse droppings rubbed through a sieve. Turfy loam made fine with a quart each of soot and bonemeal, or any advertised fertiliser, for I find all good, added to every bushel is a capital surface dressing, but I prefer the droppings, or well decayed manure. It should be pressed down moderately, leaving sufficient space for holding water.—G. ABBEY.

(To be continued.)



WE have been requested to remind growers and exhibitors of the DAHLIA that the grand National Show of these noble autumn flowers is to take place this year at the Crystal Palace as usual on September 3rd and 4th. The Turner Memorial prize (silver cup, value £10, for twelve show and six fancy Dahlias) is open for competition on this occasion. Entries for the Show should be sent in on or before August 27th, and the schedules may be had on application from the Honorary Secretary, Mr. Thomas Moore, Botanic Gardens, Chelsea, London, S.W., who will also thankfully acknowledge any contributions for the prize fund. We shall be glad if the Directors of the Show are well supported in their efforts to extend and perfect the culture of the Dahlia in its several forms, and to make the Exhibition a great success.

— MR. W. KRUSE remarks:—"We have some ONIONS, raised from seed sown in the autumn of 1884 and harvested last year, still sound and good, and they have not yet commenced to grow. Is not this rather unusual? The variety is Trebons. Some of another sort kept well but have been over some time. Both were well harvested."

— A GENERAL meeting of guarantors and life members of the GRAND YORKSHIRE GALA AND FLORAL EXHIBITION was recently held in the North-Eastern Hotel, York, Mr. Alderman Rooke, Vice-Chairman of the Committee, in the chair, when it was decided to give to the charities of York out of this year's profits the sum of £40, and a further sum of £25 added to their invested capital. Votes of thanks were passed to the Rt. Hon. the Lord Mayor, Mr. Alderman Terry, the popular Chairman of the Committee, and, as Lord Mayor, President of the Society; also to the Vice-Chairman and other officers, including Mr. John Wilson, who has been the active Secretary of the Society from its formation twenty-eight years since, and to whose untiring interest in the gala so much of the success is due. £1370 appears to have been taken on the three days of the last Show, and the Committee have an invested fund of £1700. June 15th, 16th, and 17th, 1887, will be the date of next year's Exhibition.

— "S. C." writes, "THE VALUE OF MULCHING was very strikingly brought under my notice recently. At the end of May a ribbon border was planted with small late spring-struck Pelargoniums, they were in fact scarcely rooted. Knowing this, I advised the application of a thin layer of light decayed stable manure, and one-half of the border was so treated, the other not, and the difference is astonishing. The border is quite spoilt, one-half being as large again as the other. No doubt the heavy rains have helped the quick growth, but the mulched portion never felt

the drought and cutting winds. Many a bed or border, especially in exposed positions, can be mulched without being unsightly, and would well pay for so doing."

— WE are requested to state that the CHEADLE HORTICULTURAL SOCIETY (Cheshire) will hold their nineteenth annual Flower Show on August 21st and 22nd, when £165 will be offered in prizes.

— A SUCCESSION OF PEACHES IN ONE HOUSE.—Mr. J. Muir writes: "Some growers have house after house of Peaches to come in after each other, and they need have no difficulty in having a supply of Peaches from May until November, but the majority of growers have only one or two houses, and in cases of this kind it is a great advantage to have each house planted with good successional varieties. Here we have a cool house containing six trees, three on the back wall and three on the front trellis, and from these we gather fruit for three months. The earliest variety in the house is Hale's. Last year it ripened its first fruits in the latter part of June, but this season they were not ripe until the first week in July. It was finished some time ago, and was succeeded by Royal George, which will soon be over, when Prince of Wales comes in, and this is succeeded by Late Admirable, which is yet green and will not be ripe until September. We have thus a three-months supply of Peaches from the one house, and this result is much more satisfactory for a table supply than if the house was planted with only one or two sorts, which would be all over in two or three weeks."

— THE ERDINGTON HORTICULTURAL EXHIBITION at Sir Josiah Mason's Orphanage, near Birmingham, took place on Monday, August 1st, and was in every way most successful. The Orphanage was founded and endowed by the late Sir Josiah Mason, and accommodates about six hundred orphan children. The swings used by the children are fixtures close to the field where the Exhibition was held, and an unfortunate accident occurred to Mr. A. Wright, of the firm of Wright Bros., nurserymen, Erdington, who was struck by one of the swings and his shoulder blade broken and his spine injured. At all outdoor flower shows it would be well to appoint some active person used to such work to take up the management of the grounds and see that order was kept and dangers avoided.

— WE are requested to state that JEYES' SANITARY COMPOUNDS COMPANY, LIMITED, having been originally entrusted with the disinfection of the native quarters in the Colonial and Indian Exhibition, and having carried out the same to the entire satisfaction of all the authorities, have now been specially appointed by the Royal Commission to undertake the disinfection of the whole of the Exhibition buildings.

— THERE is now an excellent collection of CARNATIONS AND PICOTEEs in the Royal Horticultural Society's Gardens at Chiswick, and a selection of these is given in the following note by a correspondent:—"Beginning with the Carnations, we might start with one called Chiswick Red. It originated at Chiswick, and is a fine dark red self; a telling flower, of good substance. In Scarlet Bizarres, the best of the varieties may be found in the following:—Duke of Grafton (Hooper), James McIntosh (Dodwell), Robert Lord (Dodwell), Master Stanley (Dodwell), Arthur Medhurst (Dodwell). Crimson Bizarres: Albert Chancellor (Abercrombie), Stanley Hudson (Dodwell), Thomas Moore (Dodwell). Pink and Purple Bizarres: James Taylor (Gibbons), Mrs. Barlow (Dodwell), Princess Beatrice (Beardsley), Sarah Payne (Ward), Tom Foster (Dodwell). Purple Flakes: Jane (Baldon), Sporting Lass (Flowdy). Scarlet Flakes: Flirt (Abercrombie), Figaro (Abercrombie), Jupiter (Abercrombie), Dan Godfrey (Holmes). Rose Flakes: John Kent (Whitehead), Jessica (Turner), Rose of Stapleford (Headley). Fancies: Queen Victoria (Benary), Anna Benary (Benary). Of those refined flowers, Picotees, honourable mention may be made of the following:—Red-edged: Jewess (Fellowes), Mr. Dodwell (Turner), Mrs. Brown (Payne), Lothair (Fellowes), Lord Valentia (Kitland), Hilda (Dodwell), Robert Scott (Flowdy). Purple-edged: B. B. Coutts (Payne), Edith (Dodwell), Evelyn (Hewitt), Mrs. A. Chancellor (Turner). Rose and Scarlet-edged: Mrs. Payne (Fellowes), and Daisy (Dodwell)."

— THE *Tropical Agriculturist* for July states that recently an offer has made by Mr. G. Jasper Nicholls, C.S., to send, at his own expense, to anyone applying, a supply of seeds of the BAMBUKA KATANG. But probably few people not botanists appreciated the meaning of the offer. The Bambusa katang is not only the largest Bamboo grown in India, outside of Burma and Assam, but from its habit of flowering only once in fifty-five or sixty years, it is also excessively rare. Some specimens exist

at Jubbulpore, where they are remarked by every visitor for their beauty and size; but until these should have arrived at the time for maturity and decay, in another forty years or so, it was not known that there would be any seed procurable, in these parts of India at any rate. Mr. Nicholls however, was fortunate enough to secure a clump in full flower recently on the banks of the Mabanadi, in Raipnr, and knowing what it was, had all the seed scrupulously collected by the villagers, and in the hope of getting the tree widely distributed over Upper India, he is now offering it to the public. The Bambusa katang grows to a height of over 60 feet; its tall stem gives the best natural material for scaffolding, and in beauty as well as size it may claim to excel all the varieties of Bamboo known to the Ganges plain and Deccan highlands.

— **CROCUS SHAROJANI.**—"The Croci, which we have been in the habit of associating only with spring flowers, such as Tulips, Hyacinths, Daffodils, &c.," says a correspondent, "M.," "require to our thinking very little development to form an important part of our hardy flowering plants from the end of July until the following summer. The species above named, and which we believe was introduced through the exertions of Mr. Maw, of Crocus fame, is now flowering vigorously, and like to continue, until some of the other species takes its place. It seems to us that very little attention on the part of plant improvers is required to make this orange gem as variable and as popular as the better known vernal Croci generally grown in gardens. Those who are already possessed of a fairly representative collection rarely if ever want flower between the times above stated, and these autumn-flowering kinds we believe only require to be known to be as much sought after as the others. They require no more attention, the beds that will grow the vernal will also grow the autumn ones, the only attention being the periodical lifting, say every three years, that all require, owing to the tendency the corms have of appearing on the surface caused by the formation of the new corms above the old ones. C. Sharojani is a native of the North-west Caucasus, the mountains south of Trebizond, 7000 feet above the sea, associated with C. vallicola, to which it is nearly allied. The flowers are large, deep orange, each corm producing a single flower; and very handsome a clump of them look at this early season."

— "T. W. S." writes, "**GALTONIA (HYACINTHUS) CANDICANS** is one of the showiest and handsomest of our border flowers just now. It succeeds remarkably well with us on light soil, the bulbs not only keeping sound in the open border during the winter, but also increasing rapidly in size. Ours are planted in groups of three, and in this way, when in bloom, they form a graceful group. To those unacquainted with this pretty plant we may state that it has stout Hyacinth-like foliage, from the centre of which it throws a spike 3 feet long, three-fourths of which is furnished with large bell-like white flowers, which last in perfection for fully a month."

— **THE National Chrysanthemum Society** have issued a revised edition of their **CATALOGUE OF CHRYSANTHEMUMS**, which has been prepared by a specially selected committee, and is in all respects a great improvement upon the first edition, though published at the same price—namely, 6d. There are thirty-six pages, in which the varieties are mostly arranged in single columns, with descriptions, synonyms, and raisers' names. The varieties are classed in ten sections: 1, incurved varieties; 2, incurved varieties not generally cultivated; 3, Japanese varieties; 4, other Japanese varieties not generally cultivated; 5, reflexed varieties; 6, large Anemone varieties; 7, large hybrid Anemone varieties; 8, Pompon Anemones; 9, Pommpons; 10, summer and early autumn varieties. It may be estimated that over 1000 forms are described, some necessarily briefly, but all the leading varieties are fully described. Considerable care has been exercised in the revision, and the Catalogue will be found a useful one to all Chrysanthemum growers and exhibitors.

— *Nature* states that, "The death is reported on June 22 of Dr. H. F. HANCE at AMOY, at which place he was Her Majesty's Consul. Although no independent work bears Dr. Hance's name, he has done more than any other man to make us acquainted with the flora of China, both of the empire and of the British colonies. His contributions to botanical literature are to be found in periodicals, very largely in Trimen's *Journal of Botany*, and the number of species described by him for the first time is very great. He was a contributor to the herbaria at the British Museum and at Kew. It is to be hoped that his herbarium will be brought to London and deposited where it can be consulted, and his types readily compared with those of other authors. A full synonymic catalogue of all

the known Chinese plants is now in course of publication by Messrs. Forbes & Hemsley, and is greatly needed."

— **BULBS FOR THE PARKS.**—We learn that the Metropolitan Board of Works have accepted the tender of Mr. B. S. Williams, Victoria and Paradise Nurseries, Holloway, London, N., for supplying Hyacinths, Tulips, Crocus, Daffodils, &c., Finsbury Park, Southwark Park, Leicester Square, Victoria Embankment, Chelsea Embankment.

— **THE tenth Exhibition of the BASINGSTOKE HORTICULTURAL SOCIETY** will take place by kind permission of S. Field, Esq., at "Gold-ing," Basingstoke, on Thursday, August 19th, 1886, when prizes will be awarded to gentlemen's gardeners, nurserymen, amateurs, ladies, and cottagers for the best samples of flowers, fruits, vegetables, and butter. Mr. A. E. Holdaway, London Street, Basingstoke, is the Secretary.

— "B." says, "What a fine tree for street or avenue planting is **ROBINIA BESSONIANA**! An admirable illustration of its usefulness for this purpose is afforded just now in the fine avenue of it at Sutton Court Road, Chiswick, in a line with the entrance to the Royal Horticultural Society's Gardens. The trees were pruned last season, and they look all the better for it, the trees at the present time having good bushy round heads of their characteristically bright green foliage. Looked at as a whole, a pretty and refreshing effect is produced, giving one quite the idea of a Parisian boulevard. Certainly the flourishing condition of these trees is in marked contrast to many other samples of street planting."

TRENCHED VERSUS UNTRENCHED SOIL.

HERE is a nut for Mr. Iggulden to crack on the subject of trenching. Half of our midseason crops of Peas were sown on untrenched ground, and the other half on ground trenched two spits deep last autumn. The first-named crop proved almost a failure, yielding very few Peas, the haulm turning yellow three weeks ago, and now quite dead. The second crop, on the trenched ground, though the same kinds—President Garfield, Reading Giant, and Champion of England—and sown at the same time, are just coming in for use, in splendid health, full of vigour, and promise to yield a heavy crop for some time. Carrots, Parsnips, and other crops look far the healthiest and most promising on the trenched portions. Our soil is rather light, 2 feet thick, and resting on a deep gravelly subsoil. Reports have reached me from other friends fully confirming my experience gained on this point during the recent drought. Non-trenching may succeed at Marston and a few other favoured spots, but not in Kentish gardens—at least, such is the experience of—A KENTISH GARDENER.

DELPHINIUMS.

THE Delphiniums are very showy at this time of the year; few plants contribute so much beauty to our herbaceous borders. As it is well known, there are many species in cultivation, including annual and perennial, but the most showy at present are the perennials. They vary in height from 1 to 8 feet. There is also a great variety of colours and different shades, from pure white to scarlet, and through nearly every shade of blue and purple. They are quite hardy and easily cultivated, for as a rule they seem to thrive in nearly every situation. A good deep loam is their favourite soil, but I have seen them grow equally as well on a hot sandy soil, if well manured and watered when dry; but of course, on a good deep loam less attention is required.

When it is desirable to increase the number of plants quickly it is best to divide the old plants in the spring as soon as they commence growing, but where plants are not required in a hurry they may be raised from seed, taking care to select the seed from the best colours. But where a continuation of bloom is desirable the flower spike should be cut off as soon as it has finished flowering, and not be allowed to seed. If so treated they will start again and keep up a succession of bloom. But to keep the plants from becoming exhausted, they should in this case have a good top-dressing of manure, which will greatly increase the number of flowers.

D. NUDICAULE.—A compact-growing species with scarlet flowers, varying from light red to a deep crimson, attaining the height of about 2 feet. It is very pretty and quite hardy, and commences to grow very early in the spring; but I have found that a warm soil suits it best, for on a cold soil it sometimes damps off.

D. CARDINALE.—A beautiful tall-growing species with flowers of a bright scarlet, and as a rule continuing longer in bloom than D. nudicaule. It is quite hardy, although on damp borders it would be wise to protect it in the winter by a handlight, for if allowed to get too wet it is liable to suffer seriously.

D. CASHMERIANUM.—This, commonly called the Cashmerian Larkspur, is a very showy species, but, like all the others, vary greatly in colour, from a purple to a light blue. Its usual height is 18 inches, but it sometimes attains the height of 2 feet. To be successful in its culture plant it in a well-drained position.

Amongst the perennial hybrids may be mentioned Madame Henri Jacotot, bright sky blue; Richalet, dark blue, light centre; Pompon Brilliant, deep violet; Georges O. Huit, rich blue; Victor Lemoine, very

dark blue with light centre; Palmerstone, light blue very good; Borbue, deep blue, orange centre; Coronet, dark blue with light centre; Celestial, deep blue with very large spike; Belladonna, fine blue red, very dwarf; and other varieties too numerous to mention.—C. C.

ABERAMAN PARK.

THE Glamorgan seat of Sir George Elliott, Bart., M.P., is situated midway between Aberdare and Mountain Ash, and within half a mile of Treaman station on the Taff Vale Railway. The house is a magnificent modern structure, and commands a charming view from the south front through the valley of Aberavon. A glimpse of Duffryn House, the seat of the Right Honourable Lord Aberdare, is seen in the distance. Aberaman Park is surrounded by mountains, presenting here and there rich scenery and pleasing pictures; but the riches of Aberaman are to be found under ground in an inexhaustible supply of minerals, for nearly a dozen coal mines, besides ironworks, may be counted within a radius of a few miles from the house. The grounds are entered from the Aberdare road by a neat lodge. The carriage drive is about half a mile in length, which sweeps gently to the right and then to the left as it approaches the south front of the house, which was gay at the time of my visit with bedding plants in small beds and borders arranged on a well kept grass lawn. Conspicuous amongst bedding plants was a dwarf variegated *Tropæolum* not yet in commerce. The variety in question was a sport obtained from a green variety several years ago, and little notice was taken of it until last season, when it was greatly admired by all who saw it, and deservedly so. This season it is planted extensively, and appears to be quite distinct from any other variety. It is dwarf and free in habit, with close silvery foliage and bright scarlet flowers borne well above the leaves in great profusion, and closely resembling *Tropæolum Cooperi* in colour. The house is finely sheltered from the east and west by majestic Evergreen Oaks, purple and common Beech, &c. Attached to the mansion on the east side is a large three-quarter span-roofed conservatory, which contained a miscellaneous collection of flowering plants. Amongst them were many good Fuchsias, Begonias, Eucharises, and some fine plants of *Acacia armata*, *Dicksonia antarctica*, *Seaforthia elegans*, and many others. The walls were covered with *Abutilon Boule de Neige* and *A. Thomsoni*, *Acacia dealbata*, and *Camellias*, all of which were clean and healthy. On leaving the conservatory we passed a well kept lawn which is intersected by gravel walks studded with small Conifers, bedding plants, and Roses. The latter were extra good in growth and flower. A little to the east of this were several large beds and clumps of *Rhododendrons* and hardy *Azaleas* in the best of health, which must have a grand effect from the house when in bloom, as the ground slopes from the house towards the Park. They can also be seen to advantage from the main walk leading to the principal range of glass, which is close to the house.

The first division in this range is a late vinery 50 feet long by 18 wide and 18 high. The varieties grown here were Bowood Muscat, Venn's Black Muscat, Muscat Hamburg, Lady Downe's Seedling, West's St. Peter's, Trebbiano, and Gros Guillaume. The Vines are only three years old. The roots are confined to the inside border, and the canes are fairly robust, carrying good crops of useful Grapes, with some monster bunches of Trebbiano and Gros Guillaume, which if finished well will be a credit to Mr. Mitchell. The next division contained Gros Colman, Trebbiano, Golden Champion, and Black Hamburg. Trebbiano was again conspicuous for size of bunch, and the Champions for size of berry; whilst the Black Hamburgs had as useful a crop of Grapes as needed be desired. They were also some well-grown plants in this vinery—notably, *Lantana borbonica*, *Cycas revoluta*, *Phoenix dactylifera*, *Phoenix reclinata*, *Hoya carnosa*, *Begonia Ingrami*, and a very fine plant of *Ceclogyne cristata* nearly 2 feet through, and many other smaller plants suitable for house and table decoration.

We next entered the early vinery, which is 36 feet long. Only two varieties are grown in this house, Black Prince and Black Hamburg. The Vines are young and vigorous, planted at the distance of 4 feet apart, with the roots confined to the inside border. The crop in this house was all that could be desired in size of bunch, berries, and general finish. Next to this range is a Pine pit 60 feet long by 15 wide, filled with excellent fruiting Pines planted out in the bed. Pine-growing is made a speciality at Aberaman, and Mr. Mitchell is well known throughout South Wales as a successful grower; and he well merited the cultural commendation the Royal Horticultural Society awarded last March for a bunch of Black Prince, weighing more than 9 lbs. The next house is a span-roofed Pine stove, 66 feet long by 20 wide. The centre bed was filled with as fine a stock of succession Pines as we could wish to see. Tomatoes and Melons are also grown in pots in this house. The former, Abernant variety, in 12-inch pots, was quite a picture; I have seldom seen better. Besides Tomatoes and Melons on the front and back stage were some creditably grown plants, particularly the following:—*Croton Wismannii*, *Bougainvillea glabra*, *Stephanotis floribunda*, *Allamanda Hendersoni*, and *Coleuses* in variety. There were also several pots of *Eucharis amazonica*, from 4 to 5 feet through, and in excellent health. This charming plant detests being annually disturbed at the roots. The finest specimens I have ever seen, and undoubtedly the most floriferous, were grown in a nobleman's garden in South Wales, and they had not been potted for several years, and I doubt if they would have been potted then had they not hurt the pots they were growing in.

Immediately in the back of this range is a small Cucumber house, filled with Sharpe's Epicurean, seemingly a useful variety. Close to this is the bothy for young men, potting-shed, and store-rooms, and also the frame or nursery ground, in which were some good specimen Zonal

Geraniums, Azaleas, *Camellias*, *Chrysanthemums*, and many other winter-flowering subjects. Adjoining the nursery ground is an old orchard; the trees were carrying a fair crop of Apples and Pears. The gardener's house and kitchen garden lie a little north of the houses. The former is a commodious dwelling. The garden is small, but every corner was utilised to the best advantage, with excellent vegetables and small fruits in abundance. The same may be said of Plums and Pears on the wall trees.—A. SMITH.

CODONOPSIS (GLOSSOCOMIA) OVATA.

As far as we are at present aware, only two species of this somewhat rare genus are in cultivation, although specific names are rather abundant. The plant represented in the annexed cut, and which is the showiest of the two, was first introduced under the name of *Glossocomia*, but which has been superseded by that of *Codonopsis* in the "Genera Plantarum." It is easily cultivated, indeed as easily as any of the *Campanulaceæ*, after the seedling stage has been passed, our plan being to sow the seed in pots in a heated frame, pricking out the young plants as soon as they are large



Fig. 21.—*Codonopsis (Glossocomia) ovata*.

enough in boxes or pans, planting them out the following spring, the utmost care being required to guard against breaking the very brittle roots.

The choice of position will be the next consideration; the sunniest and most exposed that can be selected will be the best, planting them 6 inches apart, and the roots must not be disturbed by digging. The flowers are large, as may be seen, but are best viewed at a distance, the odour being anything but agreeable, and resembling somewhat that of the *Aristolochia*; the colours inside the flower are very pretty and curiously blended. This is one of the few flowers, we believe, that are self-fertilising, that process being accomplished before the flower opens by a curious movement of the anthers. It ripens seeds freely, and is readily increased by that means. It is a native of Northern India, flowering June and July.

The other species *C. lurida*, generally grown under the name of *C. o. tundifolia*, but differing widely from Royle's plant of that name, which

is figured in his "Illustrations." The true *C. rotundifolia* appears to be a much handsomer plant, the flowers, although small, being of an intense Gentian-blue colour. *C. lurida* is a climber, the only hardy plant of the order we know having that habit. When well trained it looks very well, the stems turning loosely and forming pretty festoons. The flowers are as large as the Canterbury Bell, grey white, and spotted or streaked with purple brown, the sepals much larger than in the other species, and serrated at the edges. The leaves are often very large, ovate, pointed, cordate at the base, and evenly serrated at the margins as well as being covered with fine white hairs. It requires much the same treatment as the above species, and is also a native of Northern India, flowering June, July, and August.—D.

ROYAL HORTICULTURAL SOCIETY.

AUGUST 10TH.

TUBEROUS Begonias, Gladioli, hardy flowers, and Roses formed the great attraction at this meeting, but there were numbers of other interesting exhibits which served to render the Show extremely varied and interesting. Not the least of these were the Hollyhocks, the appearance of which seemed like a revival of a once popular and beautiful flower, but which in recent years has been seldom seen in its best condition. It is rarely, too, that we see so many fine Roses in the middle of August as were staged at Kensington on Tuesday.

FRUIT COMMITTEE.—Present: Dr. R. Hogg in the chair, and Messrs. Harrison Weir, Jobu Woodbridge, W. Warren, C. Ross, G. T. Miles, J. Ellum, G. Norman, Philip Crowley, G. Silverlock, R. D. Blackmore, G. Bunyard, James Smith, and G. Goldsmith.

Messrs. Bunyard & Co., Maidstone, sent three varieties of Apples, Red Jnneating, Mr. Gladstone, and a new early American named Tetofsky, the latter being considered a good early dessert Apple, but not superior to others in cultivation. Mr. H. Cottle, The Gardens, Springfield, Ulverston, sent six Noblesse Peaches, very large fruits, from a tree twenty-four years old (cultural commendation). Half a dozen fruits of Royal George Peaches were also shown from a four-year-old tree. Mr. W. F. Barlow, Stamford Hill, sent three dishes of Tomatoes, fourteen fruits of which weighed $7\frac{1}{2}$ lbs. Mr. T. S. Ware, Tottenham, was awarded a vote of thanks for fruiting branches of *Eleagnus edulis*. Messrs. J. Carter & Co., High Holborn, exhibited fruits of Blenheim Orange Tomato, a cross between Greengage and Dedham Favourite; the specimens were of medium size and deep yellow. Messrs. Vilmorin & Cie, Paris, had a collection of Endives, comprising Paris Summer Curled, White Curled, Rouen, Imperial, Lacinated, Moss Curled, large Winter and Summer Curled, together with the white and round-leaved Batavian Endive. A cultural commendation was awarded for the collection. Samples of preserved fruits in tins were shown by the South Australian Commissioners, including Green Gages, Apricots, Pears, and Quince Jelly, the last named being of excellent flavour. A commendation was awarded for the preserved fruits, and a vote of thanks for fruits of the Navel Orange.

FLORAL COMMITTEE.—Present: G. F. Wilson, Esq., F.R.S., in the chair, and Messrs. John Laing, H. Cannell, Shirley Hibberd, H. Herbst, J. Douglas, H. Ballantine, C. Noble, John Dominy, H. M. Pollett, James O'Brien, A. J. Lendy, E. Hill, Harry Turner, William Holmes, James Walker, Amos Perry, and Dr. M. T. Masters.

Mr. W. Bull, Chelsea, sent plants of *Cattleya Schofieldiana* with a large flower; *Miltonia spectabilis* bicolor (certificated); the handsome *Impatiens Hawkeri* with its brilliant rosy scarlet flowers, relieved by a white eye; and the curious zingiberaceous plant, *Cienkowskia Kirki*, with large pink and white flowers blotched with yellow in the centre. Messrs. E. H. Krelage and Son, Haarlem, showed several pretty seedling *Gladiolus* from *purpureo auratus*, the colours varying from yellow to crimson. Mr. Alfred Chater, Cambridge, showed some very fine blooms of double Hollyhocks, large, full, and very clear in colours.

Messrs. H. Cannell & Sons, Swanley, contributed a beautiful collection of Verbena flowers, representing the best of their numerous varieties. From the same firm came plants of Fuchsia Rose of Castile Improved, the flowers larger than usual; *Lobelia Fascination* or Blue King, dark blue with a white eye; and a collection of single and double Tuberous Begonia blooms. Mr. J. Blundell, West Dulwich, S.E., showed plants of *Lobelia fulgens*, with brilliant scarlet flowers. The same exhibitor had four stands of Hollyhock blooms very fine, several being certificated. Messrs. J. Carter & Co., High Holborn, sent collections of double Balsam blooms of their Challenger strain, and single Petunias of their Emperor strain, both being extremely fine. Messrs. Webb & Brand, Saffron Walden, had a collection of three dozen good Hollyhock blooms, most varied colours and good substance. MM. Vilmorin, Andrieux & Co., Paris, had a collection of Liliputian Asters, the flowers very neat in size and clear in colours, the plants averaging 1 foot in length. From the same firm came seedling Petunias, an excellent strain of Zinnias, which was commended, and some fine Camellia flowered Balsams (silver medal). Messrs. H. Low & Co., Clapton, showed a plant of *Beaufortia splendens* (vote of thanks), with the flowers clustered on the upper part of the stems, the scarlet filaments having a pretty appearance. Mr. F. Barlow, Stamford Hill, sent plants of a Tree Carnation named F. Barlow, salmon fikel with rose. R. I. Measures, Esq., was awarded a vote of thanks for *Cypripedium Laurencianum* atro-purpureum, very large and deeply coloured, and *Trichopilia luteo-purpurea*, which was regarded as a probable natural hybrid between *T. coccinea* and *T. tortilis*. A plant of *Cattleya velutina*, with four flowers, was also shown. Mr. Hodges, Lachine, Chislehurst, showed a scarlet double tuberous Begonia named Incendie. From the Society's Garden at Chiswick came blooms of a bright scarlet Carnation named Chiswick Red, very effective; also a number of dwarf Fuchsias, Asters, and *Hydrangea paniculata*.

GROUPS AND PLANTS.—Roses were grandly represented by several exhibitors, Messrs. W. Paul & Son, Waltham Cross, Herts, having an especially handsome display; fourteen boxes, containing at least twenty-four blooms

each, and a dozen baskets with twenty or thirty blooms each of special varieties, constituted a magnificent, varied, and rich exhibit. The colours were bright and the flowers of good substance for the time of year. Very beautiful was the orange free-flowering William Allen Richardson, the pale yellow Tea Marie Van Houtte, the bright yellow Perle des Jardins, Marie Baumann, the white floriferous Boule de Neige, Niphotos, the New Tea The Bride, very sweet, white, faintly tinted with sulphur, very neat in the bud; the pink-tinted *Homère*; *Madame de Watteville*, white, tinged with rose; and the white *Etendard de Jeanne d'Arc* were the best of the Tea varieties, which were especially noteworthy. A pretty Polyantha variety named Perle d'Or, of a delicate salmon colour, tinted orange, was much admired; it is extremely free, and charming in the bud. Hybrid Perpetuals were also well shown, some of the best being Charles Lefebvre, *Senatenr Vaisse*, *Madame Eugène Verdier*, Paul Neyron, Alfred Colomb, and Grand Mogul, very dark. A silver-gilt medal was awarded for this collection.

R. I. Measures, Esq., Cambridge Lodge, Flodden Road, Camberwell, (gardener, Mr. H. Simpkins), was awarded a silver medal for a graceful group of Orchids and Ferns, which occupied the end of one of the central tables. The Orchids comprised two good plants of *Oncidium Jonesianum* on blocks, with two racemes, each of six to twelve flowers, the lip pure white and the sepals and petals spotted with rich brown; *Angraecum articulatum* Ellisi with a raceme of pure white long-spurred flowers; *Cypripedium ciliolare*, very fine; *Aerides virens superbum*; *Anguloa Clowesi*; *Odontoglossum vexillarium*; *Dendrochilum filiforme*, bearing some dozens of its slender spikes; *Oncidium Papilio*, *Maxillaria grandiflora* with eight large whole flowers; *Burlingtonia candida gigantea*, a large-flowered variety; *Cattleya Regnelli*, and a wonderful plant of *Aerides odoratum* bearing about twenty spikes of expanded flowers. It had been grown without fire heat during the summer, and the winter in a temperature not exceeding 60° by day and as low as 50° at night. The plant was in excellent condition, healthy, and vigorous. The group was margined with *Caladium argyrites*, *Pilea muscosa*, and *Adiantums*, which formed an excellent finish.

Messrs. Kelway & Son, Langport, Somerset, were awarded a silver-gilt Banksian medal for a superb collection of *Gladiolus*, comprising nearly 200 spikes of numerous varieties, several of which were certificated. Other noteworthy varieties were the following:—*Demerata*, salmon pink, crimson centre; *Princess Irene*, white with a few pink streaks; *Mrs. Langtry*, white, streaked crimson; *Queen Mary*, white, crimson centre; *Julia*, streaked rose on white; *Countess of Craven*, striped crimson rose; *Ball of Fire*, brilliant scarlet; and *Lord Halsbury*, scarlet, white stripes. A stand of very fine *Gaillardias* was also shown by the same firm. The New Plant and Bulb Company, Colchester, were awarded a bronze medal for a large collection of *Lilium auratum* and other flowers.

Messrs. Paul & Son, Cheshunt, had fourteen boxes of Rose blooms in excellent condition, including many blooms fully up to exhibition standard; also a large and varied collection of hardy flowers, *Phloxes*, *Ecnotheras*, *Pentstemons*, and border *Picotees*. A silver-gilt Banksian medal was awarded for these groups. The usual group of hardy flowers from Mr. T. S. Ware, Tottenham, occupied the greater portion of one side of the conservatory, and comprised a great number of flowers most tastefully arranged, collections of *Papaver nudicaule*, album, and *miniaturum*, *Gaillardias*, the white *Ecnothera speciosa*, the bright golden *Harpalum rigidum*, *Phloxes* in variety, *Lilies*, &c., with tall plants of *Lilium auratum* and spikes of *Sparaxis pulcherrima*, 4 feet high, being large numbers of its bright rose-purple, bell-like drooping flowers (vote of thanks). There were some boxes of Pink and Carnation blooms, Cactus, Pompon, and single Dahlias, *Lilium longiflorum*, *Antirrhinums*, and the white Clove Gloire de Nancy. A silver medal was awarded to Mr. Ware.

TUBEROUS BEGONIAS.—In the class for a group of Tuberous Begonias Messrs. John Laing & Co., Forest Hill, were awarded the first prize for an imposing bank of plants, which formed the principal feature of the Show. The plants varied in size, from small ones in pans lifted from the open ground, to specimens 3 or 4 feet high and 2 to 3 feet in diameter, all alike being laden with large, grandly formed, richly coloured flowers, the habit of the plants being compact and sturdy. The colours ranged from pure white through yellow, orange, scarlet, crimson, and rose, some of the flowers having a white ground colour, edged with rose or crimson. The dwarf plants, from the outside beds at Forest Hill, attracted much notice, owing to the brilliancy of their colours and the size of the flowers, both single and double varieties, being represented as in the general group. For nine Begonias in the amateur class, Sir E. Saunders, Fairlawn, Wimbledon Common (gardener, Mr. A. Newell) took first honours with compact handsome plants of excellent large-flowered varieties; W. N. Cheesman, Esq., The Hall, Dulwich (gardener Mr. W. Mouk), following with good plants, but not such fine varieties; Mr. H. Little, Twickenham, being third in a class of six exhibitors.

FUCHSIAS.—With six Fuchsias, A. S. Price, Esq., Parkside House, Ewell, Surrey (gardener, Mr. J. Buss), was first, showing beautifully flowered plants, about 3 feet high, and not formally trained; Gustave Doré, purple calyx and white corolla (double), was very attractive, as also were *Rifleman*, *Souvenir de Chiswick*, and *Mrs. Marshall*. The second prize was accorded to H. W. Segelcke, Esq., Elmdale Lodge, Herne Hill (gardener, Mr. J. Lambert), for tall and old plants, some 7 feet or more high, fairly well flowered, but not so graceful as the first-prize plants. Mr. Edgar Cook, 26, Queensberry Mews East, South Kensington, was third, a large plant trained on a trellis being the best. *Gloxinias* were exhibited by Mr. J. Lambert, Mr. C. J. Waite, and Mr. W. Monk, who gained the first, second, and third prizes in the order named, the first being well flowered.

Cut flowers in competition were not very numerous. The best twelve *Chrysanthemum*-flowered Asters came from Mr. J. Buss, who was first with clean bright handsome flowers. With twelve *Pæony*-flowered Asters Major Scott and J. Rain, Esq., Nightingale Lane, Balham (gardener, Mr. W. Clark), were awarded second and third prizes for medium blooms. For twelve quilled Asters Mrs. Gibson, Saffron Walden (gardener, Mr. Archer), Major Scott, Wray Park, Rigate (gardener, Mr. Morgan), and Mr. J. Buss, were the prizetakers in the order named, the first two showing very well.

MESSRS. WEBB'S PRIZES FOR VEGETABLES.—There were three good collections entered for these prizes. Mr. C. J. Waite, Glenhurst Gardens, Esher, was awarded the first prize with twenty-three varieties, all represented by very clean samples, Perfection Tomatoes were very fine, other

notable dishes being White Leviathan Onions, Canadian Wonder Beans, New Intermediate Carrots, Telephone and Stratagem Peas, Autumn Giant Cauliflowers, Girtford Giant Runner Beans, Pen y Bydd Vegetable Marrows, Snowdrop and Magnet Potatoes. Mr. F. A. Beckett, Cole Hatch Farm, Amersham, was second with twenty-six varieties, his Beans, Peas, Vegetable Marrows, and Onions being good; Mr. J. Buss being third with a much smaller collection, but of good quality.

CERTIFICATED PLANTS.

Chrysanthemum Mrs. Burrell (G. Miles, Victoria Nursery, Dyke Road, Brighton).—An early-flowering variety with flat spreading florets, white tinged with yellow in the centre; the blooms were about 4 inches in diameter, and very full.

Mitonia spectabilis bicolor (Wm. Bull).—A lovely variety, the flowers of good size, the lip especially large, pure white with a deep central blotch of violet purple.

Fuchsia triphylla (Royal Horticultural Society).—A free-flowering species with dark leaves arranged in threes, and graceful corymbs of bright scarlet tubular flowers, the calyx the most conspicuous portion.

Picotée Duchess (C. Turner).—Shown as a decorative variety, and remarkable for the great size of the bloom, white deeply edged with rose; very showy.

Picotée Almira (J. Douglas).—A bright clear yellow self, with a few rose streaks in the centre and at the margin of the petals.

Picotée Annie Douglas (J. Douglas).—A pretty yellow ground variety, edged with deep rose, running into the petals. The bloom is well formed and very clean. The variety has also been certificated at the Crystal Palace and by the National Carnation and Picotée Society.

Hollyhock Crimson Queen (Webb & Brand).—A deep symmetrical flower, and very dark crimson in colour.

Hollyhock Prince of Wales (J. Blundell).—Bloom large, beautifully formed, deep, and of a bright rosy salmon hue.

Hollyhock Shirley Hibberd (J. Blundell).—Very handsome deep blooms, with broad guard petals at base, dark rose.

Hollyhock Primrose Gem (Blundell).—A handsome well-built flower of great substance, the colour a soft delicate primrose.

Aster Rose Dark Scarlet (Ernst Benary, Erfurt).—A distinctly free variety of good substance, the colour a rich dark crimson, the bloom full and with the florets slightly incurved.

Gladiolus Clarence (Kelway & Son).—Spike very massive and long, flower large, streaked with dark purple and shaded brown or scarlet, crimson centre.

Gladiolus Lord Salisbury (Kelway & Son).—Very handsome flowers, large, bright scarlet, crimson centre.

Gladiolus Sir M. Hicks-Beach (Kelway & Son).—A charming variety, pink, streaked with bright rose and white centre, large flower and spike.

Gladiolus Sir Philip Cunliffe Owen (Kelway & Son).—An extremely distinct variety, salmon pink, with sulphur shading, charming and novel.

Zinnia elegans flore-pleno Dwarf Striped (Vilmorin & Co.).—A pretty strain, very curiously streaked and striped with crimson purple, scarlet and rose on yellow and buff.

Dianthus chinensis Black Prince (Vilmorin, Andrieux & Co.).—A remarkable variety with intensely dark red flowers nearly black, and with a velvety surface.

Begonia Imperial (R. Owen).—A grand tuberous variety, semi-double, nearly 5 inches in diameter, of a fine rosy crimson colour. Very handsome.

Dahlia Squire Gammie (T. S. Ware).—A single variety, with large purplish crimson blooms, much darker at the base of the florets.

Adiantum cuneatum Phillipsi (Phillips).—A variety distinguished by its elegant habit, the fronds being longer and the pinnules smaller than in the ordinary form; they are also very firm in texture and well adapted for cutting.

AT SHEFFIELD.

At the first glance this busy town may possibly be regarded by some readers as not the most favourable for a horticultural pilgrimage; yet, though smoke is the prevailing feature in the town itself, its immediate surroundings are bright, breezy, and beautiful, and there are numbers of good gardens, if not exactly within "easy reach"—for it seems to be uphill to everywhere—yet not far distant from the centre of the great hive of industry. There appears to be considerable earnestness on the part of the gardeners of the district in the discharge of their duties, and a disposition to give mutual assistance to each other is very apparent, for there are two well-supported gardeners' societies, at the meetings of which papers are read and discussions conducted on various matters of interest to the members. There are more shows of garden produce, too, in and near the town than in probably any other district of similar area in the kingdom. There are, in fact, too many, and consequently there is no great representative gathering of the horticultural products of the neighbourhood. It is not too much to say that there are hundreds of flower and vegetable shows (some of them peculiar enough) held yearly within a radius of half a dozen miles of the Town Hall; and if the details and workings of some of these were revealed they would be somewhat startling to the outside world. The shows alluded to are not supported by gardeners, but operatives and artisans, amongst whom a system is established of an extraordinary character, and which it is impossible to commend, nor will it be described on the present occasion. The first subject of these notes is a gathering of gardeners rather than of garden produce, though brief reference to a few examples of the latter may be appended.

THE YORKSHIRE ASSOCIATION OF HORTICULTURAL SOCIETIES.

It will be remembered by many readers of this Journal that a meeting was held under the auspices of the Paxton Society at Wakefield in the spring of last year, and rules adopted for the federation of horticultural

societies in Yorkshire. The objects of the Association are embodied officially as follows:—

"1, To consolidate existing horticultural and gardeners' mutual improvement societies within the county of York, and to assist in the formation of similar societies where they do not at present exist. 2, To promote the study and practical application of the science of horticulture, and encourage research into other branches of science which bear directly upon the practice of gardening. 3, The interchanging amongst the several societies in the Association of essays, books, periodicals, and other literature having reference to horticultural matters. 4, To facilitate and assist in united action in all matters relating to the welfare and advancement of gardeners and gardening."

It will be conceded that those objects are excellent. The annual meetings of the Association are moveable and are attended by delegates. The first meeting was held at Wakefield in September of last year; the second at Sheffield last week (the 5th inst.), under the auspices of the Hallamshire Gardeners' Mutual Improvement Society, the officers for the year being:—President.—Ven. Archdeacon Blakeney. Vice-Presidents.—Mr. W. K. Woodcock and Mr. J. Henshall. Trustees.—Mr. Henry Oxley and Mr. T. Garnett. Hon. Treasurer.—Mr. C. Cook. Hon. Secretary.—Mr. E. Austin, 55, Dorset Street, Sheffield. Committee (composed of two Delegates from each Society).—Messrs. Henshall and Hoey, Barnsley. Messrs. West and Gartry, Rotherham. Messrs. Smith and Franklin, Leeds. Messrs. Collier and Eadon, Sheffield (Floral). Messrs. Hudson and Holmes, Wakefield. Messrs. Ball and J. Marsden, Sheffield, (Gardener's Society).

The meeting was held at the Church Institute, St. James's Street. The Ven. Archdeacon Blakeney occupied the chair, and was supported by Mr. W. F. Lockwood, the Master Cutler elect.

Mr. E. Austin, Hon. Secretary of the Association, read the minutes of the last meeting, which were adopted. Letters of apology for absence were read from the Mayor (Alderman Pye-Smith), the Master Cutler (Mr. C. Belk), and the Rev. H. A. Favell, M.A.

The Chairman, who was received with applause, said one of the most healthful signs of the times were the combinations for mutual help which were taking place among all classes of the community. As it progressed, he felt that these societies would become stronger and stronger. We wanted more self-reliance, men and women depending upon their own exertions and the talents which God had given them; and when they combined, as they were doing that day, he believed there was good prospect of the nation improving in every way. Such a combination as that Association must be an unmixed good. The general public benefited by their exertions. The good they received themselves would tell on the rising generation, and the young men who came under their influence must benefit by their knowledge and experience. The members of that Association might not become Sir Joseph Paxtons, and rise as he did from his humble position to become one of the leading lights of the country, but they could feel that great good must result from their Association, and he for one welcomed them to Sheffield. He took a great interest in everything which affected the welfare of the working classes, because he believed the future of our great country was in their hands, and therefore he wished the Association God speed in its good work.

Mr. E. Austin read letters from the Leeds Professional Gardeners' Society, and the newly formed Leeds Paxton Society, requesting that the latter Society be admitted to the Association in the place of the former. It was stated that the Paxton Society already numbered seventy members, though only established three months. (Applause.)

On the motion of Mr. C. Cook, the name of the Society was placed on the Association.

Mr. Austin then read the second annual report and balance sheet. The Association, it was stated, had been established eighteen months, and might now be said to be on its feet with very hopeful prospects. Two successful Committee meetings had been held, and the Committee trusted that they would be able to make deeper researches into horticultural matters than heretofore. It was proposed to form a register for gardeners out of employ, which would be of service to them in obtaining re-employment, and also to establish a library, as soon as the Committee could see their way. The number of societies in the Association was six, with 780 members. The expenses had been heavier than last year, but so great in proportion to the number of members and the amount of work done. They had in hand on the 1st of March, £4 16s. 6d., and had received since £6 6s. in subscriptions from the societies, leaving a balance in hand over expenditure of £3 6s. 7d.

On the motion of Mr. West, seconded by Mr. Smith, of Leeds, the report and balance-sheet were adopted.

Several slight alterations were then made in the rules, and on the motion of Mr. Franklin, seconded by Mr. Eadon, it was decided that the next annual meeting be held at Barnsley.

The following officers were then appointed:—Vice-Presidents, Mr. West, Rotherham, and Mr. Ball, Sheffield; Trustees, Mr. H. Oxley and Mr. T. Garnett; Hon. Treasurer, Mr. J. Henshall; and Hon. Secretary, Mr. S. Ballinger.

Mr. Ball proposed a vote of thanks to the President and officers of the Society, which was seconded by Mr. W. F. Lockwood, and carried. The President, Secretary, and Treasurer having replied, the members adjourned for luncheon, at which the Ven. Archdeacon Blakeney presided, and amongst those present were the Rev. A. G. Tweedie, the Rev. R. Upcher, and Mr. Birks. The usual loyal toasts having been duly honoured, the Rev. A. G. Tweedie, in proposing success to the Yorkshire Association of Horticultural Societies, congratulated the members on the work which the Association had done. Bringing the various societies connected with

the work of horticulture together for consultation and advice had a most beneficial effect. He was not surprised that the clergy of the Church of England took a deep interest in the Association, for there were none of God's works so beautiful as the flowers which they tended and cared for. He was not a Ritualist, but he looked with favour upon the introduction into the Church of the flowers which God had given to beautify the earth. (Applause.) Mr. T. Woodcock, in responding, remarked that the Association was very young, but they had every confidence that it would grow stronger and stronger every year. They felt that it was destined to do a great work in encouraging brotherly love and knowledge among the members of the various Horticultural Societies. Mr. Birks briefly proposed a welcome to the visitors from the various towns, a toast which was responded to by Mr. W. Holmes (Wakefield).

In the evening a lecture was delivered by the Rev. A. R. Upcher, vicar of St. Mary's, in the large room of the institute. Archdeacon Blakeney presided, and was supported by Mr. E. Birks. The lecture was entitled "A Chat about Hardy Herbaceous Flowers," and was illustrated by an extensive and beautiful display of specimens. The lecture was much enjoyed, and at the close a cordial vote of thanks to the lecturer was passed. Mr. Upcher's "Chat" was a great success, and it was the unanimous wish of the members that the lecture be printed, and after its revision by the author he promised to send it to the *Journal of Horticulture* for that purpose, to be subsequently embodied in the Association's report.

The programme of the day included a visit to the celebrated nurseries of Messrs. Fisher, Son, & Sibray at Handsworth, but it was quite impossible to secure conveyances, as every vehicle in the town appeared to be engaged in conveying visitors to the Show of the Yorkshire Agricultural Society. The firm in question, though not personally represented at the luncheon, sent a number of plants for the decoration of the rooms, and it is certain would have accorded the delegates a pleasant reception at the Nursery.

MR. B. SIMONITE'S GARDEN.

A visit to Sheffield seems incomplete without a call on the cutler florist, who, by extraordinary devotion and steady unwavering perseverance, has acquired a reputation that would spoil some men; but nothing can alter "Ben," for that is his Sheffield name, as an incident will show. On inquiry of a railway porter to be directed to Mr. Simonite's at Rough Bank, the man appeared at a loss to answer. Eventually, however, he said, "thah dosent meän owd Ben durs ta?" "Yes." "Then, why didn't ta ssäy so? iverybody knoaws Ben. Go up that hill, tun to t' left, then ta t'reight, then thro some posts into a yard, then through a passage, up another hill, and inquire agean; but inquire for Ben." That was the direction on a former occasion; and we appeared to traverse much the same zigzag route last week. After climbing hill after hill, the roads having an angle of about 40°, we were directed still farther upwards to "Sky Edge"—an appropriate name enough, for the clouds appeared near. At last the name "Simonite Lane" was visible—a name given in honour of an old and respected family of which the popular florist is now the representative. That "iverybody" knew Ben thereabouts was quite clear, and a dozen persons could tell us he was "in t' garden;" "but stop," observed "an old inhabitant," let's see if its t' top or t' bottom." "Oh, it's all reight," he continued, "it's t' bottom garden;" and, curiously enough, to reach this "bottom garden" we had to go still higher up the hill, cross a wild quarried waste, and after another half mile of ups and downs we found "t' bottom garden," enclosed within high rough walls, and its owner busy with his flowers and friends. "But if this is the bottom garden, Ben, where is the top one?" was the question, and he pointed still a little higher, and there in the distance was a group of fifty gardens, each with its garden house with greenhouse in front, and apparently nearly a mile from any dwellings. There are about 120 greenhouses there, for some of the little enclosures contain two and others three each. These Sheffielders must really love gardens. We stop in the "bottom one" high on the hill and look down on the forest of chimneys far below.

Let no one imagine neat and trim gravel walks, smooth lawns, and ornamental edgings. Florists' gardens are not in that style at all. Only the flowers are cared for, the surroundings being of no consequence whatever. This particular enclosure is about 50 by 40 feet. There are three or four home-made greenhouses and beds of Dahlias, Pinks, and Carnations, with odds and ends here and there, and a few rows of Chrysanthemums in pots. Carnations are over in many places, but here they were only just coming in. And what care is needed to preserve the flowers! The moment a bud shows colour it must be protected, or the sulphur and soot washed down would ruin the flowers. The buds are supported through slits in horizontal boards, two placed together for a time, so that one inverted flower pot, miniature handlight, bellglass, tin lid, or old hat crown will cover them. These packed together 18 inches or so above the beds are not in themselves beautiful; but raise them, and where the flowers are expanded there is something to see—grounds pure as snow, flakes rich, edges clearly defined and bright. "Look here, I will show you a James Douglas, and I know you have never seen a better?" And there indeed was a purple flake Carnation, of which we had never seen the equal at a National Show—broad smooth petals richly coloured, no muddling, but the bars sharp and clear. That flower alone was worth the "climb," because it was as near perfection as could be imagined. It would not "keep" for Manchester, or the cognoscenti would bend over it in boundless admiration. A few Picotees were expanding, the flowers being remarkable for their purity and clearly defined bright edge lines; but it was too early by about ten days for seeing the majority. The plants in one bed were protected by short frame lights

supported above them, and under these lights the flowers had again to be sheltered from the drifting soot, or they would be spoiled. A number of plants are grown in pots, and were arranged under glass. Very beautiful amongst these was the fine rose flake Carnation Sybil, the colour being strikingly rich and the petals broad; but, as in the case outside, the flowering season was only just commencing. The plants were small both outside and in, the long winter and late spring having rendered it a work of extreme difficulty to preserve them at all. They only started growing in June, and it is not easy to see how stock can be raised from them. On expressing surprise that these stunted and hardly brought up plants could produce such beautiful flowers, we were told such plants invariably give the best blooms. A point worthy of notice is this: the Carnations and Picotees planted out in beds were better, and, as a rule, promising to develop finer blooms than the plants in pots; and if that is so in this garden on the terribly bleak "heights" above Sheffield, where the winters are severe and long, the springs late, and more smoke than sun always, the culture of these plants ought to be easy in thousands of gardens in nearly all parts of the country, for certainly there is not one in a hundred where anything approaching the natural obstacles are present that are successfully encountered by this persevering florist, who has raised some of the finest varieties of the day. He works untiringly, and has riches in store in the form of some of his later creations. His Auriculas are mostly under glass; sturdy plants with leaves "like leather" in 4-inch pots, and numbers of seedlings in various stages of growth, some of which have proved their worth as among the finest yet raised, and others the result of parentage that can nowhere else be found, are with confidence expected to take high rank in the floral world.

Only a deep love for flowers, with incessant working, watching and patient waiting, could enable anyone to accomplish anything like what has been achieved in this strangely situated, and it might almost be described "outlandish," Sheffield garden; and no man than its owner is more trusted and respected at home and abroad. He covets neither praise nor patronage, but plods on in honest endeavour as a very sterling florist and a straightforward man.

MR. D. GILMOUR'S GARDEN.

From the garden of an old florist to that of this new rosarian is a rather wide step, for they are situated on opposite sides of the town. They are alike in one respect, and only one—altitude; only Highbury, Mr. Gilmour's residence, is probably considerably higher than Rough Bank, the air being also as clear and pure as that over the not far distant Derbyshire hills. The western suburbs of Sheffield are boldly and strikingly beautiful, and there is no suspicion of the contiguity of the busy murky town. So far, then, as regards the purity of the atmosphere, Roses ought to grow at Highbury, and Mr. Gilmour has told in his admirable paper on page 59, the issue of the 22nd ult., that as regards soil he intends them to be satisfied before he is much older.

His established Roses are in beds on his lawn, one variety only in each bed, and these masses of healthy plants with stout stems and deep green foliage are decidedly more effective than if the varieties were in mixture with the necessary inequalities of height and habit. The Rose season is late on the wind-swept eminence, and on the 6th inst. the first blooms were only just expanding. Very beautiful were the masses of Merveille de Lyon, which has been planted by the hundred, and no long time will elapse before blooms can be counted by the thousand. La France and Baronne de Rothschild also appear quite at home, these light varieties, as mentioned in the paper referred to, thriving better in the light soil of that part of the garden than the dark ones do. This is very apparent, but their owner is of opinion the soil is too light for producing the requisite stoutness of petal, and more crumbled clay will be added for giving texture to the blooms. Though the Rose garden is to some extent sheltered with shrubs, the wind sweeps with terrific force from the moors, and to this with lusty growth may be attributed mainly the absence of mildew, which is only seen on the tender growths of a few weakly plants on the side most protected from westerly gales. Green fly is not grown at Highbury.

Though the lawn contains nothing but beds of Roses they have overflowed into the kitchen garden and appear to be rapidly taking up the ground there; nor is this all, for a six-acre field has been purchased, drained, and in great part planted with stocks which are being budded now at the rate of upwards of a thousand a day with the newest and best varieties in commerce. Her Majesty will be in great force next year, for Mr. Gilmour has not been content with purchasing a dozen plants but a hundred, and how many buds these have given we cannot say, but Rose-growers can form a pretty good idea, and other new sorts of promise, including Clara Cochet, are being worked on a similarly liberal scale.

It is quite certain the Highbury Roses will be heard of again. Mr. Gilmour is in earnest with his work and possesses the means for carrying it on well. He has furthermore secured the services of Mr. Corp, who knows what he is about in the culture of his favourite flowers. Yet the Roses grown in this high and bleak locality must be too late for the orthodox shows, and something great is in contemplation in the way of a Sheffield show on new lines. An experiment has been made, and the result of it is seen in the Rose cot in the children's hospital, established and maintained at a cost of £40 a year. This is not a bad beginning, but, viewed with the provision now being made, is only a very small beginning of Mr. Gilmour's career as a coming rosarian. He appears determined to make Sheffield a great Rose centre, and he is evidently not the man to fail. He grows Roses under glass too, Teas planted out on benches, working them on different stocks, including William Allen Richardson, and signs are not wanting that something good will result

from these experiments. Mr. Gilmour can, and perhaps will, give instructions on Rose-growing that would be welcome to beginners, and is, moreover, in a position to describe something of the wonderful growth of Roses in Tasmania that would be fresh to the majority of Britishers at home, his family having estates there as well as at Sandygate, the parish in which Highbury is situated, some five miles from Sheffield, and a few hundreds of feet above the level of the sea.

OAKBROOK.

A call was made on Mr. W. K. Woodcock, Mrs. Mark Firth's able gardener, and an earnest worker in everything that has a tendency to improve the horticulture of the district and benefit his fellow men. Only a little can be said about the garden in his charge. It is thoroughly well managed, enjoyable from its excellent keeping, and abundantly productive. As a grower of Mushrooms he has, perhaps, no superiors and few equals, his outdoor beds now yielding splendidly, and he appears to have no difficulty in maintaining an all-the-year-round supply of the coveted esculent. He is also devoting some attention to Chrysanthemums, and has a stock of plants that even a Molyneux would not be disposed to find fault with—sturdy, short-jointed, with leathery leaves, and the growth ripening as it is made. The crown buds are now being set, and with a favourable autumn should produce good blooms. The collection includes some American varieties of repute that have not yet flowered in England, and seedlings from good parentage that will flower for the first time in November. These American novelties are being looked forward to with interest by Chrysanthemum growers generally, who are always longing for something new and good outside the Japanese section.

Sharpe's Victor Potato is worthy of mention as grown at Oakbrook. It was sent out as a dwarf early frame variety, but is found far more valuable as an early successor of the Ashleaf out of doors on account of its great productiveness and high quality. It is oval-shaped, white, and of the medium size that is approved at table. Mr. Woodcock recommends it as a variety of sterling merit, and grows it as a staple crop, following sharply on the Ashleaf and yielding much more abundantly.

It is not often such fine rows of Peas are seen as in this garden, and the method of culture is as simple as it is sensible. In the winter, when digging is being done, trenches are thrown out 8 or 9 feet apart, and manured as if for Celery. The manure is "mellowed" by the time of sowing, forming a rooting medium which Peas evidently enjoy, for the rows are extraordinarily productive, and pods large and well filled. Carrots and other low-growing crops are grown between the rows, so that no ground is wasted, while twice the weight of Peas is gathered that could be obtained from rows 3 or 4 feet asunder.

THORNBURY.

This is the residence of the new Baronet, Sir F. T. Mappin, whose garden is in charge of one whose name used to be somewhat familiar to the readers of the Journal, Mr. Quintin Read. Like a good and loyal servant he expressed his pride at the social elevation of his master, and without a doubt takes equal pride in the high keeping of his garden. So clean and neat was it, so orderly, and so well in hand, that the keenest critic would have a little difficulty in finding fault; and the plants, Vines, and vegetable crops were similarly commendable. Mr. Read is proving himself a worthy successor to Mr. Woodcock, who was formerly gardener here, and the place is now, what it was then, fit for a prince to see. We hurry away to catch the Midland express, and in three hours and thirty-five minutes are steaming into St. Pancras.

THE HORTICULTURAL CLUB.

It has been my pleasant duty to chronicle each year the pleasant doings of "Our Club" in the annual outing we indulge in at the end of July, and I do so because it has been our good fortune to fix on places which have a wide horticultural renown; and there is something therefore in these to interest not merely ourselves, who were the happy enjoyers of the scenes, but others who in the various branches of our loved pursuit like to know what is being done around them.

We were very fortunate in our arrangements this year, as we had arranged to go to Heckfield and Stratfieldsaye. One of our members, Mr. A. W. Sutton, very kindly undertook to make all the arrangements necessary for our comfort and enjoyment. Nor could we have been in better hands. Everything was thought of, and the only regret we had in our day's pleasure that he was unable, owing to business arrangements, to accompany us as he intended, a regret which he himself shared. We all assembled at the Great Western Station at Paddington, our party numbering about twenty, our evergreen Chairman, Mr. John Lee, leading us; and leaving there at 10 A.M. we were, in an hour's time, at Reading, where brakes awaited us, and we started off for Heckfield. The drive was not so picturesque as some of those through which we have gone in former excursions, but the day was perfect—warm, but not oppressive, and with a nice breeze, while the recent rains had laid the dust, so that we had but little to complain of. We reached Heckfield, the well-known residence of that fine old English gentleman, Lord Eversley, who, in his 93rd year, can still enjoy life, and can take his day's shooting in his well-stocked preserves. We had all heard of, and some of us knew, Mr. Wildsmith, his able and intelligent gardener, and had been told that we should see some good gardening; but I do not think that any of us were prepared for the perfect place we had the pleasure of seeing. In some places you find some things well done, while others are neglected, but here everything was well done. Fruit indoors and out, plants, bedding out, shrubs, trees, lawn—all so good as to cause us to wonder how it could be done, but I suppose Mr. Wildsmith infuses some of his own energy into those under him, for so energetic a man one does not often meet with, or energy turned to such good purpose.

We were first invited to inspect the magnificent carpet bedding on the

terrace in front of the house. This has more than once been described, and therefore it is sufficient to say that it is arranged with exquisite taste, and in such a place with such surroundings no one can find fault with the style of gardening as adopted here. It is appropriate and so well carried out that everyone felt it was a gem of gardening in a very beautiful setting. Raised beds took off from the monotonous level one often sees in such gardens. In such a place as this, where every kind of gardening finds its place, one was glad to see this style so thoroughly well executed. From this terrace there is a charming view, a beautifully kept lawn of thirty acres stretches all round the house in undulating curves, and in the middle foreground was a piece of artificial water, in which the white Water Lilies were abundant; while far away in the distance beyond the richly wooded country the horizon was bounded by the grand trees of Windsor Great Park. In another direction the eye rested on one of the oldest houses in England, said to have been built for the Black Prince, and all around were glimpses of thoroughly English sylvan scenery. When we had satisfied ourselves with these lovely sights it was discovered that there were other appetites unsatisfied, and so in a tent in one part of the beautiful lawn we adjourned to luncheon. This having ended we set out on our pilgrimage through the grounds, admiring some fine specimens of both evergreen and deciduous trees, amongst them the most beautiful specimen of *Abies Douglasi* I have ever seen. Larger ones of course we have found in our wanderings, but this was most beautifully feathered, and in perfect proportion. We then strolled on down by the lake, and from there through the shrubberies into the gardens, meeting on our way with shrubs and trees of all kinds. In the gardens there were objects of interest for everybody. Houses full of luscious Grapes, Figs, Peaches, &c.; Pine pits (a rare thing now in English gardens), where beautiful plauts, clean and healthy, were set with fruits, which promised well; and then the Melon pits, how thick they hung! how beautiful in appearance, and fine in foliage! In the kitchen garden everything in grand condition, nothing seemed to be neglected, and it is no exaggeration to say there was not a weed to be found anywhere, or any sign of untidiness.

We then passed on to the Chrysanthemums, which Mr. Wildsmith does so well. Here were arranged about 700 plants of the best Japanese and choice varieties, ranging from 5 to 7 feet high, from which grand blooms could be seen, to be gathered by-and-by, and of which probably we shall hear more. Time flew rapidly, and we were obliged to tear ourselves away from this charming place; but "needs must," and so bidding adieu to Mr. Wildsmith we departed for Stratfieldsaye, feeling that although we had seen some larger and grander places, we had not seen one so perfect in all its parts as Heckfield, containing beautiful scenery, with the most perfect management, and feeling convinced that whatever other places we might visit we should never meet a better gardener or more genial companion than the one we left behind us here. The drive from here to Stratfieldsaye is about two miles, and when we arrived there we were met by Mr. Bell the able gardener, who showed us through the long ranges of fruit and plant houses with which this garden abounds. From them we went into the park, admiring on our way some fine trees with which the place abounds. The country about, however, is flat, and lacks the natural advantages of Heckfield; while the house is like what we suppose would have suited the old Duke, whose taste was not a strong point, and whose habits were so simple. Had we had more time we should have lingered over the grounds which surround the house, but we could not, and had to make our way back to Reading. Here we arrived five minutes after the time we had arranged, and sat down at the Great Western Hotel to an excellent dinner, and managed to get back in good time to Paddington, where we dispersed to our several homes, feeling that all had gone merrily, that we had enjoyed a very pleasant and profitable outing, and came back wiser, but I am sure not sadder, men (aye, and women too, for we had ladies with us) than when we left Paddington in the morning.—D., Deal.

CUTTING THE FIRST GROWTHS OF ASPARAGUS.

ALLOW me to refresh my versatile opponent's memory on this subject. The question on page 12 is not the question on page 64. "The question is," writes, "A Thinker," "whether after this first cutting, as soon as they are a few inches high, say early in May, other growths do not spring from the crowns and get even stronger the same season than the originals would if they were left to grow unchecked? That is the question." Now turn to page 109, twelve lines from the bottom, right hand column, we are asked to see no difference—the question remains as at the beginning, viz., "That is just the point of the question I first put on this subject, on page 12, namely, 'Is Asparagus strengthened by cutting the small growths or 'sprue' till, say, the beginning of June or not?' Comparison is invited of the question as it appears on pages 12 and 109 with that on page 64. I have only to retaliate—give my critic a lesson—"a great honour." If I "forget what has been penned at the top before finishing at the bottom," "A Thinker" forgets in the middle what he stated at the beginning, and states the question to be the same, forgetting it was put very differently.

Now Mr. Thinker, I must ask if you ever raised an Oak, a Cabbage, or anything of that sort from seed. To strengthen the Oak its head was cut off below the cotyledons, and the Cabbage below the seed leaves! They will "spring the sooner and grow the stronger!" The fact is they are killed. Cut off the tiny head of the seedling Asparagus when only a few inches high, in late April or early May, it will spring again. Keep on cutting as succeeding heads appear until June. Is that a fair following of the question on pages 12 and 109? I do not think for a moment it was the practice of your correspondent, for he states "spray," and that he certainly would not see until June, therefore your correspondent admits the difference between seedling and established Asparagus. It is not treated as "sprue." It is allowed to make a "spray," get good root hold, and when it has those remove it, other growths will come "sooner and grow stronger." This I cannot understand. The succeeding growths are different in the seedling to those of, say, a year old Asparagus. If we leave the first growth of the seedling, and it is accompanied by other sprays stronger than itself, does the first growth

form buds at its base that spring the following year? or are the growth of the current year succeeding the first growth those that in the case of the established grass would in the case of the first growth or "sprue" remaining have kept dormant until the following year? The first growth of the seedling will make a second growth if the soil be good and the weather favourable the same season, independent of cutting the first "spray." Will a "sprue" of established plants make a second growth from the first growth the same season? Succeeding growths of a "sprue" are from buds existing at the base of the previous year's growth; succeeding growths from a seedling are of the current year's growth; therefore we get perhaps half a dozen or more original growths from the established, all forming buds on their own account for next year's supply of grass; and we get a first growth on seedling that loses its originality and is succeeded by other growths in the year of its formation. The question is, Does the second growth of the seedling "spring the sooner and grow the stronger" by removing the first after it has attained its full vigour, or say early in June or July? The old practice was to leave it, and I stated it "strengthened." I have experience not confined to "half rows on a bed," but extending to poles of double figures. If cutting "weakened" seedling Asparagus, and that is the popular belief, accented by its not being practised until the third or fourth year, letting grass grow must "strengthen;" therefore your correspondent might have spared himself a smart piece of rhetoric, and told us what experience he had had in cutting small growths or "sprue" when only a few inches high up to say the middle of June. I gave him mine as I had it of an octogenarian with half a century experience of the same practice—viz., of the old system, "the practice of old vegetable growers, also of most present cultivators of Asparagus for market." That was not enough, therefore I gave him my present practice in the treatment of old beds—viz., leaving the small grass or "sprue," only cutting the heads that were large enough, acting on the principle that obtained with seedling, even stating that I had every reason to be satisfied with the result. So I have. I have had charge of five different lots of Asparagus in that number of localities, and not one of them was too thick of grass, but they could be made to yield greater produce by allowing the small grass to grow and so fill the vacant places. Getting grass where there was none, and making patchy beds even, surely were considerations of no little importance, especially as by cutting early weak growth likely to get weakened by seeding, I procured double the grass by letting the small grow and gain strength as I did from cutting all grass up to a certain time through having few plants in a patchy plantation. This plan is better than either "A Thinker's" or his recruit, Mr. S. Castle's, for the simple reason, as their experience is only extended to "half rows" and individual examples, there is little to mark a difference through an inadequacy of material for comparison. Besides, experiments are only proved by results: theirs are in the main to make a pleasing feature in prospective; mine are present—realised, and all agree in "a bird in the hand being worth two in the bush."

In early April, 1883, I sowed Asparagus seed in rows 1 foot apart and the seed about 2 inches apart—kind, Early Purple Argenteuil. Most of the first sprays were cut from June to August. In the April of 1884 I had the seedlings planted in rows 18 inches apart, and the plants 1 foot apart in the rows. A few of the weaker sprays were cut from each—none before July. In early April, 1885, the whole were lifted and planted in rows 3 feet apart and 18 inches asunder in the rows. The majority of the first growths—they were not "sprue," at least they were in many instances as thick in the head as any in the permanent beds, which were considered the best in the neighbourhood, but I saw enough of them on their first heads appearing that I determined not to patch them as I had done others previously; in fact, I had made a departure from the old system some years previously—the practice now followed on a smaller scale, this being the third time. But to resume. The first growths were much injured in moving in 1885. Those that escaped broke down and were removed in June.

In 1886 heads many thicker than the thumb were cut, half a dozen such from each plant. Seventeen rows, 54 yards long each give 1836 plants, giving 110 hundred or bundles of Asparagus sent to Covent Garden Market for sale. How long will it last? How can I tell? It is better far to "count your chickens after they are hatched" than make a parade of experiments on "half rows" and telling people what you are going to do in the future. One thing is certain, I shall not grow any more Asparagus on the old system if I can help it. I may even improve on the present, for I am far from thinking that the most experienced amongst us know "everything."—G. ABBEY.

GREEN FLY ON ROSES.

"THINKER," on page 108 in your last issue, asks a question in connection with his valued remarks on my paper on Roses—a question which convinces me that he really is what he professes to be—a Thinker.

His question is in reference to our immunity from the green fly, and how I account for it. The reply, I think, need not take up much space. The quantity of manure we are compelled to use on our poor, dry, hungry soil is so great that a strong healthy growth is bound to result. Keep a man or a plant in a healthy state you need never fear disease. The law of survival of the fittest is strictly carried out by insects, which always make for diseased plants. Green fly, in my opinion, is the effect, not the cause. The hard pruning, I think, also has something to do with it, and that in two ways—(1), It produces strong, sturdy, and very healthy growth; and (2), I suppose the eggs of the insects are deposited on the branches of

the plants in autumn, and probably near the tops, or, at any rate, on autumn-grown wood; this wood hard pruning removes entirely, and of course the eggs go at the same time.

Whatever the cause of our freedom from the pest, if I have not given the true one I can only say that I am perfectly satisfied with the result of the treatment, for I can honestly say that if I were asked to find a green fly on my Roses to-day, I do not know where I could "lay my hand" upon one.—D. GILMOUR, JUN.

HORTICULTURAL SHOWS.

LEICESTER.

This took place on Tuesday, August 3rd, in the Abbey Park, Leicester. Many years ago a series of excellent exhibitions were held on the old race-course, but for some years Leicester has been without a good representative exhibition. The want of one was felt, and Mr. John Biron, the Curator of the Abbey Park, suggested that a new Society should be formed, and under the management of Mr. Alderman Chambers and a few other members of the Corporation this was done, and a schedule amounting to £125 was issued. Three tents were devoted to the Exhibition, and proved to be much too small for the numerous exhibits, and especially for the immense attendance of visitors, at least 40,000 persons having paid for admission. The centre of one of the tents was devoted to six groups in competition in one class. Mr. Murray, gardener to H. Snow, Esq., was placed first, Mr. G. Carnall second, and Mr. W. Stephenson third. There were three exhibits of eight stove and greenhouse plants, Mr. W. S. Bolton being first with even well-grown plants. There were some very good Ferns and ornamental plants.

Roses were well represented, considering the lateness of the season. In the class for thirty-six singles, Messrs. Harkness & Son were first, Messrs. Mack & Sons second, and Messrs. Perkins & Sons, Coventry, third. For twenty-four singles, Messrs. Harkness & Son first, Messrs. Perkins & Sons second, and Messrs. Mack & Sons third. For twelve Teas or Noisettes, first, Messrs. Burrell & Sons, Cambridge; second, Messrs. Perkins & Sons; third, Mr. Wm. Jackson, Kidderminster. Cut stove and greenhouse blooms were well shown, so also were hardy herbaceous blooms. Twelve varieties of hardy annuals were admirably staged by Messrs. Pearson & Sons, Chilwell Nurseries, and distanced the other exhibitors. Cut Zonal Pelargoniums in single trusses (by far the best way of showing them) were very well done, Messrs. Pearson & Sons taking first honours with flowers of fine quality, in pip especially. Good bouquets and epergnes were well shown, two differing from all the others, sent by Mr. Hans Niemand of Birmingham being of more modern fashion and very beautiful.

Fruit was well represented, but after the judging, the tents were so crowded up to the time of removal that taking notes was an impossibility, so that only a few general notes of the Show can be given. In the collections for eight varieties, Mr. Goodacre, Elvaston Gardens, was first with fine Peaches and Nectarines, capital Muscat Grapes—viz., fine Black Circassian Cherries, and other kinds. Second Mr. J. Edmonds, gardener to the Duke of St. Albans, and he was also first for a capital Queen Pine. The black Grapes were generally good, Mr. Goodacre taking first honours with two very fine bunches of Madresfield Court, a little deficient in colour, also first prize for two bunches of admirably finished Muscats. Peaches were remarkably good, several fine dishes not getting prizes, Mr. Edmonds was first for Peaches, also for superior Nectarines. Mr. John Gough, Hanfield Grove Gardens, W. Uxbridge, sent, not for competition, twelve fine fruits of his Hanfield Grove Melon, and samples of the Hanfield Golden Gem Melon, to which certificates were awarded. Mr. Gough also sent a stand of blooms of the new double Pelargonium, Kate Timmings, a very fine variety.

Mr. B. S. Williams, nurseryman, Holloway, sent a very extensive group of plants, in which new and rare largely predominated, and included a fine plant of *Acineta Barkeri*, with four pendulous racemes; *Galeandra Baueri*, *Cattleya Gaskelliana*, *Lælia xanthina*, the rarely seen *Epidendrum nemorale*, *Graptophyllum Nortoni*, a distinct new variety of *G. pictum*, known as the Caricature Plant; the new white and new double blue varieties of *Agapanthus umbellatus*; the new hardy white Passion-flower, "Constance Elliott," blooming freely in small pots; the new variegated *Myosotis palustris semperflorens foliis variegatis*, with bright silvery variegation; *Dracæna Lindenii*, a welcome acquisition to our variegated ornamental plants; *Sarracenia flambeau*, richly coloured; the charming *Epidendrum ciliolare*, the very pretty and rarely seen *Grevillia Pressii*, *Anthurium Rothschildianum*, so entirely distinct; and *Coleus Lady H. Amory*, distinctly and prettily marked.

Orchids were invited in the schedule, but only three were staged by Henry Snow, Esq., Storeygate, Leicester—viz., *Cattleya gigas imperialis*, *Zygopetalum Gantesi*, and *Cattleya Eldorado splendens*. Mr. John House, Peterborough, contributed collections of good border Carnations and boxes of William Allan Richardson Roses. Messrs. Barron & Son, Borrowash Nurseries, contributed a fine lot of specimen Conifers, &c., and a fine display of honey and working bees was in one of the tents, but unfortunately we could not ascertain who was the exhibitor. The receipts were heavy, severely taxing the energies of those at the gate.

Of the Abbey Park itself, too, must I speak in the highest terms of praise. It consists of 80 acres, and was originally flat marshy ground, often quite flooded, and Nature did little or nothing for it beyond finding a supply of water. Messrs. Barron & Son of Borrowash designed and laid out and planted the Park, and since then Mr. Biron has elaborated the design and finished off much of it. Cleanliness and order are apparent everywhere. The bedding out is grand, the great stretch of bedding out about the Pavilion being just now in great beauty, and worth a journey to see it. Four large circular beds are objects of great beauty, each being margined with a broad line of a small green dwarf Saxifrage, with an inner circle of Golden Pyrethrum, then comes a massive centre of silver-leaved Geraniums and Countess of Kintore Violas. These beds stand out prominently for their beauty and are greatly admired. Violas are extensively grown in the Park, especially Mrs. Gray, Countess of Hopetown, finest of all the whites, and the primrose yellow Ardwell Gem. The large succulent bed is very fine and what is known as the Princess of Wales bed, so called from its being,

close to the Oak tree planted by Her Royal Highness, is a bit of true artistic work in carpet bedding, worthy of Heckfield and William Wildsmith, and that is saying a great deal. Leicester is truly a fortunate place in its grand park, so greatly appreciated by the inhabitants, and the Corporation are now laying out another park of forty acres at Spinny Hill, on the other side of the town, where there is a grand sweep of undulating ground, plenty of grassy slopes and level ground, fully grown trees, and truly a park. Flower gardening will no doubt be an accompaniment here, for already shrubberies and plantations are springing up; but the natural beauties of the place, its position, and extensive stretch of country viewed from the rising ground, is sufficient to stamp it as a place of very popular resort when completed, and a fine contrast to the floral beauties and artistic arrangements of the Abbey Park. The work of designing and carrying out the planting and details falls upon Mr. John Biron, and he is doing his work right well.

The sum of £640 was taken at the gates in addition to tickets sold. There were 752 entries from exhibitors, and the entry fees amounted to over £11. The arrangement was superintended by Mr. A. Angus of the Carlton Hotel, a well-known horticulturist in Leicester.

FROME.—AUGUST 2ND.

THIS, the third annual Exhibition and Fête, was a great improvement on its predecessors, and there is every prospect of its eventually becoming one of the most popular fixtures in the neighbourhood. No large prizes are offered, and consequently the competition is confined principally to the locality, but this in time may be remedied and a still more attractive Show be arranged. The meeting under notice was remarkably well attended, and everything passed off most creditably to all concerned, and notably the Honorary Secretary, Mr. W. H. Frankham, and a few indefatigable workers.

The best prizes were offered for miscellaneous groups of plants, and of these there were three capital lots staged. Mr. Pratt, gardener to the Marquis of Bath, Longleat, was placed first, his arrangement including several well-grown Crotons and other choice plants. The second prize was well won by Mr. E. J. Wilcox, gardener to Mrs. Sinkins, Frome, who had a fine plant of *Musa Ensete* for a centre, many grandly flowered *Lilium auratum*, Ferns, &c., while the third prize went to Mr. B. Hopkins, gardener to John Bailly, Esq., Fairlawn, Frome, who also had a capital lot of *Dracenas*, *Crotons*, *Caladiums*, *Ferns*, *Begonias*, and various other plants. Each group presented a somewhat crowded appearance, but the positions assigned them were altogether against artistic arrangements. Mr. J. Tucker, gardener to Major Clarke, Trowbridge, was the only exhibitor of six flowering plants, and fully deserved the first prize awarded. *Anthurium Schertzerianum*, *Dipladenias*, *Bougainvillea glabra*, and similar popular kinds were all represented, and the same exhibitor was first for a single flowering plant, having a capital plant of *Bougainvillea glabra*; the second prize going to Mr. S. Andrews, gardener to A. J. Hayman, Esq., for *Plumbago capensis* in good condition. The best six fine-foliage plants were staged by Mr. H. Prosser, gardener to W. H. Laverton, Esq., Westbury, Mr. B. Hopkins being a close second. Palms in variety, *Cissus discolor*, *Pandanuses*, *Asparagus plumosus*, were all in good condition. Three creditable lots of twelve Ferns and Mosses were shown, and of these Mr. Tucker had the best. Mr. E. Brown, gardener to C. Bailly, Esq., Frome, was second, and Mr. H. Wright, Frome third. With six Ferns Mr. Hopkins was easily first, and was followed by Mr. G. Taylor, gardener to A. R. Bailly, Esq., Frome, the third prize going to Mr. J. Payton, Frome.

Fuchsias were rather backward, but Mr. E. Brown fully deserved the first prize as awarded, the second going to Mr. H. Wright, and the third to E. R. Trotman, Esq., Frome. Zonal Pelargoniums made a good display, the prizewinners in the order named being Messrs. G. Tucker, E. Brown, and B. Hopkins. Gloxinias were well shown by several competitors, Mr. Trotman taking first prize, and was closely followed by Messrs. G. Tucker and S. Andrews. Coleus were more remarkable for their good colour than size. Mr. W. Wright was first, Mr. Wilcox second, and Mr. Hopkins third. Some of the classes for cut flowers were well filled, others were very thin; the comparatively heavy entrance fees affecting the competition in these as well as other classes. Mr. W. Iggulden, gardener to the Earl of Cork, Frome, was easily first for twelve varieties of choice cut flowers, Mr. Tucker being second and Mr. H. Prosser third; and a capital box of annuals staged by Mr. Wilcox gained the first prize in the class provided for them, the second prize going to Mr. W. Thomas, gardener to — Horner, Esq., Wells. A fine lot of Roses were staged, and it is to be hoped that more liberal prizes will be offered for the next year. The first prize for twelve single blooms, distinct, fell to S. P. Budd, Esq., Bath, Messrs. Keynes & Williams, Salisbury, being a close second, and Messrs. G. Cooling & Son third, all having surprisingly good examples of well-known sorts. Mr. G. Garraway, Bath, had the best six blooms, the second prize going to Mr. W. P. Jones, gardener to J. S. Pope, Esq., Bath, and the third to Mr. W. J. Stokes, Trowbridge. Mr. W. P. Jones was first for twenty-four Asters, and Mrs. John Jones, Bath, second. The first-prize vase of cut flowers, exhibited by Miss F. Bailly, Oriol Cottage, Frome, was far ahead of the rest, and for choiceness of flowers and excellent taste in arrangement would have been in the prize list at any show. Mr. E. Brown was second, and Miss K. Tainbury third. Mr. Brown was first for a floral wreath, and Miss K. E. Parsons second. The first prize for a hand bouquet was easily won by Mr. G. Garraway.

Fruit was not extensively shown, the fixture being rather too early for many hardy fruits, but the exhibits included some fine examples that would have been hard to beat anywhere. The best collection of six dishes was staged by Mr. W. Iggulden, who had Black Hamburg and Foster's Seedling Grapes, Grosse Mignonne Peaches, Victoria Nectarines, Early Moorpark Apricots, and Blenheim Orange Melon, all in good condition. Mr. B. Hopkins was a creditable second. Mr. Pratt had grand bunches of Black Hamburg Grapes, and was first, the second prize going to Mr. Iggulden, who was closely followed by Mr. A. R. Bailly, both having good examples of the same popular Grape. In the corresponding class for any white variety Mr. Pratt was again easily first with very fine bunches of Muscat of Alexandria, Mr. Iggulden following with Foster's Seedling, the third prize going to Mr. Prosser for the same variety. The first prize for a Melon went to Mr. Prosser, who had Blenheim Orange in fine condition, the second prize going to Mr. Pratt for Longleat Perfection not quite at its best. A beautiful dish

of Grosse Mignonne, staged by Mr. Iggulden, won first prize for Peaches, Mr. Andrews being a good second with Violette Hative.

Twelve competed for the special prizes offered by Messrs. Sinton and Sons, Reading, for a collection of vegetables. The largest and most complete collection was staged by Mr. Iggulden, who received the first prize; his best dishes were Erfurt Mammoth Cauliflowers, Perfection Tomatoes, The Dean and Schoolmaster Potatoes, Laxton's Charmer Peas, Negro Longpod Kidney Bean, Pen y Bydd Marrow, and New Intermediate Carrots. Mr. Garraway was a good second; Mr. S. Andrews third; Mr. F. Mead, Frome-field, fourth; and Mr. Thos. Evry, Bathaston, highly commended. Mr. J. Payton was first with Cucumbers, and Mr. A. Cray second, both having good examples, and Messrs. W. Thomas and C. Cockey were commended. Mr. Iggulden had the best Tomatoes, Carter's Perfection in fine condition, the second prize going to Mr. Andrews, who had a fine dish of Reading Perfection. Messrs. Garraway and F. Mead won the prizes for salading, and Mr. Iggulden was first in the classes for round and also kidney Potatoes, his collections including several of Carter's novelties, notably Cosmopolitan and the Village Blacksmith. Mr. H. Hale and Mr. Hopkins also exhibited successfully in these classes.

The local nurserymen, including Messrs. Bourne & Son, Beckington, and Mr. Cray, Frome-field, arranged miscellaneous groups of plants, not for competition, and the last named had also a capital lot of vegetables and fruit.

CUT ANNUALS AND HERBACEOUS FLOWERS AT SHOWS.

WHERE show committees offer prizes for cut flowers of the above the result is generally a most interesting and attractive display. One of the best shows of the kind I have seen this season was at Bristol, where good prizes were offered for a number of bunches of annuals and herbaceous flowers, and over a dozen collections were staged. They were shown in large prominent bunches like Roses, filled one side of a tent, and were showy and pleasing in the highest degree. Many of the annuals were certainly the prettiest, but the herbaceous flowers were the most substantial, and the whole had a splendid effect; indeed the bunches of stove and greenhouse flowers, although choice and good, were not so beautiful as those border flowers, and societies generally would find the introduction of a class or two of this description increase the reputation of their shows. All who own a flower bed or border is interested in good annuals, and although accurate descriptions of them are often given in seed catalogues a display of blooms is more instructive. For instance, few can really imagine from the description in the catalogues what a lovely flower *Statice Suworowii* is, but as seen exhibited amongst the annuals at Bristol it was the admiration of everybody. Messrs. James Carter & Co. have done a great deal to popularise annuals by the excellent exhibitions of them they have frequently shown recently in pots, and the cut flower classes are undoubtedly a step in the right direction. At the South Wales shows flowers of this kind have not been shown prominently in the manner here indicated, but I know of several committees who contemplate introducing classes for them, and in the meantime Mrs. Loadstone, the lady florist of Llanelly, Carmarthenshire, has been exhibiting large quantities of those flowers at Newport, Neath, and other shows, and her flowers are exceedingly good in colour and variety, and delight all who see them.—J. MUIR, Margam Park.



KITCHEN GARDEN.

CELERY.—The earliest rows are now ready for use. They have been earthed several times, and are now well blanched. Those with good early crops may be inclined to keep some of the rows on for late use, but heads which are ready now will not remain good until November or late autumn, and to prevent loss they should all be used soon. As many of our readers will now be exhibiting vegetables, they will find that good Celery forms one of the most weighty dishes they can use in a collection, and if well blanched, sound, and free from worm marks, it should always be exhibited in good collections. We have been getting several trenches ready for show. To keep it free from worm marks some of it was earthed with sifted ashes, but in the hot weather in July the ashes dried up so much, and became so hot, that they caused the leaves to flag, and the best heads are those earthed with the surrounding soil in the usual way. In exhibiting Celery only a few of the short outer leaves should be taken off, and as it is always cut by the judges when shown in the Celery classes, care should be taken that none but sound heads are exhibited. Some growers are in the habit of deferring earthing-up until the plants are almost fully grown, then one heavy earthing is all that is given, but when left unearthed until late, many of the leaves are apt to fall over and break, which spoils the heads. It is also late before the blanching is accomplished when this system of earthing is followed, and we prefer the old-fashioned and common way of treating it by earthing as the plants gain size. The latest crops should now be earthed a little, and if more soil is put to them in September and October, excellent results are sure to be produced. It is generally about this time the Celery fly begins to be troublesome. Its presence is first noticed by spots appearing on the leaves. They are brown, blistered like blotches, and the ragot is increased in them.

It is this which makes their destruction rather difficult, as no dusting of soot will destroy them. The only way is to press each blotch firmly between the finger, or pick each of the affected parts off. By doing this when the plants are first showing signs of being attacked they may be checked so severely that they will fail to be further injurious.

EARLY POTATOES.—The whole of the early varieties are now matured, and they are remarkably free from disease, but if wet weather should come they may still suffer from it; and to prevent this we advise that the whole of the crops which are matured be dug and harvested. Those intended for seed need not be kept in the dark, but others which are to be kept for use must not be allowed to become green. None of them should be dug when the soil is wet.

AUTUMN SPINACH.—Summer Spinach runs so fast to flower that it is not a profitable crop to grow during July, August, and September, and as all kinds of choice vegetables are plentiful then its absence is no inconvenience, but by October and onwards many of the summer vegetables are becoming scarce, and a good supply of Spinach is then very acceptable. Apart from this, late autumn Spinach is not very liable to run to flower, and the plants which give a supply in October will also go on bearing for many weeks afterwards. With this object in view a good sowing of the prickly variety should now be put in. It may be sown after Potatoes or any other crop recently cleared off the ground. The leaves should be fairly luxuriant, and to secure them of the right stamp the soil must be moderately rich; but a too rich soil is a mistake, as it forces the plants too much, and makes them too soft and tender to stand the severe weather of winter. The rows should be from 15 inches to 18 inches apart, and as soon as the young plants can be handled thin them out to 6 inches or more asunder. We have frequently began to gather from a plantation in October, kept it pretty close down throughout the autumn, retained the plants until spring, when they began to grow afresh, and they were very profitable in March and April.

WINTER GREENS.—These are now growing freely, and it will be found a good plan to earth up the whole of them. Some growers profess not to know of the advantages attending earthing up these crops, but we have no doubts about it. Our garden is rather exposed to high winds from the sea. Sometimes we have been too busy to earth up all our quarters of late Cauliflower and Broccoli at this time, and when the plants were fully grown in November or further on, the wind has upset many of them at the time they were about forming heads. Those earthen, however, have a good hank of soil against the stem, and this invariably holds them firm and allows the heads to swell off without a check. All earthing up should be done before the leaves meet between the rows, as after that it cannot be done without breaking some of the leaves.

CHICORY.—Whenever winter salads are in demand this should be grown in quantity. It is the hardiest of all salad plants. At times when our Lettuce and Endive have been destroyed by frost we have kept the salad bowl going by large batches of this, and it can be grown and forced at half the expense of Lettuce or Endive. When the seed is sown too early the plants always run to seed in the autumn, but when a batch of it was sown a month ago the young plants should now be thinned out to 6 inches apart, and where sowing has been omitted there is yet time to get up a supply of plants before winter. Sow in rows 15 inches apart in deeply worked ground.

GLOBE ARTICHOKE.—In many cases the heads will all have been cut off and the plants may have suffered from dry weather where planted in light soil, but if the stems are cut off down to the ground level, and the roots are mulched and well watered, they will soon produce fresh leaves and produce new fruit stems which will bear useful heads late in autumn.

FRUIT FORCING.

PEACHES AND NECTARINES.—*Earliest Forced Trees.*—The lights have been wholly removed now to expose the trees to the cleansing influence of rain and the invigorating effects of night dews, which will assist in plumping the buds, and the soil of the borders will get thoroughly moistened. The object is to prevent the trees starting into growth prematurely, and that can only be effected either by keeping them dry (which is fatal to the buds), or keeping them cool, along with some outlets for the sap in moderate lateral growths and the preservation of the foliage in health. If the weather be dry water must be given at the roots, and syringing practised to keep the foliage clean, if need occasion employing an insecticide.

Succession Houses.—As the trees become freed of the fruit cut out all the bearing wood of this season, unless forming part of the extensions, and the shoots for next year's fruiting where too thick should be thinned to admit light and air to assist the ripening of the wood, afterwards cleansing the foliage thoroughly with water from the garden engine, which will be required daily in fine weather. The roof lights may be removed as soon as the wood is ripe and the buds plumped, and up to this the ventilators should remain open constantly, unless there is any doubt about the ripeness of the wood, when the house may be kept up to 80° or 85° by day from sun heat, and the house thrown open at night, which, however, must not be done when the house is at that temperature, but after the sun heat is declining or declined to 70° or 75°. The soil of the borders must be kept well watered.

Late Houses.—See that the borders inside and outside have sufficient water, especially in the case of trees swelling their fruit, assisting with liquid manure, and mulching the surface of the borders with short manure. Continue the syringing until the fruit is well advanced for ripening, it being required on fine days in the morning and afternoon; but on dull days do not keep the foliage and fruit dripping with moisture. Provide a little ventilation constantly, and increase it early in the day.

If it is desired to accelerate the ripening the temperature through the day may be kept at 80° to 85°, closing in the afternoon early enough to rise to 90° or 95°, and before nightfall admit a little air at the top of the roof, so as to allow of any excess of moisture escaping and induce a cooling of the atmosphere and rest. In other circumstances admit air freely day and night, except in the case of high winds, and an unusually low temperature at night. Let the fruit have full exposure to the sun, and keep the growths tied in as they advance in growth. Stop or remove gross growths, and let all have full exposure to light and air. Laterals should be kept well in hand, but they may be allowed moderate extension in the case of trees carrying heavy crops so as to maintain activity at the roots. Trees carrying light crops and having much lateral growth and strong wood should be marked for lifting or cutting the roots as soon as the wood is sufficiently firm, which in ordinary cases is about a month before the leaves fall.

Scale.—This is sometimes very troublesome when the fruit is advanced for ripening, in which case the application of an insecticide is out of the question on account of the damaging the fruit, but much may be done with a brush and sponge, soft soap 3 ozs. to the gallon of water being used to the worst infested leaves and wood. After the fruit is gathered the trees may be syringed thoroughly with petroleum—a wineglassful to 4 gallons of water in which 8 ozs. of soft soap and an ounce of soda has been dissolved, mixing it thoroughly with the water and keeping mixed by alternate squirts into the watering pot and trees. If the petroleum is not kept mixed whilst being applied it is best not to attempt its application, as some parts of the trees will receive nothing but petroleum and other parts none of any efficacy in destroying insects, and so do more harm than good. It is efficacious against thrips, red spider, and indeed every insect.

FIGS.—*Earliest forced Trees.*—The second crop will be ripening, and the trees should not have more water at the roots than is necessary to keep the foliage fresh, and syringing must be discontinued or the fruit will crack, besides being deteriorated in flavour. A free circulation of dry warm air is essential to ripening the fruit and wood. When the fruit is all gathered the main point is to secure the proper maturity of the growths, and if due attention has been given to stopping and thinning the shoots little will now be required except attention to ventilation and watering. The syringe should be laid aside except as a means of subduing insects. Future crops depend entirely upon the ripening of the wood, therefore maintain a circulation of warm air until the leaves die naturally.

Exposing Fig Trees.—Excepting early forced trees in pots they should not at any time be exposed to the weather by removing the lights, but should have abundant ventilation. Trees in pots, from growing less vigorously than planted out trees, are the better for exposure after the fruit is gathered and the wood ripened, the trees being given a sheltered sunny situation. Open-air influence will do much to invigorate them and harden the wood.

Second Crop on Planted-out Trees.—Trees that ripened a first crop in June will in a short time be ripening the second crop, and should be liberally supplied with liquid manure if carrying a heavy crop and the trees are weakly; but if vigorous and the crop is not heavy, water will be all that is wanted except mulching, which should be kept moist, as the trees in such a case will probably require lifting, and surface roots are of consequence in that case, as well as being conducive to fruitfulness.

Late House.—The fruit will be advanced for ripening, therefore spare no pains to have the foliage free from red spider by forcible syringings, and to insure fine fruit see that the borders have due supplies of water through good surface mulchings, and feed if necessary with liquid manure. Avoid wetting the fruit after it commences ripening, and keep the growths rather thin alike for the benefit of the fruit and for the thorough solidification of the wood for future crops. Stop side growths at the fifth joint.

Young Trees in Pots.—Young trees from this spring cuttings, and which are intended for fruiting in the second or third year of their growth, must still be attended to in pinching off the top of the strong shoots to form the foundation of a symmetrical head in their first year's training. The plants should have a clear stem, and no suckers be allowed on any account, but the stems for dwarf trees need only be a few inches high. For standards they must be trained with a single stem until the height required is attained and then be stopped.



THE WINTERING PROBLEM.

THE wintering problem is one which has, owing to the most favourable climatic conditions, attracted far less interest and discussion in this country than in America. The sharp cold of the United States in many districts necessitates an altogether different management from the one which may with a certainty of success be followed in this more genial climate; but it may be useful to consider at some length the best means of ensuring the safety of our stocks in winter, and

having them in a high state of prosperity in the early months of spring, thus laying even now the foundation of success in 1887, and enabling us to feel comfortable and free from all anxiety when the piercing blasts of icy wind sweep over the land far and wide, and the frost and snow hold all the earth in a stern embrace. There are many essentials to a complete success in wintering bees to which special attention must be given, but nearly all these points will come under one of the three following heads:—

- 1, A good sound weather-proof hive well packed and covered.
- 2, Bees strong in number headed by a good queen.
- 3, A bounteous supply of proper food.

The value of a good, well-made hive is very great, for if any part is ill-fitting, and damp is allowed to penetrate to the inside of the hive, all the labour and all the care of the bee-keeper will not avail to withstand this secret lurking foe, which is the more dangerous because doing its deadly work in the winter season when hives are less frequently examined. The mischief is done before the least suspicion that there is anything wrong is aroused in the mind of the bee-keeper, who sees with wondering surprise on the return of spring that what he expected to be a good strong colony is weak, and so enfeebled as to be, if not quite ruined, at any rate comparatively valueless. More stocks are, in my opinion, destroyed by damp than by any other cause; the mischief is wrought so silently that it is seldom discovered, except by the careful man, who makes a periodical examination of all his stocks.

The top of the hive must be made absolutely and entirely waterproof; every conceivable crevice through which the least damp might percolate must be stopped, and only under the eaves, where rain cannot beat in, must spaces be left. Now, I put great stress upon having spaces under, and I believe that it is one of the greatest helps to wintering to have a continual circulation of air on the top of the hive. The spaces need not be large, but they must be large enough to give a reasonable ventilation without creating a draught or admitting rain and snow. It is not, however, so much the occasional drops of rain and snow, that are certain at intervals to find their way beneath the eaves, that do the mischief against which we have so sternly to contend, but it is the continued action of a crevice through which damp is always pouring in, until the combs become rotten, the bees are destroyed, and the stock ruined.

The floorboard must have a slope sufficient to throw off all the wet, and the entrance may be narrowed or widened as occasion may require. About 3 inches in the winter is not at all too wide an entrance; but when snow is on the ground it is better entirely to prevent a single bee from leaving the hive by using a slide, having a piece of perforated zinc attached over the hole, so that the ventilation will still go freely on and the bees remain undisturbed. Some say that bees thus confined become excited, and the loss of the stock is the result. My experience is just the contrary, for if the slides are quietly exchanged not one bee will be lost, but some hundreds be saved. To make matters quite safe it is my custom, in addition to using the slide, to also shade the entrance, and the result is that when the sun is shining most brightly there is no undue excitement; while if no slide is used, however carefully the hive is shaded, occasional bees, more restless than their fellows, find their way out and never return. Now, when every life is valuable it is a pity for one to be lost, therefore shade and close the entrance with perforated zinc. Immediately after the snow has gone every entrance must be opened, and the bees will speedily clear away the dead, which ought not to be numerous. Perforated floorboards I have not used, and although they are without doubt useful, still I am able to manage so easily and satisfactorily without them that I have no disposition at present to alter the course, so far followed with success, by adding another appliance to the apiary. Hives should not stand more than 8 inches above the ground, and all around and

beneath them they should be quite clear from anything that will in the slightest degree obstruct a free circulation of air. The covering on the top of the hive must be porous, and for wooden hives there is nothing superior to the ordinary summer quilts, and on the top of these a section rack, having a piece of canvas tacked to the bottom and filled with cork or sawdust. This is a capital covering, but above all things it is necessary to avoid anything not porous at any time of the year. The "American cloth," now freely made use of in so many apiaries, is simply an abomination, and the result of its use cannot be satisfactory. The quilts and rack of cork or sawdust form a warm cosy pad, through which the moisture generated below can easily pass off and leave the hive and comb dry and in the best possible condition for the preservation of bee-life, in addition to providing an almost insensible upward ventilation. The position must be open, and by choice the hives should face south, with a slight inclination to the east, and be sheltered from the north wind. It is hardly necessary to warn the present generation against the practice of removing stocks in winter to the opposite side of the hedge or wall to the one they occupied in winter; the object being to prevent the sun's rays from falling on the hive and enticing out the bees to their certain destruction. The position of the hives must not be altered unless absolutely necessary, when the usual measures must be taken.

Straw hives must be packed warmly, and in all respects treated the same as the wooden hive, and they will prove far better as a winter home than many modern hives. The second essential to successful wintering is "bees strong in number headed by a fertile queen." There has been so vast an amount of discussion on these points, and on the side issues springing out of them, that it will be necessary somewhat to deviate from the strict course of inquiry into the best means of wintering, but it will not be necessary at present to dive into details, but only to state conclusions, leaving the bases for such conclusions to be propounded in some future issue.

The first point is whether stocks must be contracted to a portion of the hive only during the winter months. To this I say most emphatically, No! but rather let the colony be so strengthened as to be enabled to overspread the combs, which must otherwise be left uncovered by the bees. True, as the winter goes on and the population decreases without any proportionate increase, the outside combs may be left uncovered; but it has yet to be proved that in a properly constructed hive this is any disadvantage. There must be no contraction of the hive, but rather an increase of population, to render such contraction unnecessary and impossible.

Secondly, it is totally unnecessary to cut winter passages in the combs unless the hives are so shallow as to be for all practical purposes worthless.

Thirdly, there must be no change in the orthodox and natural distance between comb and comb.

We may now return to the main point, and it may be observed in passing that it will probably be conceded by nine out of every ten practical bee-keepers that a strong colony is most easily wintered, most prosperous in spring, and most profitable throughout the year.

The ways and means of increasing the strength of a colony are several, but the preferable plan is, so far as my experience goes, to add sufficient bees in autumn to bring up the population of every stock to its required strength. Bees can still be obtained in quantity from cottagers, or they can be purchased at from 1s. to 1s. 3d. a pound from other localities where driven bees cannot be had, for the trouble of driving them. To a fairly strong stock in a large hive some 5 lbs. of bees may be added, and the population will even then be by no means too great. Stocks, it may be said by some, that have been worked on the "tiering" system without being allowed to swarm are, after the removal of the last super, very crowded; but if those who think that these stocks require no addition will examine them again towards the end of September, they will be astonished to see how

frightful has been the mortality during the months of August and September, when the aged bees, after bearing the brunt of the honey flow, are rapidly disappearing, and there are no young hatching out to fill their places.

Stimulative feeding in autumn is not a success. It is cheaper—and the same object is attained—to add driven bees. For two reasons this is so, for by late stimulation the queen is exhausted and does not begin to lay so early and so freely in the following year, and the trouble to the bee-keeper is great, while the strain upon the worker bees is so heavy that a greatly increased mortality results at the time when feeding is actually going on, and insufficient brood is hatched to fill up the vacancies, and the vitality of the surviving bees is materially diminished, much to the detriment of the future prospects of the owner. Driven bees then had better be added to every stock not sufficiently strong to do without them, and how few these stocks are is almost incredible. Small populations may survive, but without a ceaseless care they will not gather surplus, and must, therefore, fail to be profitable.

The queen must be a good mother, and it is quite impossible to enter fully into the means of obtaining, securing, and introducing her into the hive at present, and these comments may, therefore, be concluded by adverting to the food supply, which must be "bounteous." Not merely sufficient to keep life in the frame, but to give the idea of prosperity; to give confidence to the bees, assurance to the queen, and no anxiety to the owner. Either syrup or honey may be used, and between the virtues of the one and the other there is little to choose. This I do say, that "sugar-fed" stocks are the healthiest and most prosperous of any it has been my lot to possess; and the result is always entirely satisfactory, although no particular attention be paid to the selection of queens.

Those who will see that in the fast-approaching autumn their stocks are prepared after the manner continually advocated in these columns, may feel confident of possessing strong colonies in spring, and may see without apprehension keen frost and snow and wind, while those who prefer to go their own way will feel some anxiety and alarm if there should be a long-continued winter and cold, blighting spring, preventing the bees from working outside, while from lack of stores they are not breeding in the hive. Bees are thrifty insects, and never thrive on "short commons." Their masters too are occasionally economical, sometimes without being thrifty.—FELIX.

THE CALEDONIAN APIARIAN SOCIETY'S SHOW AT DUMFRIES.

THE above Society's Show, under the auspices of the Highland and Agricultural Society, was held at Dumfries on the 27th, 28th, 29th, and 30th of July, under favourable but cold weather. The two first and the last days were fair; the third day was wet and disagreeable. The temperature of the first morning ranged in places of my experience from 32° to 35°. Few weeks have passed throughout the season but the same temperature has prevailed more or less. The Show was a success, owing to the energy of the Honorary Secretary, Major R. J. Bennett. That gentleman devotes much time and spares no expense for the purpose of helping on the working classes to better their condition by the aid of bees. The exhibits were numerous, the entries being 150. Some of them reflected great credit on the owners for their enterprise in being able to bring forward such grand displays in such an untoward season. The success of the Show was in a great measure due to the Messrs. McNally. Mr. E. McNally, Rutherglen, deserves the first notice for his grand classified display of dried and fresh flowers and plants, amounting perhaps to 1000 specimens, including seeds of many of the same, together with the dates of their time of flowering and per-centage of honey yield. The exhibit consisted of two large volumes filled with them and others mounted on cardboard. These, together with the fresh flowers, nearly covered one side and end of the exhibition tent, which contrasted well with the opposite side, and its beautiful display of honey and honeycomb, tiered to a great height on graduated steps, setting it off to great advantage. The ornamental designs had a fine effect, and showed much taste on the part of the exhibitors, Messrs. McNally of Glenluce and others, the former being the winners of first prize.

The centre of the tent was filled with two large collections of hives and other appliances, owned by Mr. McNally of Glenluce and Mr. Steele of Dundee. The appliances consisted of both home and foreign manufactures of all that was necessary and unnecessary for the apiary. Some things were in the collections badly adapted for use in bee-husbandry, and some were superfluous. If bee-keeping could not be carried on before investing in all that was shown there would indeed be but few cottager bee-keeper. Mr. McNally showed some prettily made Stewarton hives, and

Mr. Steele an elaborate frame hive, by far too much so, and too weighty to become a popular hive.

The Stewarton supers for the first time during the existence of this Show were in the background, simply, however, on account of the low temperature prevalent throughout the season. Dumfries people came to the front, the higher temperature of that locality having conducted to better filled glasses and more delicate comb, so the bellglasses took first honours, notwithstanding the fact that the Society discourages them. The honey throughout Dumfriesshire and Kirkcudbrightshire is of excellent quality, and from my experience cannot be surpassed, and is worth purchasing when extracted honey of some quarters is a glut in the market. There was much competition in the class for run honey. The three winning samples were indeed fine; it was only a matter of taste, and tastes differ, that a decision could be arrived at. The awards in this class could have been reversed three times without anyone being able to find fault. The sections were well filled and pretty, the competition being very keen.

In the class where the competition was confined to farmers' wives and their daughters, many others competed, which I think unfair, as that class is specially set aside for the farmers who are shy to compete against practical hands, and it is not asking too much for the Committee and exhibitors to abide by the printed rules of the Society. There were four exhibits of cakes made from honey, the first prize one being much superior to the others, but neither was so fine as those made and competed for by professional bakers at previous shows. The liqueurs were a failure, the prize being withheld.

There were some fine examples of comb foundation, for which prizes might well be dispensed with. The observatory hives as usual did not show to advantage as they should do, by having the bees working in them at least one month before the Show, which would keep the bees quiet, and they would have the brood, honey, and pollen in their proper places, instead of having the combs so arranged as to cause the bees forming themselves into detachments in attempting to cover the scattered brood and keep it from perishing, which notwithstanding it often does in hives managed as they were at this Show.

Hives were numerous, and in some cases excellent, but only one exhibitor conformed to the rules of the Society. In class 4, for the best frame hive for general use, price not to exceed 20s., the awards according to the order of merit were, Messrs. Warnock & Walker, Blantyre, first; Mr. R. Steele, Dundee, second; Mr. McNally, Glenluce, third. But as neither of the two last-named had conformed to the rules they were disqualified, and in consequence of their dissatisfaction an umpire was called in, who cancelled all the Society's prizes in that class and awarded an extra silver medal to the first prize one for its general excellence. For the most serviceable hive for general use and transmission to the heather, first and special, Messrs. Warnock & Walker; second and third, Mr. McNally. Mr. Steele in this class again had not conformed to the rules. For best and most complete frame hive at 7s. 6d.: silver medal, Mr. McNally. This exhibit was really a cheap hive. Mr. Steele was second, but there was no prize.

For inventions or improvements in hives and appliances, the first prize was awarded to Warnock & Walker; and the Messrs. McNally equal second. The first-named showed a simple portable contrivance for fastening supers on hives while in transit; two different forms of feeders, a dividing board, fitted so as to be easily closed or opened without the risk of killing or irritating the bees; also the improved ventilating floor and stand, to be used when removing bees to the heather. Mr. McNally's exhibits consisted of an apparatus for hatching poultry on the top of the hive, a honey ripener, a patent tin for holding honey, an uncapping machine, a honey presser, &c. As these were not improvements in hives, but appliances not all the *bona-fide* inventions of the exhibitors, the final decision was left over for the Committee to consider. The first prize for the best presser for heather honey was awarded to Mr. McNally. This was a machine, however, from our knowledge of the difficulty of managing heather honey, will never give satisfaction. A very tidy and efficient instrument or machine from Mr. Hamilton of Braidwood was not forward at the time of judging, or would have been awarded first prize. The time has come when it would be judicious of the managers of shows to cease awarding prizes for things of that sort, unless when in competition at the work they are designed for. It is the only way the public will be satisfied with, and justice given to all concerned. Awarding prizes to hives of the same sort year after year without showing some decided improvement is a mistake. It is far better to give more prizes for the produce of the bees and comestibles made therefrom, and confine the tent to a place for exhibition only and not a sale shop, as persons were detected carrying goods away. Stewards should be appointed to look after the interests of exhibitors during the show, reserving one day, or part thereof, for the sale of goods. If that was done we should hear less clamour from the public as to the inconvenience caused by the crowding in the sale of goods. The society would be the benefactors if that plan was adopted, and the visitors would have some pleasure in inspecting the exhibits, which they paid for to see, and better harmony would prevail throughout. The Judges for the occasion were the Rev. R. Sanders, Tundergarth, Lockerbie; Mr. James Anderson, Dalry, Ayrshire, and William Thomson, Blantyre, assisted by the Hon. Secretary, Major R. J. Bennett. The following are the awards with the exception of those stated above, and the driving of bees, the particulars of which we have not heard yet.

BEES.—Specimen of British Bees—1, R. McNally, Glenluce. 2, James Johnstone, Stirling. Specimen of Cyprian, Ligurian, or any other Foreign Bees—R. McNally.

HIVES.—Hive for observation purposes, all combs visible on both sides, stocked with Bees and their Queen, suitable either for summer or winter use—1st and Highland and Agricultural Society's silver medal, R. McNally. Inventions or Improvements in Hives and Appliances—W. and R. McNally (equal). Straw Hives and Supers of any description—1, R. McNally. 2, W. McNally. 3, J. D. McNally.

COMB FOUNDATION.—Ten sheets of Comb Foundation made of pure bees-wax; worker cells for stock hive; and ten sheets thin for supers—1, W. Young, Perth. 2, R. McNally. Two cakes of Wax, weighing not less than 4 lbs.—1, W. Templeton, Dumfries. 2, J. Smith, Dumfries. 3, R. Steel, Dundee.

HONEY.—Display of Honey and Honeycomb.—1 and Highland and

Agricultural Society's silver medal.—W. McNally. 2, R. McNally. 3 S. Roberts, Dumfries. Two Supers above 20 lbs.—1, J. Townsley, Dumfries. 2, R. Anderson, Stevenston. 3, J. Anderson, Dalry. Super above 12 lbs. and under 20.—1, J. Smith, Dumfries. 2, Annie Anderson, Dalry. 3, Jas. Anderson, Dalry. Super of Honey not being sectional Supers. The Super to be of wood, straw, or of wood in combination with glass or straw.—1, W. McNally. 2, W. Templeton. 3, J. Briggs, Lauricknowe, Maxwelltown. Twelve 6-lb. sections of Comb Honey.—R. McNally. Twenty-four 1-lb. sections of Comb Honey.—1, S. Roebuck, Dumfries. 2, J. Townsley. 3, Rev. F. Taylor, Cumherland. Twelve 2-lb. sections of Comb Honey.—1 (no name). 2, W. H. McDonald, Kirkcowan. 3, Rev. F. Taylor. Twelve 1-lb. sections of Comb Honey.—1, S. Roebuck, Dumfries. 2, Rev. F. Taylor. 3, W. H. McDonald. Run or extracted Honey, in twelve 1-lb. glass jars.—1, S. Roebuck. 2, J. Templeton. 3, R. McNally. Heather Honey, in Comb or otherwise.—1 and 2, E. McNally, Rutherglen. 3, R. McNally. Best design in Pure Honeycomb worked by Bees.—1, W. McNally. 2, R. McNally.

SPECIAL PRIZES FOR LADIES.—Super above 10 lbs. and under 20 lbs.—1, Mrs. S. Roebuck. 2, Miss Fraser. 3, Mrs. R. McNally. Glass Super of Honeycomb.—1, Miss Anderson, Stevenston. 2, Miss Templeton. Twelve 2-lb. sections of Honeycomb.—Mrs. S. Roebuck. Run or extracted Honey in glass jars, not less than 12 lbs.—1, Mrs. Townsley, Dumfries. 2, Mrs. E. McNally. 3, Mrs. Roebuck.

COMESTIBLES.—Cake made with Honey.—1, R. McNally. 2, J. D. McNally, Glasgow. 3, E. McNally. Collection of different articles made from Honey as Food and Liqueurs.—R. McNally.

MISCELLANEOUS.—Collection of Hives, Bee Furniture, Bee Gear, for general use.—1, W. McNally. 2, R. Steel. Honey Extractor.—1 and 3, W. Young, Perth. 2, W. McNally. Extractor, or Press, for Heather Honey.—2, R. McNally (one entry). Best and most interesting collection of Natural Objects, Models, or Diagrams connected with Apiculture, and illustrating the Natural History and Economy of the Honey Bee.—1 and 2, E. McNally. Best and largest display of Honey-producing Plants, stating particulars calculated to be of interest to bee-keepers.—1, E. McNally. 2, H. Dobbie, Norwich. 3, Miss Nicholson, Glenluce.

SPECIAL PRIZES.—Model Apiary—Lanarkshire Hive (given by Mr. Wm. McNally)—E. McNally. Bar-frame Hive (by Mr. Ebenezer McNally, Rutherglen)—R. McNally. Straw Hive stocked with Bees—1, 2, and 3, James Johnstone, Stirling.

It is perhaps a fitting time at the present to say something about the honey presser for heather honey. There are as yet few who thoroughly understand how to manage heather honey, and have given their experience in writing how it should be done and what the machine for that purpose should be like. As yet the only machine fit for the purpose in the market is the Lanarkshire Presser. But to bring out the best possible machine at the cheapest rate suitable for its work and the pockets of the bee-keeping fraternity, Mr. Bennett, with his usual liberality, has purchased a combined machine and placed it in the hands of a competent person to improve, so that it will press honey in addition to the other work it does at present. When completed I expect it will not cost more than 10s. for the smallest size, and large ones at less than £1, which the Society will supply to all who wish them at little more than cost price.—A LANARKSHIRE BEE-KEEPER.

TRADE CATALOGUES RECEIVED.

Waite, Nash & Co., 79, Southwark Street, London, S.E.—*Wholesale Catalogue of Flower Roots for 1886.*

W. Cuthush & Son, Highgate, and Barnet, Herts.—*Catalogue of Bulbs for 1886.*



TO CORRESPONDENTS

* * All correspondence should be directed either to "THE EDITOR" or to "THE PUBLISHER." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

UNANSWERED LETTERS.—We find it necessary to state that letters to which replies are expected in this Journal should be addressed to the "Editor of the JOURNAL OF HORTICULTURE," and in NO OTHER WAY, to insure attention.

Books (W. C.).—The price of the "Garden Manual" is 1s. 9d., "Greenhouse Manual" 10d., "Primroses and Cowslips" 6d., all post free. The other work you mention is out of print.

Matricaria inodora fl.-pl. (Argus).—Yes, this plant is perennial in most situations, and sometimes increases to a rather troublesome extent.

Sugar Refuse (G. C. & Son).—No doubt it contains manurial properties. The only way we can suggest of finding a market for it is by advertising.

Covering the Back Wall of a Conservatory (M. D.).—The Rhyncospermum jasminoides would answer for planting in the recess, but it will be

a long time in covering a wall 14 feet high, and certainly is not sufficient for so large a space. If you want flowering plants the Habrothamnuses are excellent for the purpose, especially fasciculatus, and Cestrum aurantiacum. They would thrive well in boxes. Lapageria rosea and alba would also succeed.

Valves on Hot-water Pipes (W. Rosier).—We do not see anything wrong with the position of the valves. They are, we presume, intended to shut off the heat from the vinery or regulate it as required, and in that case are in the proper place. You do not want the water to flow and return to the boiler when heat is not wanted in the vinery. You have a connecting piece, which leads to the conclusion that you want heat up to that point, and for which we see no necessity; therefore we should leave the valves where they are. There is a flow and return to the Cucumber house, so that you can heat both separately or together.

Eucalyptus (Mrs. Saunders).—The Eucalyptus would be best cut down, but it is late for the operation. It would have been best to have cut it down in spring, and have kept the roots rather dry until it had pushed afresh, when water could have been given more freely. It will be best to defer the operation now until next year. It does not require a large quantity of water, only giving it when the soil becomes dry, but before the leaves flag, and then a thorough supply, repeating when occasion requires. It would be preferable to raise young plants from seed sown next March in a hotbed, which if well grown make good plants the same season.

Vine Leaves Scorched (Ignorant).—It is curious you should ignore our request as to addressing letters. We do not think your Vines are attacked with the Oidium, nor could we find any thrips on the leaves, but there are signs of the attacks of those insects which eat the cuticle of both the berries and stems, and the parts so "nibbled" turn black. The insects you have seen are no doubt yellow thrips, and though they may be destroyed by fumigation, this does not destroy the eggs. You had better examine the Vines carefully and apply a sponge saturated with a solution of softsoap and tobacco water to all the parts (except the berries) on which there is a faint suspicion of the presence of insects. We do not consider your Vines in "perfect strength." The leaves are too soft, lacking substance as if grown in a needlessly high night temperature, and the roots of the Vines in a somewhat loose and unduly rich border. A firmer rooting medium and a good dressing of lime would probably be beneficial. It is better to shade very lightly than allow the leaves to be scorched. The leaves before us are very different from the foliage of Vines that are in first-class condition.

Mildew on Onions (Onions).—Onions are occasionally attacked with a form of mildew peculiar to the crop and it is very destructive. We should try the effect of syringing them with a solution of softsoap and sulphur, dissolving the soap at the rate of 2 ozs. to a gallon of water, then heat some sulphur into a paste and mix it in the solution till of the consistency of thin cream, yet not so thick that it cannot pass readily through the nozzle of a syringe. If that does not check the mildew and the tops wither the bulbs had better be pulled up, dried, and stored, burning the tops. It will be advisable to have your Onion bed in another part of the garden next year.

Melons—Raspberries—Red Spider—Heating (Kittie).—For ensuring a regular set and good crop of Melons the flowers should be artificially fertilised; bees are not to be trusted to do what you desire. Raspberries grow and fruit admirably in good soil on borders having a north aspect in the southern and midland counties. If you syringe your Peach trees very forcibly just before the fruit changes the red spider will do little injury if the work is done well; the water must of course be directed to the under sides of the leaves. Amateurs as a rule use the syringe very ineffectively and as if they were afraid of disturbing the insects on their trees. The method of arranging the pipes under the roof of your low pit, one pipe along the front and the other half way up, is good for wintering Pelargoniums. Our reply is founded on experience.

Mushrooms (Amateur).—The manure should be collected fresh from the stables and only the long, clean litter forked out, the remainder consisting of droppings and short stained straw shaken together and thrown in a heap to ferment. In reply to your inquiry on the point, the fourth edition of "Mushrooms for the Million," with supplement, is now ready and can be had post free from this office for 1s. 2d. You will, perhaps, find all the information you need in the work, as the supplement is devoted to the solution of difficulties that have been experienced by amateurs. The present is the exact time for collecting materials for outdoor Mushroom beds.

Chrysanthemums (E. W.).—You had better take the crown buds as soon as they form by removing with great care the surrounding growths; but if the slightest injury is done to the buds it will show itself more and more as the buds swell, and the bloom will be imperfect. All the axillary growths should be removed from the stems of the plants, and suckers from the roots.

Carnation—Gaillardia—Chrysanthemums (S. L. B.).—If your Pride of Penshurst Carnation is not spindling for bloom we should layer all the growths at once, tonguing and pegging them into light sandy soil, and this being kept moist you would soon have a healthy stock of young plants for potting. These, with good management, would be certain to flower freely next year, either in pots or planted out as you may prefer. This will be a much better plan than taking up the old plant. Gaillardia cuttings strike freely in pots of sandy soil kept moist, close, and shaded, to prevent the leaves flagging. A frame is a suitable position for them, and the present a good time for insertion. The cuttings should be made of crisp portions of young shoots, those very soft or hard not striking freely, and flower buds must be picked off. Perhaps more money was made by cut blooms of Madame Desgrange last year in London than of any other early Chrysanthemum, the buds being thinned in good time for the development of fine flowers.

Young Growths of Peach Trees Dying (H. S.).—The growths are weak, long-jointed, and soft, so much so that the bark is liable to injury from moisture and sun. Moisture from syringing lodging on the shoots decomposes the tissue or epidermis, and sun acting powerfully upon them whilst wet or even dry after a dull period causes the parts exposed to its influence to decay. Such growths as your trees exhibit are very unsatisfactory. They form fruit buds late in the season, and are scantily furnished with them. The shoots sent are devoid of fruit buds forming, and this in a cool house in August! The cause is roots in a cold wet soil. It may be too rich and loose. We should early in October take a trench out one-third the

distance from the stem the trees cover in extent of trellis, and down below the roots, cutting off all roots beyond the one-third radius. This will check the tendency to late growth, and the wood may be assisted to ripen by keeping the house rather close in the daytime, or warm from sun heat, and throwing the ventilators open at night. The trenches may remain open for a fortnight, the soil in the one-third radius being kept moist, but not very wet. When the leaves give indications of falling, commence at the trench and remove the soil carefully from over and amongst the roots, leaving a good part next the stems undisturbed, so as, if possible, to lift with a ball. In any case, preserve as many of the roots, particularly the smaller ones, as possible. The branches will, of course, require to be untied, then tied together in small bundles with care so as to facilitate operations, and the roots should be covered with damp mats to protect them from the air whilst the site or station is got ready for replanting. The border being drained at a depth of 30 inches (9 inches to a foot thickness of rubble below that), it will only be necessary to rectify it if defective, or provide it if wanting, a tile drain being provided under the drainage to carry off superfluous water. The drainage should be roughest at bottom and finest at top, secured with a layer of thin turves, grass downwards. The whole of the soil to a width equal that of the trench should be removed, and that part remade. You do not state the kind of soil. It is probably light and rich. If so add to it a fourth of clay or marl in as fine divisions as possible, and a tenth of lime rubbish from an old building; the whole thoroughly incorporated with the soil. If the soil be heavy add a sixth of old mortar rubbish and a similar proportion of road scrapings. A thirtieth part of wood ashes will be a capital addition. Fresh turfy loam is advisable if it can be had. Put in sufficient soil so as to raise the border to the level that when the tree is introduced it will have the setting on of the roots 3 inches below the intended level. Make the soil firm by treading, alike to resist the roots otherwise passing quickly through it, and cause their increased ramifications, and prevent settling. Spread the roots out thinly and evenly as they rise, work the soil in amongst them and make it firm. The roots should be kept near to the surface, but they must not be raised abruptly from their origination, but lifted gradually and laid in as they rise, the lowest about a foot from the surface, and the topmost about 3 inches. Make it thoroughly firm, give a good watering to settle the soil about the roots, and mulch the surface with 3 inches of fresh short stable manure. The branches should be untied, spread out loosely, and tied, sprinkling with water in the morning of bright days and early afternoon, the house being kept rather close by day but fully ventilated at night. The growths should be thinned if thickly placed after lifting. Carefully lifted and replanted the trees will not suffer, but be materially improved in fruiting another year and permanently benefited.

Names of Fruits.—The names and addresses of senders of fruit to be named must in all cases be enclosed with the specimens, whether letters referring to the fruit are sent by post or not. The names are not necessarily required for publication, initials sufficing for that. (*Thomas Joyce*).—2, Beurre Kennes; 3, Knight's Monarch; 4, Passe Colmar; 10, Beurre Superfin; 12, Nouveau Poiteau.

Names of Plants.—We only undertake to name species of plants, not varieties that have originated from seed and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in firm boxes. Slightly damp moss or soft green leaves form the best packing, dry cotton wool the worst. Not more than six specimens can be named at once. (*H. J. P.*).—*Bignonia grandiflora*. (*H. C.*).—1, *Hedysarum coronarium*; 2, *Agathe celestis*. (*Miss Kenwick*).—1, *Cystopteris fragilis*; 2, *C. alpina*. (*C. H. Stephens*).—1, *Tanacetum vulgare*; 2, *Betonica grandiflora*; 3, *Briza maxima*; 4, *Campanula lilifolia*; 5, *Liatris spicata*. (*No Name*).—1, The feathery specimen is *Rhus Cotinus*; 2, Resembles a *Hedysarum*, but the flowers were too much crushed in the letter to be determined. (*Mrs. R.*).—The specimens were not good ones to determine, and we do not name more than six at a time; 2, Resembles a *Nasturtium*; 4, *Vicia sepium*; 5, *Sedum rupestris*; 6, *Pyrethrum inodorum*; 7, *Matricaria Chamomilla*; 8, *Myosotis sylvatica*. (*F. P., Exeter*).—*Diplacus glutinosus*. (*A. W.*).—1, *Sedum azoideum variegatum*; 2, Cannot be named without flowers, but is apparently a *Mesembryanthemum*; 3, *Polemonium coeruleum*, *Jacob's Ladder*; 4, *Antennaria margaritacea*; 5, *Achillea Ptarmica flore pleno*; 6, *Veronica salicifolia*. (*Belasc*).—*Adiantum scutum* and *Olearia Haasti*.

Bees Dead in Supers (*H. T. H.*).—"A Lanarkshire Bee-keeper," whom we consulted, replies:—"If your bees have a free entrance to supers and these kept dark there must be some disease about the bees. From the description and time of the year it appears to be what I have described in my essay to be a chronic dropsical fever, and if it is the whole of your bees will die. If your supers are exposed and have windows in them, then that explains matters fully. Keep your supers well covered both when in and out of doors. Give us fuller particulars and we will do our best to unravel the mystery."

Ants and Bees (*R. C.*).—No doubt ants are destructive to both the grub of bees and their honey. The sancer with water should keep the ants from entering the hive, provided nothing else touches the ground for the ants to ascend. We used to make cups through which the legs of the hive or stand passed, then the outside was filled with liquid of some sort. No creeping thing passed through it, forming, as it were, a moat. If the larvae are putrid, be careful that the hive does not remain long in a doubtful state, as it may be foul brood. If you are not acquainted with it, forward us a piece of brood comb containing some brood in all stages, and we will advise you.

Bees and Bell Heather (*J. Edgar*).—There are varieties of Bell Heather. One kind that grows on mossy land we have not seen the bees work much upon, but the variety common in Arran and adjoining places yields much honey, and the bees are fond of it. At the Caledonian Apian Show held at Edinburgh in 1884, Mr. Paterson of Struan exhibited a quantity of Bell Heather honey. It is of a deep cherry red colour and fine flavour. The bell of the honey variety is narrower in the tube than in the one that does not yield any.

Frame feeder (*Idem*).—We have searched the back numbers, but have failed to find the description referred to. The frame-feeder is undoubtedly the best feeder out, as it places the syrup close to the tongues of the bees, while the tin that holds the syrup is glazed. A glance at it shows when it is empty. There is a little chamber right in the centre, bridged off so that

bees cannot escape nor cause trouble when refilling tin fountain. It only takes up three-eighths of an inch more than an ordinary frame, and for nursing nuclei is invaluable, and does not smear the bees.

Bees Clustering Outside Hives (*Bees*).—When the weather is hot and there are no supers on strong stocks the bees not infrequently cluster outside for weeks together, if the weather is so unfavourable as not to give an opportunity to swarm. The smaller the hive the more surely do the bees cluster before swarming. Most probably the weather has been unfavourable to swarming and the stocks have given up all idea of increase for this season, although the "one lot that seems to have gone back inside their own skep" may have removed the need for clustering by swarming—unperceived by you—and so reducing the temperature of the hive. No swarm will issue this season now from either of the hives if they are in a normal state, and there is no reason for suspecting that they are without queens. Sometimes an old or injured queen is unable to go with the swarm, but in that case suspicion would at once be aroused, for the swarm issuing unaccompanied by the queen a return would soon be made to the parent hive, and the queen not seldom found by the bee-keeper crawling on the ground beneath the hive. The comb built underneath the board should be carefully removed, and most probably in a few days, as the honey season is over in all but Heather districts, the bees will not be more numerous than the hive is able comfortably to contain. Most likely the queens of both stocks have been superseded, and if so care during the winter and a sufficiency of food alone are necessary to ensure success next year if the weather is favourable. Drones are, no doubt, now being ejected from the hives, the necessity for their existence having passed away with the month of July, and the end of the swarming season. From ten to fourteen days after the issue of a swarm "piping" can be heard in the old stock, and thus it is possible without difficulty not only to ascertain whether a cast will issue but also whether the stock has swarmed. Perhaps this will enable you to discover whether the stock, "the bees of which seem to have gone back inside," has sent out a swarm or not, unless too long a time has elapsed since the disappearance of the clusters.

COVENT GARDEN MARKET.—AUGUST 11TH.

No alteration from last week.

FRUIT.

	s.	d.	s.	d.		s.	d.	s.	d.
Apples	½	sieve	0	0	to 0	0			
Cherries	½	sieve	2	0	4	0			
Currents, Black ..	½	sieve	2	3	2	6			
" Red	½	sieve	2	6	0	0			
Figs	dozen	1	6	2	0				
Grapes	lb.	1	0	3	0				
Lemons	case	10	0	15	0				
Melon	each	1	0	to 2	0				
Oranges	100	6	0	12	0				
Peaches	per doz.	4	0	10	0				
Pine Apples English ..	lb.	2	0	3	0				
Plums	½	sieve	0	0	0	0			
St. Michael Pines ..	each	4	0	6	0				
Strawberries	per lb.	0	6	1	0				

VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.
Artichokes	dozen	1	0	to 0	0				
Asparagus	bundle	0	0	0	0				
Beans, Kidney	lb.	0	3	0	0				
Beet, Red	dozen	1	0	2	0				
Broccoli	bundle	0	0	0	0				
Brussels Sprouts ..	½	sieve	0	0	0	0			
Cabbage	dozen	1	6	0	0				
Capsicums	100	1	6	2	0				
Carrots	bunch	0	6	0	0				
Cauliflowers	dozen	3	0	4	0				
Celery	bundle	1	6	2	0				
Coleworts	doz. bunches	2	0	4	0				
Cucumbers	each	0	3	0	6				
Endive	dozen	1	0	2	0				
Herbs	bunch	0	2	0	0				
Leeks	bunch	0	3	0	4				
Lettuce	dozen	1	0	to 1	6				
Mushrooms	punnet	0	6	1	0				
Mustard and Cress ..	punnet	0	2	0	0				
Onions	bunch	0	3	0	0				
Parsley	dozen bunches	2	0	3	0				
Parsnips	dozen	1	0	2	0				
Potatoes	cwt.	4	0	5	0				
" Kidney	cwt.	4	0	5	0				
Rhubarb	bundle	0	2	0	0				
Salsify	bundle	1	0	1	6				
Scorzonera	bundle	1	6	0	0				
Seakale	per basket	0	0	0	0				
Shallots	lb.	0	3	0	0				
Spinach	bushel	3	0	4	0				
Tomatoes	lb.	0	4	0	6				
Turnips	bunch	0	4	0	6				

PLANTS IN POTS.

	s.	d.	s.	d.		s.	d.	s.	d.
Aralia Sieboldi ..	dozen	9	0	to 13	0				
Arbor vitæ (golden)	dozen	0	0	0	0				
" (common)	dozen	6	0	12	0				
Arum Lilies	dozen	0	0	0	0				
Bedding Plants, var.	doz.	0	0	0	0				
Begonias	dozen	4	0	9	0				
Calceolaria	per dozen	3	0	6	0				
Cineraria	dozen	0	0	0	0				
Cockscombs	per dozen	4	0	6	0				
Crassula	per dozen	0	0	0	0				
Cyperus	dozen	4	0	12	0				
Dracæna terminalis,	dozen	30	0	60	0				
" viridis	dozen	12	0	24	0				
Erica, various	dozen	0	0	0	0				
Euonymus, in var.	dozen	6	0	18	0				
Evergreens, in var.	dozen	6	0	24	0				
Ferns, in variety ..	dozen	4	0	18	0				
Ficus elastica ..	each	1	6	to 7	0				
Fuchsia	per dozen	4	0	9	0				
Foliage Plants, var.	each	2	0	10	0				
Heliotrope	per dozen	4	0	8	0				
Hydrangea	per dozen	6	0	12	0				
Ivy Geraniums ..	per dozen	3	0	6	0				
Lilium anatum ..	per doz.	18	0	60	0				
" lancifolium ..	per doz.	5	0	18	0				
" longiflorum ..	per doz.	18	0	30	0				
Lobelia	per dozen	3	0	4	0				
Marguerite Daisy ..	dozen	6	0	9	0				
Mignonette	per dozen	3	0	6	0				
Musk	per dozen	2	0	4	0				
Myrtles	dozen	6	0	12	0				
Palms, in var. ..	each	2	6	21	0				
Pelargoniums, scarlet,	doz.	3	0	6	0				
Pelargoniums	per dozen	6	0	15	0				

CUT FLOWERS.

	s.	d.	s.	d.		s.	d.	s.	d.
Abutilons	12 bunches	2	0	to 4	0				
Arum Lilies	12 blooms	4	0	6	0				
Asters	12 blooms	0	3	0	6				
Azalea	12 sprays	0	0	0	0				
Bouvardias	per bunch	0	6	1	0				
Camellias	12 blooms	0	0	0	0				
Carnations	12 blooms	1	0	3	0				
"	12 bunches	3	0	6	0				
Chrysanthemums ..	12 blooms	0	0	0	0				
Cornflower	12 bunches	1	6	3	0				
Cowslips	doz. bunches	0	0	0	0				
Daffodils	12 bunches	0	0	0	0				
Epiphyllum	doz. blooms	0	0	0	0				
Eucharis	per dozen	2	0	4	0				
Gerardias	12 blooms	2	0	4	0				
Hellebore	doz. blooms	0	0	0	0				
Hyacinths, Roman,	12 sprays	0	0	0	0				
Iris	12 bunches	0	0	0	0				
Lapageria, white,	12 blooms	0	0	0	0				
Lapageria, red ..	12 blooms	1	0	2	0				
Lavender	dozen bunches	4	0	5	0				
Lilium candidum ..	12 blms.	0	0	0	0				
"	12 blms.	0	0	0	0				
" longiflorum, 12	blms.	3	0	6	0				
Lily of the Valley, 12	sprays	0	0	to 0	0				
Marguerites	12 bunches	3	0	6	0				
Mignonette	12 bunches	1	0	4	0				
Myosotis	12 bunches	2	0	3	0				
Pelargoniums, per 12	trusses	0	9	1	0				
"	scarlet, 12 trusses	0	3	0	6				
Roses	12 bunches	2	0	9	0				
" (ludoor), per	dozen	0	6	2	0				
" Tea	dozen	0	9	1	0				
" red	dozen	0	8	1	0				
" Moss	12 bunches	0	0	0	0				
Primrose, Yellow, dozen	bunches	0	0	0	0				
Pyrethrum	12 bunches	4	0	9	0				
Spiræa	12 sprays	0	0	0	0				
Stephanotis	12 sprays	2	0	3	0				
Stocks, various ..	12 bunches	3	0	5	0				
Sunflowers	dozen	0	6	1	0				
Sweet Peas	12 bunches	2	0	4	0				
Sweet Sultan	12 bunches	3	0	4	0				
Tropæolum	12 bunches	0	0	0	0				
Tuberose	12 blooms	0	6	1	0				
Violets	12 bunches	0	0	0	0				
"	12 bunch	0	0	0	0				
" Czar, Fr., ..	bunch	0	0	0	0				



THE FLOCK.

UNDER the agricultural depression we have seriously to consider ends and aims in farming, to pass in review all that has been done, to discard whatever is unprofitable, and to retain only such crops and animals as are calculated to afford some return upon reasonable outlay. That sheep "pay" even now there can be no doubt, both upon arable and grass land, and it is well therefore to consider how they may be best turned to advantage. "Light land for sheep" is an article of faith among farmers generally; may we not go farther, and say all land is suitable for sheep if it is under sound cultivation? Heavy land is often condemned for sheep in winter; yet if it is made sound by drainage, and porous by dressings of lime, burnt earth, or coal ashes, we see no reason why sheep may not be kept upon it the year round, if yards and lodges are provided for shelter.

The present month may be regarded as the best time in the whole year for the re-arrangement of the flock. The weaning is over, the drafting of lambs for breeding, for hoggets, or for sale has been done, tup sales are beginning, and preparations for the ensuing breeding season are now being made. Hoggets, if selected with care, answer best for folding in winter and spring, and the root crops are now forward enough in growth to show that there will be an ample provision of food for the purpose. Just now it is folding upon Rye Grass, Clover, Sainfoin, or Lucerne that demands attention; and we have been purchasing old sheep for this particular purpose for several weeks, as opportunities occurred. Preference is given to old sheep for summer and autumn folding, both for the freedom with which they adapt themselves to changes of diet and for the profit at which they can be sold subsequently. Coming from the lambs, as most of them do, very low in flesh, they soon improve in appearance upon a liberal diet of green food, with corn and bran or cake, and they certainly do the land much good if the folding is well managed. Our especial object is to impart fertility to the soil at as little cost as possible. Old sheep bought at the rate of 25s. apiece, if healthy, answer better for this purpose than anything else we have tried, for by the time they are fattened they have passed over much land and are sold at a price which affords some profit upon our outlay for the sheep, food, and labour.

Last summer we had a Clover layer, the growth of which was so weak as to show clearly the poor condition of the soil. Old sheep were passed over the whole of it in folds, enough Waterloo cake being given to fatten them. Ploughing followed the folding closely to prevent waste of manure by evaporation, and in due course Wheat was sown, with a half dressing of pure home-mixed chemical manure. Another half dressing of chemical manure was given early in spring, and we have now a fine crop of Wheat, showing in no uncertain manner that the land is reclaimed from poverty and loss to fertility and profit. By sheep folding only we could not have been so successful, but it ought certainly to be regarded as laying the foundation of our success. At the present time we have one flock of old sheep folded upon a coarse growth of Meadow Grass, such as is usually thought must suitable for cattle. It is a poor pasture, and we know that by sheep-folding we can do much to improve it. Lambs would not answer for such a purpose; they would not eat such herbage closely, nor would their excrement enrich the soil sufficiently.

At another farm we have just begun folding old sheep upon a second growth of Red Clover. We bought this flock for 20s. 6d. apiece, and if we are able to dispose of them after the folding as fat sheep at about 40s. they will answer

very well. Experience has shown that this estimate is a safe one, and we may add that it is based upon the results of our practice last autumn. No doubt we were fortunate in our purchase of this flock at an exceptionally low price; it was just one of those chances which occasionally occur at big auction sales, where results are always somewhat speculative. At the next big sale we were at sheep, decidedly inferior to ours, sold readily for 3s. to 4s. more apiece than we gave. At another farm, after the sheep have finished the Clover, they will go upon White Turnips sown early for the purpose, and which are now growing very fast.

To sell such sheep profitably it must be done gradually, and only as they become fat enough for the butcher. We have several hundreds of them, and our sales will extend over the autumn far into winter, for with our splendid crops of roots and strong aftergrowth of grass, food will be so abundant that we can afford to wait, and draft the sheep for sale in small batches to best advantage. Unless heavy land is well drained the sheep must be withdrawn from it early in autumn; the most forward sheep should, therefore, be selected for such land, and the necessity for the withdrawal of the sheep in winter should act as an additional incentive to doing as much drainage as we can next winter.

WORK ON THE HOME FARM.

Winter Oats have been mowed and left unbound to be turned over, so as to have the corn well ripened, as it is our intention to thresh it at once as it is carted from the field. With favourable weather this can be done before the regular harvest work is begun, and the straw can be cut into chaff at once and put into a compact heap in the chaff house. If a slight fermentation occurs in the heap the chaff has an aroma almost equal to the best meadow hay, and it is eaten readily by horses, sheep, and cattle. We have long ceased tying Oats into sheaves, for the straw absorbs moisture so easily that if the sheaves become wet the whole of them may have to be unbound. Spring Oats have much improved, even within the past week. This is of even more importance than it was, since so many farmers have sown many additional acres of Oats instead of Wheat. Under high cultivation we have now no crop more profitable than Oats, and we may add no crop has been more neglected than this. Five or six quarters an acre is often grown upon land that if well managed would yield twice as many Oats. Wheat was the only corn for which manure was considered necessary. Oats or Barley would grow and yield a crop of some sort without any special dressing of manure, and this was thought conclusive without any inquiry as to the possibility of getting better crops by improved means of culture. Hoeing among late-sown Swedes and White Turnips, hedge-clipping, Thistle-spudding, tarring and painting of fences, gates, and outbuildings, and similar work is being done in the interval between hay and corn harvest. Horses have been employed in carting chalk and gravel for the bottom of yards, care being taken to examine and set in order any faulty drains before they were covered afresh. Fences and gates are also being repaired around the yards, while cows and other stock are out upon the pastures. We would again call attention to the importance of keeping premises in repair by having trifling blemishes set right at once. We greatly deplore the appearance of careless neglect now visible in so many homesteads; yet many of them could be set in order by the judicious use of a few boards, bricks, and tiles, and a little whitewash or tar. Sorely does this matter press upon us, for we are now engaged in putting the whole of the farm buildings of a large estate in order, which have had literally nothing done to them for many years.

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude, 111 feet.

DATE.		9 A.M.					IN THE DAY.					Rain
1886. August.		Baromet- er at 39 and Sea Level	Hygrome- ter.		Direction of Wind.	Temp. of Soil at 1 foot.	Shade Tem- perature.		Radiation Temperature.			
			Dry.	Wet.			Max.	Min.	In sun.	On grass		
		Inches.	deg.	deg.		deg.	deg.	deg.	deg.	deg.	In	
Snnday	1	29.829	62.4	56.1	S.W.	60.4	72.4	50.8	120.6	46.8	0.160	
Monday	2	29.633	58.0	57.1	W.	60.9	64.9	56.2	114.4	55.6	0.024	
Tuesday	3	30.082	57.9	50.3	W.	59.7	68.7	44.5	116.6	39.0	—	
Wednesday ..	4	30.127	60.0	54.7	N.	59.9	69.2	51.4	109.7	47.1	—	
Thursday ..	5	30.168	62.3	57.9	E.	59.6	71.7	47.4	112.3	41.6	—	
Friday	6	29.942	64.3	61.1	S.W.	59.8	78.3	58.7	115.6	55.4	—	
Saturday	7	29.965	67.2	63.5	S.W.	61.2	76.6	60.0	114.0	58.5	0.026	
		29.95	61.7	57.3		60.2	71.7	52.7	116.2	49.1	0.150	

REMARKS.

1st.—Fair, and sometimes bright till evening, rain from 6 P.M.

2nd.—Wet morning, fine bright afternoon.

3rd.—Fine bright day.

4th.—Fine but not bright, occasionally cloudy and no strong sun.

5th.—Fine but with little sun.

6th.—Cloudy morning, bright warm afternoon, rather close.

7th.—Cloudy morning, fine and bright afternoon.

Rather dull with average temperature, but rather less rain than usual.—G. J. SYMONS



COMING EVENTS

19	TH	Maidenhead Show.
20	F	Exeter Show.
21	S	Cheadle (Cheshire) Show.
22	SUN	9TH SUNDAY AFTER TRINITY.
23	M	
24	TU	Royal Horticultural Society (Committees at 11 A.M.). C. ttagers' Show.
25	W	Reading, Ludlow, and Brighton Shows.

THE HOLLYHOCK REVIVAL.

FLORICULTURAL visitors to the Royal Horticultural Society's Show and meeting at South Kensington recently were surprised to observe the reappearance of the Hollyhock as a portion of the floral attractions, and with a considerable share of its former charms. After the lapse of ten years, during which time the Society has not certificated one variety of Hollyhock, we find quite unexpectedly three or four collections of fine blooms staged, and no less than four novelties are deemed worthy of honours. Whether the destructive fungus has run its course and finally ceased to trouble us, or whether the present immunity is the result of the season merely, cannot be determined. One thing is certain—Hollyhocks are this year finer than they have been for a decade, and all agreed in regarding it as a most favourable omen for admirers and cultivators of this stately plant. It is not unreasonable to hope that we may again see the plants occupying the position they so well deserve in gardens, and that cut-flower departments of late summer shows may be graced by their bold handsome spikes.

As a "landscape" flower the Hollyhock is unrivalled, the Foxglove, beautiful though it is, being of less imposing stature, and not so useful in distant effects. The former can, however, be employed with grand results if it is planted judiciously and in suitable places; its tall spires tower above all ordinary herbaceous plants and dwarf shrubs, and it can consequently be employed to excellent purpose in the background of herbaceous border or the foreground of shrub-beries. Being somewhat formal in general character, especially the double varieties, Hollyhocks are seldom seen to the best advantage when disposed in straight lines or in any other formal manner. A bold irregular, but not crowded, group in a distant part of the flower garden is perhaps the most effective way of planting them; or where it is desirable to plant them near the house they are best in borders near walls, or with a background of shrubs, as they do not look well in isolated beds close to the windows. Some years ago a grand display of these plants used to be provided at Hampton Court Palace Gardens, and arranged as these were close to the building and facing the walk which extends to the Thames, they had a fine appearance. The common single varieties are by no means to be despised, for though they would not satisfy the requirements of a florist, there is something charmingly picturesque about vigorous plants of the single Hollyhock such as are seen in country cottage gardens. Many have had occasion to deplore the loss of their plants during recent years, and their restoration would be a distinct gain to the floricultural world.

The Hollyhock is one of our oldest introduced plants, and though several dates have been given by various authorities, there seems to be considerable uncertainty as to when it first appeared in this country. Probably it was some time about the middle of the sixteenth century, for it is mentioned by

the old herbalists, Gerard, Parkinson, and others, as common in gardens, both single and double varieties being described and figured. It is a Chinese plant, and has there been cultivated for a long time, seeds having been distributed thence through many parts of Asia, and finally to Europe; and some have thought that he referred to this plant when he mentioned a "Rose growing on stalks like the Mallow." The older English writers do not give much information respecting the introduction of the plant, though it was evidently regarded with considerable favour at the time Johnson's edition of Gerard's "Herball" was published—namely, in 1633, for it is stated that "these Hollihockes are sown in gardens almost everywhere." Rather more than a century later Miller gave very full cultural directions, and remarks that he had double and single varieties with white, pale red, deep red, blackish red, purple, yellow, and flesh-coloured flowers. He also observes that, "besides these, I saw many years ago some plants with variegated flowers in the garden of the late Lord Burlington, in London, raised from seeds which came from China." From seeds supplied to Miller by a Mr. Charles du Bois, of Mitcham, in 1726, which were originally obtained from Madras, "many double varieties of several colours" were raised, which no doubt helped to improve the race considerably. Martyn adds to the edition of Miller's "Dictionary," published in 1807, that "a dwarf sort with beautiful double variegated flowers has been in great esteem for some years past under the name of Chinese Hollyhock."

The greatest successes were, however, reserved for the florists of the nineteenth century. Numbers of handsome double varieties were raised, classes were provided for it at exhibitions all over the country, and the plant became an established favourite. From about 1850 to 1870 was the period in which the Hollyhock gained the greatest number of admirers, and some idea can be formed of its popularity by consulting the certificate records of the Royal Horticultural Society's Floral Committee. Thus from 1859 to 1871 seventy-six varieties were certificated, and no less than thirty-nine of these were raised by Mr. Chater of Saffron Walden, the Rev. E. Hawke following in point of numbers as a raiser, and Messrs. Downie, Laird and Laing next. In the succeeding twelve years—namely, from 1872 to 1884, the total fell to fifteen, shared nearly equally by Hawke and Chater, but the last one certificated was Virgin Queen (Chater), August 2nd, 1876, and from that time to the present Hollyhocks have disappeared from the list.

Everyone knows that this sudden downfall was not due to a change of public taste, but to the appearance of a fungus, which came as unexpectedly as the Potato disease, attacked a plant that had been in cultivation for 300 years, and wrought as great a devastation as the Peronospora. The coincidence does not end there. The Puccinia malvacearum is also a Chilian fungus, and according to Mr. W. T. Thiselton Dyer it was first described by Montagne from specimens collected in Chili by Bertero, where it principally attacked the Marsh Mallow (*Althæa officinalis*). From there it seems to have found its way to Australia, thence to Spain, and became very destructive in France in 1873. The fungologist, Professor De Bary, has expressed some doubt about the introduction of the fungus from Chili. I do not know upon what evidence, but he confirms the European spread of the fungus. The Rev. M. J. Berkeley has stated that there was no record of the fungus in this country until July 12th, 1873, and that it was first observed on an extensive scale in France on June 26th of the same year. When once it obtained hold here it extended with great rapidity, and collections in all parts of the kingdom were soon infected, and hundreds of thousands of plants were destroyed, as no effective method of combating it could be found. In two years from the time it was first observed the majority of the finest Hollyhocks were extinct, and some of the most experienced growers had to discontinue issuing lists, as they could not supply plants.

Applications of softsoap, sulphur, and Gishurst were tried with little effect, and the only course has seemed to be destroying the infected plants and obtaining fresh stock. In cool moist seasons the fungus has been less troublesome, and on one or two occasions there was a partial recovery that induced some to hope the pest had been conquered; but each hot, dry, succeeding summer restored its devastating powers to the fullest extent.

There is little doubt in my mind that one cause which has contributed greatly to rendering the Hollyhock more liable to the attacks of this fungus is the system of rapid propagation by cuttings. No sooner has a fine new variety been secured and a demand created than the utmost efforts have been made to increase the stock, the plants have been grown under glass, in heat, to obtain all the cuttings possible. It seems quite clear that this process continued during many years has gradually weakened the constitution of what is naturally a hardy plant, and thus rendered it especially liable to the attacks of a fungus like the Puccinia. A liberal system of culture, having the plants as hardy and sturdy as possible, and propagation by seeds are the most likely means of procuring a race of Hollyhocks free from the fungus, or at least to diminish the virulence of its attacks. Probably the fact that Hollyhocks have been increased more by seed recently may have had something to do with their improved health and freedom from disease this season; in any case I think a substantial advance has been made in the right direction, and we may expect to see Hollyhocks once more holding the place they so well merit.—SUBURBANIST.

CULTIVATION OF THE STRAWBERRY.

(Continued from page 134.)

FORCING VARIETIES.

PLACING IN POSITION.—Stand the plants on the shelves at such distance that they will stand clear of each other. If there is to be a removal of plants after they have set the fruit they may be closer together than were no such removal to take place, but the plants must have room for the expansion of their foliage without crowding, light and air being essential alike to growth, flowering, setting, swelling, and ripening. About a foot apart is a suitable distance. What about turves on the shelves, troughs filled with manure, and saucers? I have tried all, and the results were not better than by placing on the bare shelves, whether they were stone, slate, board, lattice, or iron grate. Neither the turves nor manure troughs save watering, but encourage the roots passing into the turf and manure, and prevent the plants being moved until the fruit is ripe. Saucers are not used until the fruit is fairly swelling, and they are removed as soon as the fruit has swelled. They, however, are not material if only care is taken in watering. The saucers, nevertheless, are valuable when the plants occupy positions where drip from them would be fatal to their being present through the more important value of crops beneath. Drip from Strawberries on shelves in Peach houses, Fig houses, vineries, Melon and Cucumber houses, Pine stoves, or elsewhere, is highly objectionable. I have had Strawberries on shelves at the upper part of the back wall of a Peach house, and drip from the pots when the Peach trees were in blossom converted the pollen into paste. Saucers are useful in such cases, better still are the ledges on the edges of the shelves and the zinc tubes before alluded to to carry the water to the ground, and best of all is to have the shelves so placed that the drip will not fall on anything of consequence. In that case saucers are not necessary, and they certainly are not essential.

TEMPERATURE.—The frame treatment will allow the usual keeping cool for a fortnight being dispensed with. Commence with 45° to 50° as the artificial temperature. This should be continued for a week, and in the course of another it may be raised 5°, or to 50° or 55° by artificial means. It must be kept steady at these, 55° being the day temperature, and 50° the night. On very cold nights the temperature may be allowed to fall 5°, but the heat must be turned on or the fire set to work so that the temperature will be raised an hour after daybreak, or if very dull and cold 5° less may be allowed through the day. This will only retard the process, and it has the advantage of being safe. With sun the temperature may rise 5° on a cloudy day with occasional clear intervals, 10° with about as much sun as cloud alternating, and 15° with a clear sky, and in all cases closing should be practised so early as to advance 5° if possible on the days and tempera-

ture indicated. These temperatures should be continued and prevail until the fruit is set, when it may be slightly increased, advancing 5° in the course of a week, and 5° more in the course of a fortnight, which will bring the night temperature up to 60° or 65°, and the fruit will then be advanced in swelling, and bear a much higher temperature. The temperature from sun heat will, of course, advance those from artificial means in the ratio before given—viz., 5° on dull days with a little sun, 10° with sun and clouds alternating, and 15° on clear days.

This stage of the fruit being reached, and the crop having to be finished in the same house, the night temperature should be kept at 65°, falling 5° on cold nights, and ruling 5° higher on warm nights, 70° to 75° by day from fire heat and 80° to 90° through the day from sun heat. This can be continued until the fruit begins to ripen, when a temperature of 60° to 65° at night and 70° to 75° by day will be all that is necessary, a high day temperature being kept down by admitting air more liberally. The fruit is found to have better flavour than when ripened in a high and moist atmosphere.

VENTILATION.—Until growth is commencing little ventilation will be required, except when the temperature reaches the day limit. Closing should be effected sufficiently early to raise the heat 5° above the maximum day temperature. Ventilate slightly at the top before nightfall, and let it remain constantly except when the house is closed in the afternoon. This procedure is to be adopted throughout the whole of the forcing period, with but two exceptions—when the plants are flowering and when the fruit is ripening. At those times a circulation of air should be maintained constantly.

WATERING.—The plants should be attended to once a day in the early stages of growth, twice or three times a day when they are in free growth and their crops swelling. After the fruit begins to change for ripening water should only be given to prevent the foliage flagging. All water used should be tepid, a few degrees warmer than the house.

SYRINGING.—Syringe the plants morning and afternoon up to the flowering period; the exceptions are when the weather is dull and cold and the foliage does not get fairly dry before night. A gentle sprinkling is the best, and not driving squalls from the syringe, wetting a plant here and there. In dull weather damping available surfaces in the morning and afternoon will be sufficient. It does not answer to keep the foliage dripping with moisture. When coming into flower avoid saturating the flowers with water, but a slight syringing will not do any harm until the flowers are fully expanded, when it is best discontinued. After flowering syringing may again be practised morning and early afternoon, discontinuing it as soon as the fruit gives the first indications of ripening. If continued later it is liable to cause the fruit to be spotted, and the least speck spoils a large fruit.

FEEDING.—This is best effected by liquid manure. The surface dressing of horse droppings or decayed manure may be renewed from time to time, removing the old before applying the fresh. After setting is a good time to renew the mulch. A few weak applications of liquid manure may be given as the plants come into flower, but the chief thing is to feed when the plants are swelling the fruit. The drainings of stables, farm, or dung yards diluted with six times the bulk of water are good, but these are so variable in strength as to be of little value so highly diluted, and unless diluted they are at times so strong as to be positively injurious. Judgment must therefore be exercised in using such substance. A peck of sheep droppings to 30 gallons of water makes an excellent liquid manure, and so does the cow and fowl manure. Soot, at the rate of a peck to 60 gallons of water, is good. Guano, 1 lb. to 20 gallons of water, sulphate of ammonia, 1 lb. to 30 gallons of water, may be mentioned as suitable. The liquid in all cases should not be less in temperature when applied than that in which the plants are growing. Liquid manure may be given every alternate watering, and should cease when the fruit commences changing colour for ripening. In applying liquid manure it must not be poured upon the plant, but the foliage should be raised with one hand so that it can be poured from the pot with the other beneath the foliage and fruit. This must be done carefully, as any rough handling of the fruit will damage it, and its decay will be speedy.

FLOWERING.—The plants must have perfected the flower buds, and they must have time to develop and form the organs of fructification, so as to secure complete fertilisation. This requires gradual development. If placed in a strong heat at once the flowers may unfold, the calyx and corolla suffer no injury, though the corolla is unusually short, the stamens may even assume their yellow colour, but generally turn black or shrivel, and the pistils, instead of being a lively yellowish green,

become black or abortive. This is sometimes a consequence of immature development—not well-matured crown or heart buds, but it very often arises from bringing on the plants too rapidly, and in keeping too hot and moist when the flowers are developing. Syringing, or a close confined atmosphere, is fatal, the latter especially. We have known a light sprinkling of benefit in liberating the pollen, but it is best omitted. Ventilate early and freely, and avoid sudden fluctuations or depressions of temperature. Cold currents of air and a moist confined atmosphere should be avoided. Artificial impregnation may be had recourse to on a fine day when the pollen is ripe, using a camel's-hair brush, a feather, or better a bunch of feathers or a plume of Pampas Grass, brushing the flowers over lightly. Air in motion will do it just as well, and a sharp gentle rapping on the lower part of the trusses is good. A rather dry condition of the atmosphere is necessary, but moisture must be secured by damping, only it must be kept from being deposited on the flowers. I have seen the corollas browned through a moist confined atmosphere, and then have been asked why the flowers do not set and those setting are deformed?

THINNING THE FLOWERS AND FRUIT.—The trusses have all the best flowers, and consequently fruit at the lower part, and when the trusses have about half their flowers expanded the buds on the upper part may be removed. Either those left will set or those removed would not have given fruit worth retaining, so it is just as well to remove the weak flower buds and thereby strengthen those retained. We may safely remove half of the flowers when the first or lower half are fully expanded, as we can then see whether they are perfect and likely to set. Some are so afraid of not having a crop that they leave all, and even defer thinning the fruit until the first fruits are considerably advanced in swelling. The longer any surplus flowers or fruit remain the more is taken from the size of those ultimately retained for the crop. As to the quantity of fruit per plant to be retained, that entirely depends on the size the fruit is wanted and the kind. La Grosse Sucrée does not give half so many flowers as Vicomtesse Héricart de Thury, and to thin the former as much as the latter would be to cut all the fruit away. Half a dozen fruit on La Grosse Sucrée correspond to about a dozen on Vicomtesse Héricart de Thury, so that with a dozen on La Grosse Sucrée as a crop we may take two dozen on Vicomtesse Héricart de Thury with a certainty that we get as much weight. Of course, if the blossom and fruit of Vicomtesse be reduced early to a dozen there will not perhaps be any difference in the size of the fruits or the weight of the two kinds. Quantity does not mean weight, and it certainly does not mean quality. The crown or king fruit always takes the lead, and if fine fruit for particular purposes is wanted these only should be retained, the others being cut away. As to the size of the fruit, 1 oz. is a good weight for La Grosse Sucrée and Vicomtesse Héricart de Thury; Sir Harry will weigh $1\frac{1}{2}$ oz.; President, Sir Charles Napier, Dr. Hogg, and British Queen may reach 2 ozs. in occasional instances; Marguerite will grow to a very much heavier weight.—G. ABBEY.

BRITISH ORCHIDS.

MANY of our native Orchids are much-neglected plants, perhaps because they are thought to be difficult to cultivate, and as regards some of them this is quite correct. Others, however, are not so difficult to manage, and might well be added to collections of hardy plants. One great favourite is *Habenaria bifolia*, which can be collected in a wild state and safely removed to a garden. We find the best way is to dig them up with a trowel when in bloom, running it down deep enough to take the plant up with a good ball of earth round the roots, and transplant them where wanted as soon as possible, watering daily through a fine rose until they are established and rain falls, after which they may be safely left to themselves. Any turf or weeds in which they are growing when lifted should be cut off with a sharp knife instead of pulling them out, so as not to disturb the little ball of earth each one should possess; also to plant a little deeper. We have found suitable places for them at or near the base of rockeries, as there is usually more moisture than when near the top; they also do well transplanted in grass, but of course it must not be cut with a mowing machine or scythe till the foliage has died. We have a number of them in long grass near the lawn, in which hundreds of Bluebells, Narcissus, Snowdrops, Crocus, Squills, and other bulbs are planted, and are usually all mown down about haymaking time. An annual top-dressing of leaf soil suits it, as it does most other plants on the rockery.

Other pretty British Orchids are *Ophrys muscifera*, *Ophrys aranifera*, *Ophrys apifera*, *Orchis mascula*, *O. maculata*, *O. latifolia*, *O. Morio*, *O. pyramidalis*, *Gymnadenia conopsea*, and *Aceras anthropophora*. All the above were dug up and planted when in full bloom, and have not in the least degenerated; but some, particularly *Orchis mascula*, *O. latifolia*, *O. maculata*, and the *Aceras*, are much finer than when planted two years ago. The Bee Orchis (*O. apifera*) is about the same, but the three bulbs that

were planted together and had three spikes last year, this year has only two. We have had several clumps of *Orchis maculata* with twenty or more spikes in each, with several varieties as regards colour. A good quantity of decayed leaf soil was well mixed in when the rockery was made, and in it they seem to delight, many of the spikes being more than 18 inches high, and with more than fifty flowers on each. This is one of the best species from a "cut flower" point of view, and anyone fortunate enough to find a wood with plenty of them growing in, and with permission to dig them up, may safely do so when in full bloom, planting them in a good place in the kitchen garden, where they may be allowed to remain, and will be rewarded with plenty of flowers annually. The colour of this species varies from nearly white to crimson, thus showing that some hardy Orchids are as variable as some of the exotic kinds, notably *Odontoglossum Alexandræ*.

The variety shown in the woodcut (fig. 22) is a fine selection named



Fig. 22.—*Orchis maculata* *superba*.

superba, and superior to most forms in the size and excellent form of the spike, also in the bright colours of the flowers.—B.

MADRESFIELD COURT GRAPE CRACKING.

MR. RIDDLE'S allusion to the hydraulic curiosity, the Copper Weeping Willow of Chatsworth, takes me back in thought to more than a score years ago, when I was initiated into the mystery, as also the uses and abuses of this Willow. Reverting to the Grape question, I do not pretend to hydraulic control of the roots, but contend that under my plan of root covering, while retaining all the water food necessary to mature the crop, it prevents moisture arising, and thus at once keeps the berries sound and maintains the roots in a growing condition. Having plenty of good foliage and laterals, all that I require for shade purposes, I pinch all sub-laterals and young growth, but do not use knife. Theoretically I may be wrong, but practically I am right, as we have a crop of sound fruit. I take it for granted your correspondents who favour root-watering now will admit I am in less danger of cracking berries by dew, moisture, or

steam, whatever they like to call it, since I can perfect the crop, as I am fully persuaded the roots have all they require.

They do admit rising damp or moisture is a cause of skin cracking, and when formerly I watered Madresfield Court in the usual way, knowing the great danger of atmospheric moisture, the watering was only supplied on suitable occasions, such as a bright morning with a little wind if possible; even then, though I generally kept the door open, I could not stop the cracking. I have Madresfield Court Vines with thirty bunches each, and though we do not get the berries quite so large as some I have seen, the colour and flavour will be all that are required. We have had a series of cold, wet, sunless days and nights—to-day I see the thermometer stands at 55°—then we have an hour's hot sun or less, then cold again. I noted a change of 10° in an hour to-day; just what favours cracking.

Several persons have called to see me lately, and they acknowledge they like my treatment and think I am on the right tack; one a lord's gardener, whose employer thinks Madresfield Court the only black Grape grown worth eating, wishes he had a crop to equal it. Another gardener holding this position to a more exalted personage, only as late as Tuesday, on seeing my crop stated he intends trying what he can do with it, and this after discarding it on account of cracking.—STEPHEN CASTLE, *West Lynn*.

IN replying to my note upon this question, Mr. S. Castle does not dispute what I therein stated in my opinion was the cause of the berries cracking. He is evidently a firm believer that water at the root is the chief cause, although he cites two other things which have something to do with it—namely, no fire heat, and a stiff soil. The first is in connection with my case, and I may here remark that I do not quite understand him. Whether he means the absence of fire heat was the cause, or the putting it on again; perhaps he will make himself clear upon this point. What led me to give the reason I did was because nothing serious happened until the rain came and the moisture gathered densely upon the glass (although the house was ventilated), which is not so when the outside atmosphere is dry and clear. It may be that the lower temperature which accompanied the rain had something to do with it. Since writing my last note I am more fully convinced that water at the roots will not do any harm, and until experience teaches me differently I shall not be sparing with it.—R. M.

ORCHID NOMENCLATURE—WHAT IS KEW ABOUT?

"AN Orchid Grower" points out effectively on page 108 both the unscientific and unsystematic manner in which names are attached to new Orchids by introducers of them, this happy-go-lucky method, for it cannot be called anything else, being acknowledged by the Floral Committee of the Royal Horticultural Society, of which Mr. G. F. Wilson is, I think, the chairman. The most practical and sensible suggestion that, so far as I know, has yet been made for avoiding confusion in the nomenclature of plants is that made by your correspondent in the article referred to—namely, that "all introduced plants have Latin names, and all those raised in Britain, whether seedlings or sports, have popular names, except hybrids between recognised species, which should, where possible, have titles indicating their parentage." There is a natural and intelligible distinction in those divisions, and a distinct method of nomenclature would be appropriate. As a rule popular names are given to varieties of florists' flowers with the name of the raiser appended in parentheses; but this cannot well be done in the case of a newly introduced Orchid, because the possessor of it is not the raiser; yet it seems desirable that his name should be identified with it, as in the case of *Odontoglossum vexillarium* *Hollingtoni* and *Oncidium stelligerum* *Ernesti*, which names appear to be stamped with the seal of the Floral Committee, while Mr. Southgate and Mr. Hill's names were refused recognition in the latinised form in connection with their Orchids that were certificated. Such a loose method of procedure is indefensible, for if the Committee were right in refusing to latinise two of the names they were wrong in admitting the others, but in my opinion they did not show the best of judgment in their refusal.

The more I reflect on the subject of the nomenclature of plants the more I am impressed with the conviction that Kew does not take the position it ought to occupy in this matter. There, if anywhere on the face of the earth, ought to be the capacity for issuing descriptions and determining the names of plants that would be accepted as authoritative; but this is not so, for it seems necessary to send new Orchids to a foreign professor for this purpose. The authorities of our great national garden appear to be content to follow rather than to lead on the subject of Orchids. This cannot be for lack of resources, for not only is upwards of £20,000 of public money granted for the support of the establishment, including the payment of adequate salaries for skilled supervisors and assistants, but, if I recollect rightly, a special grant was made some years ago for the purchase of Dr. Lindley's Orchid Herbarium. That was obtained for a public purpose, but it seems difficult to perceive that its acquisition has been of marked public advantage. Dr. Lindley took a decided lead in the Orchid world, and Kew having obtained his material resources, ought to have continued his work. I am not writing in a mere grumbling spirit, nor with a desire to reflect in the least harshly on the scientific staff of the Royal Gardens, every member of which is a stranger to me; and I am quite willing to believe with "F. L. S." that Mr. Dyer is "earnestly desirous of popularising the establishment." He has a wide field before him, and it is desirable that Kew should have the sympathetic support and enjoy the confidence of the great horticultural community. We live in times when a full return is expected from the

outlay in all public departments. The national expenditure has become so enormous that it may be expected the time is not far distant when a searching inquiry will be made into all departments of the State, and disbursements will be balanced against results. A great economical "wave" will pass over the land one of these days, and retrenchment will become fashionable. Kew, let us hope, will be in a position to endure investigation, and will have won a host of supporters for the maintenance of the splendid establishment.

"F. L. S." refers to a subject on which I suspect there is a rather strong undercurrent of discontent—namely, the inadequate manner in which the work done at Kew is presented to the public. If the heads of departments were to prepare records of what is being done and what has been accomplished such an aggregation of information would be at hand that would form, say, quarterly reports of great value, and these being of a practical and scientific character would if sold at a cheap rate be readily purchased, and the cost of production would be defrayed; and, further, the editors of horticultural journals would be sure to make such extracts from the reports as would be of interest to their readers, and Kew would then be in direct touch with practically all the botanists and horticulturists in the kingdom. The officials as public servants, paid and pensioned by the State, certainly ought not to be permitted to sell their services over again and turn the resources of the establishment to their personal advantage, and if any such practice should become general it would afford parliamentary financial reformers an excellent opportunity for distinguishing themselves as "guardians of the nation's purse." The strength of Kew rests in its popularity, and the visible evidence of its usefulness to the inhabitants of Great Britain who contribute to its support and provide means for its efficiency. It appears to have lagged behind on the Orchid question; and generally, it may be said with "F. L. S.," that we "hear too little of what transpires in our national garden."—A TAXPAYER.

THOUGHTS ON CURRENT TOPICS.

MY "versatile" friend, Mr. Abbey, promises to keep me pretty well employed—or he would do if I dissected his sentences as laboriously as he dissects mine. His claim to attention as a lecturer on fruit trees and blossom-bud formation rests, he tells us, on practising for twenty years at an altitude of 500 feet above the sea, and another twenty years' plodding on low ground. Geographically speaking, it must be admitted he has had a fair share of ups and downs in his vocation, and it is perhaps only natural for him to think that I can have had no such experience. Yet not very long ago I was doing a little gardening at an altitude of 700 feet, and have also "plodded" about 6 feet below the tidal level of the ocean. That may possibly seem a rather peculiar position to work in, but the land was drained, and grows splendid fruit—drained, let me say, by pumping thousands of tons of water from hundreds of acres of land by steam power, and conveying it away in canals raised high above the general level of the ground. Mr. Abbey, therefore, does not stand quite alone in combating trifling difficulties and gaining experience under diverse circumstances. This is a little preamble, just to put myself on a level with him, to a few thoughts on his very remarkable article on page 110.

AFTER completing the perusal of that great production with the attention it deserved my comment was expressed in two words, "Truly Napoleonic." My analyst is evidently a believer in big battalions, hence he combats my few paragraphs on page 11 with, at a rough estimate, 4000 words. I have not counted them, but I believe anyone who may have time to do so will find they approach if they do not exceed that number. It is no joke to have a force like that hurled against one, but in this case it is consoling to find that more than half of them are confirmatory of my views as expressed on the page quoted, the lesser number antagonistic. It is a pleasure to me to agree with very much that Mr. Abbey writes, but there is generally something of mine from which he dissents. In consideration, then, of the information I have derived from his teachings I must endeavour to teach him a little lesson in turn, for it is evident his education on the formation of fruit buds is not "finished." It is very agreeable to observe that my ponderous opponent leaves the literary arena in the best of temper, enabling me to enter it in a similar frame of mind. Let us hope the spectacle will not be lost on fiery young disputants. In literary controversy the man who loses his temper in nine times out of ten loses his case.

THE subject at issue is the formation of fruit buds and ripe *versus* unripe wood, and a very important twin subject it is. In my former notes I alluded to a matter on which I suggested Mr. Abbey lacked experience. "Experience of what?" he asks. Experience of that in which he confesses his inexperience, I answer. He has informed us he never knew an instance of fruit buds changing after the leaves fall. I recorded an experiment, carefully conducted, for testing that matter, and this showed that even he had something to learn. He retorts that I did not operate on the trees myself; but what avails that? Neither of us invented the system of heating garden structures by hot water, but the fact of its operation remains the same. But if I did not "operate" on those particular trees, it is not within Mr. Abbey's knowledge that I have not operated on others to the same end. I think he ought to remember that fact. He has recorded a verdict on another matter, on negative evidence solely, and I shall have no difficulty in proving that verdict wrong. But to resume. He affects to surmise that I missed a year in recording that the trees replanted in November blossomed more profusely the following

April than others of the same kind, size, and age in the same row did that were not disturbed. I think I said what I meant on page 12, and am sure I meant what I said. For the special information of my incredulous opponent I may explain that "from November to the following April" means an interval of four months. I have nothing to alter or withdraw from that or any of the paragraphs on the pages quoted, for on a careful perusal of them I am convinced that everything there advanced is strictly accurate.

By far the most important sentence in those paragraphs is that in which the principle is embodied of a "fruit bud being an arrested wood bud and nothing else." Mr. Abbey "really cannot accept that definition." So be it: but I mean to stand by it all the same; and I have the satisfaction to feel that I may be the humble agent in educating him on a point of great interest and of considerable moment in vegetable physiology. After he has examined the economy of vegetation more closely he will, I believe, have to recognise what he fails to see now, otherwise he will occupy the conspicuous position of standing alone in opposition to most if not all the scientific pomologists in Europe.

I OBSERVE that some recorded observations of Dr. Hogg are cited as if against me. They are not in conflict with any opinions I have expressed, nor views that I hold, but, on the contrary, are in strict harmony with what I have written. What is more, and I ask for particular attention to the point, I venture to opine that what my respected opponent cannot recognise is the principle and foundation on which the Doctor's argument rests. Remove that foundation, and the pregnant sentence quoted on page 111 would lose its force. There may possibly be other readers who do not fully comprehend that a fruit bud is an arrested wood bud. Let them think out the subject well, and they will arrive at the conclusion indicated; and if they make that fact the basis of their practice they will see their way clearer as growers of fruit than they can possibly do otherwise.

I AM asked, "What arrests growth in Nature causing a cessation of extension?" I answer the question in one word—"age." There is no doubt about that, as thousands of young fruit trees prove after they pass the meridian of vigour. They first grow vigorously if in good soil, then less and less so until they bristle with fruit buds. My clever critic can play on the word metamorphosis as he likes, but there is the change from wood buds to fruit buds for all that, as the result of arrested growth; and if we arrest growth artificially the change is effected the sooner. I say it can be arrested in the autumn, and the change commences at once, though it may not be so apparent as by a check given in summer. The practical lesson derivable from the above scientific fact is this:—If the growth of your trees must be restricted to keep them within prescribed bounds cut the roots also, or you will have few blossom buds, but many wood buds. The check, the arresting of growth, causes the change. Let the check given be what may be termed violent, and the trees will make scarcely any growth, but practically all the buds will become blossom buds. Whether they are fertile or sterile obviously does not invalidate the change that undoubtedly takes place in the character of the buds.

I OUGHT not to overlook an observation or two in the great article that was intended to overwhelm me. In the last few lines of the sixth paragraph (page 111) the author says a practised eye can tell the character of "nine out of ten buds" when the leaves fall; if not, "the observer is good for nothing." Yet in the next paragraph he admits having observed that "many buds" which he "thought were wood buds" have "developed blossoms in spring." Does he still stand by his "good for nothing" verdict? If Mr. Abbey cannot accept the proposition, or rather fact, that he has practically admitted yet strongly controverted, he must accept the alternative and show what a fruit bud really is. I conclude for the present as I began, by repeating that a fruit bud is, in my opinion, "an arrested wood bud and nothing else."

In reference to the question of wood ripening, I desire it to be distinctly understood that I do not wish to arrange my thoughts in a form for confuting my critic. With very much that he has said I agree fully. I am also quite willing to admit that he is not very likely to make mistakes in pruning for a definite object. It is in the hope that others less experienced may form clearer conceptions on the subject that I entered on its discussion. The importance of "hard ripe wood" has been dinned into the ears of the multitude so loudly and persistently that hundreds of persons have prevented vastly more fruit forming on their trees than they have induced, and this by cutting back to "hard ripe wood." Waggonloads of the best and most fruitful portions have been removed from trees under the assumption that it was not "ripe." A good deal of wood that has not a hard and brown appearance is harder and riper than it looks. I have seen all the "hard" portions of Rose trees killed during extreme frost, the only parts surviving being the strong, green, and apparently "soft" growths which the orthodox gardener would call "unripe," and I remember Mr. Peach writing a forcible article on this phenomenon; and provided these growths are made in a position where the leaves develop under the direct influence of light, the strong green-looking growths in due time give the finest flowers. The great desideratum is stout perfect foliage. It cannot be perfect if crowded amid a mass of shoots to the exclusion of sun and air. Yet that is the condition under which millions of leaves on the lower parts of the shoots of crowded fruit trees struggle for existence. The wood is hard

enough there, but the leaves have assimilated and stored but little nutrient matter, because they were not in a condition to perform their functions. They were mere apologies for leaves, small, thin, and nearly useless. Those above them are better than they, and have done far more work, because they have had the prime essentials of their being—light and air—and the wood they have fed is better wood than the older and harder below. Yet the best is often ruthlessly cut off, because, forsooth, it is not "hard and ripe." I assert emphatically, not hastily, but as the result of much thought, observation, and at least some practice, that in instances innumerable the best bearing wood is cut off Vines, Apples, Pears, Plums, Gooseberries—in fact, from all kinds of fruit trees, and the worst is left. I have now given Mr. Abbey a splendid chance to display his reasoning powers in proving me wrong if he has a desire to do so.

DISBUDDING and thinning to prevent crowded branches is a golden rule in fruit tree management. If you want fruit buds at the base of shoots the leaves there must be perfect leaves, and to that end it may be necessary to suppress what is termed breastwood; but this is commonly done two months too late. June is better than August for that work; but where fruit is the main object, the form of trees of secondary importance, thinning early and sufficiently is more potent than all the shortening; for with the sun shining between the branches, and consequently on the leaves, fruit buds will form on nearly the whole length of the shoots, the part the most destitute of natural spurs being the lower, which is so "hard and ripe." These remarks apply to established trees in full growth, as young trees newly planted should be pruned rather severely.

If the wood, say, of Apple trees, when the shoots and branches are thinly disposed, will not ripen to the extremities, how are we to account for practically the whole of the crop of that beautiful Apple, the Cornish Gilliflower, being borne quite at the ends of the shoots? Cut these shoots back to hard ripe wood and you have no fruit; let them alone and you have a valuable crop. Plant an acre of that most useful market Apple, Small's Admirable, on the Paradise stock; let half of these trees be cut back to "hard ripe wood" systematically in the autumn, and the other half not "cut back" at all, but branches taken out if needed to prevent crowding; gather and sell all the fruit from the two half acres, keeping a separate account of the sums realised from each, and at the end of ten years note the difference. The amount, at a low estimate, will be three times greater from the naturally grown trees than from those artificially "assisted" with the knife. Perhaps it may be advisable to inform Mr. Abbey in advance that I am not reasoning from theory, but my remarks are founded on experience. I have no objection to growers of fruit pruning their trees who know how to prune, but the great majority do not know how to prune profitably; and I know just enough about the subject to enable me to state that if I were growing a few acres of Apples or Gooseberries for profit I would not allow any hard-and-ripe-wood fancier to mutilate my trees. It would pay me better to pay him a little annuity to keep his knife in his pocket. Growers who make the most money by fruit culture spend the least in payment of wages for pruning. If I continue much longer my critical friend will be retorting that I am a "big battalions" man; but my thoughts are directed to a great subject generally with the object of setting others thinking, and not specially to contravene his arguments; but anyone is welcome to have a dash at mine.

I MUST have another brief note on Asparagus. The subject introduced was plain enough at first, but is now nearly obscured by intellectual cobwebs so intertwined that they can neither be very well seen through nor brushed away. Oaks, Cabbages, and cotyledons have all got entangled together. Perhaps Mr. Abbey forgot that Asparagus does not produce a pair of cotyledons in germination, so I am not likely to cut below them, at any rate; but I have cut the small thin growths from beds in May and seen others spring up the stronger. And now I will upset the verdict he has thought fit to pass on me without waiting for evidence. As he gets older, or by the time he has had another twenty years' experience, he will perhaps find that I have a habit of keeping a few facts in reserve for contingencies. With comforting self-complacency he prides himself, and no doubt justly, on "results," while the practice of Mr. S. Castle and myself is "only extended to a few half rows," and our "results" are somewhat paradoxically in "perspective." I thought Mr. S. Castle founded his opinion on excellent results, and moreover invited anyone to inspect his Asparagus; as for myself, I must tell Mr. Abbey that for seven years I cut all the growths large and small from one bed, and one alone, till June, and it was because that bed proved so much better than the others from which the small growths were not cut at all, but only the large, that led me to make the further experiment to see more exactly how the improvement was brought about. The bed that was cut as first described gives the finest heads still, though I suspect it is as old as Mr. Abbey is; and I should only have expected a youngish man to have made such a blunder as he has perpetrated. It was really practice and results that led to the experiment that he has not tried, and not the experiment that was relied on to produce certain results. But while the verdict he hastily gave is obviously worthless, I do not suggest that he has not grown splendid Asparagus; and in all suitable soil wide planting on the level will result in better produce than close planting, and consequent overcrowding, on raised beds. But I had better pause, as I fear the subject must be getting tiresome, as also must—
A THINKER.



THE annual meeting of the ROYAL BOTANIC SOCIETY OF LONDON was held last week, Mr. J. P. Gassiot, Vice-President, in the chair. The report states that the total receipts for the year had been £6038 18s. as against £6487 17s. 10d. in the preceding year. Notwithstanding this falling off several improvements have been effected. A hardy fernery has been constructed, and a vane tower for the new sunshine-recording instruments had been erected. Special facilities had been afforded to Indian and Colonial visitors, and the number of students on the books amounted to 729, no less than 24,547 cut specimens having been supplied. A vote of thanks was accorded to the Duke of Teck, the President of the Society.

— MR. JUPP, gardener to G. W. Johnson, Esq., Waldronhurst, Croydon, desires us to state that he arranged a large group of plants at the Sutton and Cheam Show on the 11th inst. We hear that the group referred to was much admired by visitors to the Exhibition.

— RELATIVE to the late BOILER CONTEST AT LIVERPOOL, Mr. S. Deards and Mr. J. Witherspoon thank Mr. Bardney for his report. The former exhibitor thinks something more than a silver medal should be granted as the chief prize in a competition of this kind; and the latter evidently desires to have an opportunity of "fighting the battle over again" at no distant date; and further hopes that no exhibitors will interfere with the judges whilst engaged in their duties.

— "A SUBSCRIBER" writes as follows respecting COOL ORCHIDS:—"It would be a great boon if some information could be given to amateur Orchid growers on the question of treatment of certain plants which are said to be suitable for growing in a cool house, but which in the experience of many cultivators do not succeed so well under such treatment as in a warmer house. Take for example, *Coeogyne cristata*. Mr. Williams says in his latest edition that it makes its bulbs best in a cool house. Has this system been tried by any of your readers? *Oncidium concolor*, *O. crispum*, *O. curtum*, *O. dasystyle*, *O. excavatum*, *O. flexuosum*, *O. Forbesii*, *O. ornithorhynchum*, *O. Weltoni*, are all said to succeed best with cool treatment by Mr. Williams, Mr. Bull, and Messrs. Veitch in their respective catalogues, but our practice does not confirm this. Will some of your readers give us their experience?"

— MR. WM. RAPLEY, Bedford Hill House Gardens, Balham, sends us some flowers of a very fine strain of TUBEROUS BEGONIAS. The colours are varied, salmon, yellow, orange, scarlet, crimson, rose, and white; the flowers, both double and single, being of great substance and excellent form. The tints are particularly distinguished by their brightness and purity.

— TOBACCO CULTIVATION AS A FIELD CROP IN ENGLAND.—Messrs. James Carter & Co., Seed Farmers and Merchants, 237, and 8, High Holborn, write to us on this subject:—"We shall be greatly obliged if you will announce in your Journal that our acreage crop of Tobacco (growing within ten miles of London), in seventeen kinds, is now ready for inspection, and cards to view can be obtained without charge from us, with particulars of the locality in which it is being grown. We are also prepared to make special appointments to accompany anyone interested in the subject who may wish us to do so."

— MR. N. MOLYNEUX, who has been foreman at Swanmore Park, Bishops Waltham, for seven years, has been appointed gardener to C. Willock-Dawes, Esq., Burton Hill, Potworth.

— A TADCASTER correspondent writes as follows on SMALL FRUITS:—"We are having rather unsettled weather hereabouts just now, and have had for some few weeks; a quantity of soft fruits been much damaged thereby, Strawberries and Raspberries, of which a fair quantity are grown for market in this part, being, as a matter of course, the worst injured. I have never seen such an immense crop of Gooseberries in my thirty years' experience. They are scarcely worth picking and taking to market, I am told by several growers, they are so very cheap. Red Currants are an immense crop too. I may mention that a good dressing of

wood ashes or charred refuse applied in the early part of the winter round each tree—say, a good shovelful—is the best fertiliser I know of for Red Currants. I have proved this for years past by leaving part of the same row of trees undressed."

— JAPAN UMBRELLA PINE.—One of the largest specimens of the *SCIADOPITYS VERTICILLATA* in Europe is said to be a fine example growing in the garden of Max Daniel Wolterbeck, at Valkenburg, near Arnheim, in Holland. It was planted where it now stands, in a very exposed situation, twenty years ago, and it is a healthy and beautifully formed tree. Moreover, it has never suffered in the least from frost or other climatal influences. Of pyramidal shape, it is nearly 13 feet high, with a circumference of a little over 21 feet. Two years ago it bore for the first time two ripe cones, and the seed produced fifteen seedlings. Last summer it bore only one ripe cone.

— IN our report of the LEICESTER SHOW, on page 141, Mr. Burn, the Curator of the Abbey Park, was referred to as the originator of the exhibition, but his name was accidentally misprinted "Biron."

— AMONGST several good plants shown from the Royal Horticultural Society's Chiswick Gardens at South Kensington recently were some useful ASTERS IN POTS well grown, flowering profusely, and admirably adapted for decorative purposes. The most showy of these was a fine dark reddish crimson variety named "Rose Dark Scarlet," which has blooms of good substance, very full, and well formed. In contrast with that was a white variety of similar habit, and the two made some capital effective groups. The value of such plants in conservatories and green-houses now is considerable, for it is not always easy to get a variety of flowering plants for indoor display in August.

— THE Botanic Gardens and pleasure grounds in the ROYAL GARDENS, KEW, are this season in excellent condition, and bear an unusually fresh appearance for August. In hot dry summers the trees, shrubs, and herbaceous plants often suffer severely owing to the soil being shallow with a sandy or gravel subsoil, but this year, with the exception of a short period earlier in the season, they have not been tried very much. The herbaceous plant department is very attractive still, and the rockery, which is now so beautifully furnished, contains numbers of curious or beautiful plants. The Liliiums have succeeded extremely well and there are still many good specimens in flower, one of *Lilium Batemanæ* being very notable. It has seven heads of flowers, twelve to twenty each, of a clear orange salmon hue, and seldom is this handsome Lily seen in such satisfactory condition. *L. tigrinum*, *L. chalcedonicum*, and others are also flowering well.

— IT is seldom that ROSES IN AUGUST are as fine as they are this year, and some of the leading Rose-growers state they have been cutting blooms like the July Exhibition specimens in all points. At South Kensington last week there were nearly 1000 blooms shown by the two firms, Messrs. William Paul & Son, Waltham Cross, and Messrs. Paul & Son, Cheshunt, and although the Tuberous Begonias were so bright and handsome, the Roses had the largest share of admiration. There was a great number of varieties, but the Teas and Noisettes from Waltham Cross were delightfully fresh and beautiful.

— AN International Colonial, Mining, Engineering, and Industrial Exhibition is to be held at Newcastle-on-Tyne next year, and one of the departments will be devoted to AGRICULTURE, HORTICULTURE, AND ARBORICULTURE. This is divided into five classes—A, Agriculture; B, Horticulture and Arboriculture; C, Manure; D, Agricultural Implements; and E, Carts, Waggon, &c. The Exhibition will be under the patronage of the Duke of Northumberland, the President being the Right Hon. the Earl of Ravensworth, the Vice-Presidents and Committees comprising a large number of distinguished persons. The Exhibition will be opened on May 24th, 1887, and close in the autumn of that year.

— THE monthly meeting of BELGIAN HORTICULTURISTS was held in Ghent, August 10th, the following being present, MM. Cuvelier, Lemoinnier de Lille, Sosseel, B. Spae, Van Geort père, A. Peeters, Moens, Edm. Vervae, Desmet-Duvivier, Ch. Van Geert of Antwerp, Em. Decock, Arth. Desmet, and P. Blankaert; M. Kiekx presiding, and M. Jules Closon of Liège was Secretary. Certificates of merit were awarded for *Pothos nigricans* and *Labisia Malouana* from M. Liuden; *Begonia* Mad. Louis Desmet from M. Louis Desmet; *Pescatorea Lehmanni* from MM. Vervae & Co.; *Cienkowskia Kirki* from M. L. Van Houtte; and *Begonia* Arthur Malet from M. Godefroy-Lebenf of Argenteuil. Honourable

mention was accorded for *Miltonia Regnelli* from MM. Boelens frères; tuberos *Begonia*, *Le Flambeau*, from M. Arthur Desmet; *Cypripedium oenanthum* from M. Van Geert, père; *Caraguata Andreana* from MM. Jacob Makoy & Co.; and *Cypripedium Robelini* from MM. Vervae and Co. Cultural certificates were awarded for *Nepenthes intermedia*, *N. Morganæ*, *N. Mastersi*, *N. Henryana*, *N. Hookeriana*, *N. pardina*, and *Dracaena Regis* from M. Linden; *Araucaria excelsa glauca robusta* from M. B. Spae; and seedlings of *Begonia Rex* from M. Gust, Vandermeulen.

— AN American paper remarks that "Every part of the world has its special fancy, and in Brazil the *CALADIUM* is the chief delight of the gardener, and forms no mean feature in ornamental gardening. In the vicinity of Rio de Janeiro there are some who boast of having over a hundred varieties in their collections. We only know of these pretty plants by the few kinds we see in hothouses, or the large 'Elephant's Ear' or *Tanyan*, which grows in open grounds in summer, but this is enough to indicate how beautiful a large collection in tropical gardens must be."

— GARDENING APPOINTMENT.—Mr. James Swingle, late foreman at The Glebe, Champion Hill, has been appointed head gardener to W. H. Halford, Esq., Old Down House, Almondsbury, Gloucestershire.

— MR. JAMES DOIG The Gardens, Stourton Hall, Horncastle, Lincolnshire, writes on FROST IN AUGUST:—"On the 1st inst. this district was visited by very vivid lightning. There was no thunder nor rain, but the atmosphere was very oppressive. On the 4th inst. we had a slight frost. About the 7th or 8th inst. I noticed several young Ash trees Spruce, Lime, and Beech trees, and even Ivy presented a scorched appearance and dropped their leaves. Scarlet Runners were cut down in the neighbourhood within 2 feet of the ground. Will you kindly state if you have had any communication from other readers of your Journal who have had similar effects."—[We have not received any communication of the same purport.]

— THE following SUMMARY OF METEOROLOGICAL OBSERVATIONS AT HODSOCK PRIORY, WORKSOP, NOTTS, for July, 1886, has been sent to us by Mr. Joseph Mallender:—Mean temperature of the month, 60.2°; maximum on the 4th, 82.8°; minimum on the 10th, 41.3°. Maximum in sun on the 4th, 138.2°; minimum on the grass, 32.2°. Mean temperature of the air at 9 A.M., 62.4°. Mean temperature of the soil 1 foot deep, 60.1°. Total duration of sunshine in month, 160 hours, or 32 per cent. of possible duration. Total rainfall, 2.84 inches. Maximum fall in twenty-four hours on the 23rd 0.67 inch. Rain fell on seventeen days. There were three sunless days. Approximate averages for July:—Mean temperature 61.2°, rainfall 2.34 inches. The first week fine and warm, the rest of the month cool and showery.

CAMPANULAS.

AS is well known, the Campanulas have a very wide distribution. The are to be found wild in nearly every temperate country. Some of the alpine varieties are difficult to grow, but most of the other varieties are easily cultivated, and a choice selection should be in the possession of every hardy-plant lover, for they add greatly to the beauty of our flower garden.

That old-fashioned Canterbury Bell (*C. Medium*) is so well known that it needs but little description, for in nearly every cottage garden it is to be seen with single flowers, but in more modern collections double and semi-double varieties have been introduced; and whilst the old single strains chiefly comprised white and blue tints, in the modern ones we now have several shades of blue, pink, and purple, and, as a rule, the double and semi-double varieties are more compact than the single ones. They may be grown in pots as well as on the borders, for they make a beautiful show in the greenhouse or conservatory. If required for pot culture the plants may be lifted from the borders in May and then potted, to enable them to get established before the flowering period. April is the most suitable time to sow the seed, and it is advisable to sow it in boxes or pans, then place these in a cold frame. When large enough to handle they should be pricked off, taking care to keep well watered and shaded until rooted. They may then be safely left until the autumn, when they should be planted in their permanent places; but it is advisable to plant early in the autumn, so as to allow the plants to be well rooted before the winter; they will then flower the following summer.

C. GLOMERATA.—A very pretty Bellflower, varying in colour from pure white to a dark purple; though, as a rule, the white variety is not so common as the purple. It makes a fine addition to our herbaceous borders, being about 2 feet in height, very compact in habit, and flowering in June and July.

C. PYRAMIDALIS.—A strong-growing plant, sometimes attaining the

height of 4 feet. It is extremely pretty, and is well adapted for culture in pots, for it makes a splendid show in the conservatory, where its tall spikes of blue or white flowers contrast with Palms or Ferns. It also makes a fine show on the herbaceous borders; but it should be planted at the back, as it prefers a shady place. It usually flowers in July, but owing to the secondary floral branches developing their flowers gradually the flowering period extends to the end of September.

C. TURBINATA.—A dwarf compact-growing species. Its flowers are of a dark blue, about 2 inches across. It is very pretty, the flowers being in masses, and borne on single stems about 6 inches high. It may be grown on rockeries as well as the border. It flowers during the months of June and July; but if cut back in July a second flowering may be attained in the autumn.

C. PERSICIFOLIA.—A lovely species, with fine cup-shaped flowers, about 2 inches across, varying greatly in colour from shades of blue to white. It attains the height of 2 feet, and flowers during the months of July and August.

C. PERSICIFOLIA MAXIMA.—A variety of a much stronger habit, with double flowers varying in colour from white to blue. It is an admirable plant for the herbaceous border, and should be in every collection. The double white form makes a good plant for pot culture, its lovely white flowers showing off well in a conservatory.—C. C.

NATIONAL GOOSEBERRY SHOW.

THE following is a list of the prizewinners at the annual Show held in the Royal Botanical Gardens, Old Trafford, Manchester, on August 2nd. In the classes for dishes of twelve berries the prizetakers are placed in the order of merit.

DISHES OF TWELVE BERRIES.

Exhibitor.	Colour.	Name of Variety.
John Knowles.....	Red	Lord Derby
James Threlfall	"	Bobby
James Harvey.....	"	Speedwell
James Salisbury	"	Dr. Woolley
John Boot	"	Seedling Colliers Lane
E. Salisbury	Yellow	Ringer
James Harvey.....	"	Lady Haughton
James Salisbury	"	Leveller
James Bower	"	Garibaldi
Daniel Bower	"	High Sheriff
F. Cliff	Green	Surprise
James Salisbury	"	Stockwell
George Beckett	"	British Oak
James Threlfall	"	Telegraph
John Boot	"	Shiner
E. Salisbury	White	Careless
James Salisbury	"	Antagonist
George Beckett	"	Princess Royal
James Bower	"	Hero of the Nile
James Threlfall	"	Transparent

TWINS—TWO ON ONE STEM.

		dwt. grs.
John Knowles.....	Red	Lord Derby 39 19
James Salisbury	Yellow	Thatcher 41 10
John Fisher.....	Green	Surprise..... 35 12
William Riley.....	White	Antagonist 31 0

PREMIER PRIZE.

John Knowles.....	Red	Lord Derby 25 15
E. Salisbury	Yellow	Ringer 27 22
G. Beckett	Green	Shiner 22 12
F. Cliff	White	Antagonist 23 20

STEWARDS' PRIZE.

J. Salisbury	Red	Dr. Woolley 25 9
J. Harvey.....	Yellow	Garibaldi 23 14
R. Downs.....	Green	British Oak 22 12
J. Turkington.....	White	Princess Royal... 23 10
A. Tomkinson.....	Red	London 24 9
J. Threlfall	Yellow	Mount Pleasant. 22 9
J. Fisher	Green	Surprise..... 21 19
R. Parker.....	White	Postman 22 21
B. Cheadle	Red	Bobby..... 22 19
C. Leicester	Yellow	Lady Haughton. 20 20
J. Warburton	Green	Seedling, Bendigo 21 2
W. Riley	White	Overseer 21 15
J. Boot	Red	Colliers Lane 22 0
S. Birchenall	Green	Plunder 20 14

CLASS PRIZES.

RED.

E. Salisbury	Blucher	25 15
J. Salisbury	Lord Derby	25 6
F. Salisbury	London	24 16
A. Tomkinson.....	Rover.....	24 6
J. Salisbury	Bobby	23 15
G. Beckett	Macroni	22 16
J. Boot	Seedling, Colliers Lane. 22 3	
J. Knowles	Dr. Woolley	22 2
J. Knowles	Rough One	22 1
W. Riley	Eskender Bay	21 9
J. Fisher	Rough Red	21 6
C. Leicester.....	Falstaff	21 0

YELLOW.

E. Salsbury.....	Thatcher	26	4
R. Whitehurst	Ringer	26	2
J. Salsbury	Leveller.....	24	6
J. Knowles	Lady Haughton	22	18
E. Salsbury	Garibaldi	22	17
J. Threlfall	High Sheriff.....	22	4
J. Threlfall	Hit or Miss	22	3
J. Harvey.....	Wakeful.....	22	2
J. Bower	Mount Pleasant	22	0
A. Tomkinson.....	Drill	19	12
J. Fisher	Favonius.....	19	10
J. Harvey	Catherina	19	2

GREEN.

J. Threlfall	Stockwell	22	0
W. Riley	Shiner	21	12
E. Salsbury	British Oak	21	6
E. Salsbury	Hospool.....	21	22
F. Cliff	Surprise.....	21	5
J. Boot	Italy	20	15
F. Cliff	Sir G. Brown	19	9
B. Bradley	Green London	19	8
J. Threlfall	Telegraph	19	1
B. Bradley	Seedling.....	19	0
J. Harvey.....	South Johnny	17	17

WHITE.

J. Salsbury	Hero of the Nile.....	22	0
J. Threlfall	Transparent	20	13
G. Beckett	Fascination	20	8
J. Salsbury	Faithful	20	0
W. Riley	King of Trumps	19	1
J. Harvey.....	Postman	18	21
J. Threlfall	Succeed	18	20
J. Bower	Peto	17	8
S. Burchenall	Miss Chesters	17	6

—JAMES LEICESTER, *Secretary, Crompton Road Nurseries, Macclesfield.*

CUTTING ASPARAGUS.

Mr. ABBEY has undoubtedly been successful. I thank him for giving the results. Results to me mean quite as much as to Mr. Abbey with his larger quantities, and I am fully convinced I am on the way to success with my system.

Comparing my Asparagus with that of a large grower whom I supplied with plants from my own bed there is a great difference. Last year I cut mine both closer through the season and later than my friend; this year, while he has cut as usual, I have varied the cuttings as I have described, and if strength of growth now is any criterion I must be right. Having full faith in my cutting I have asked several to give it a trial. The loss of, say, two or three fine heads, even if they are the first, will be amply repaid before the season is over.

Being curious, I have looked into my day book, and find that in 1885 from my beds, the size of which was given in Journal, I cut and sold sixty-two bundles of long hundreds, 120 heads. I had no idea it was so much, not counting the sprue, which I broke off all through the summer. My present plan is more the result of accident than design, owing to the late frost of 1885 killing most of my first heads down to the ground. I noted that wherever a fine head or two had escaped the frost, by leaving these growing much better cuttings of finer "grass" was had all through the season. —STEPHEN CASTLE.

TUBEROUS BEGONIAS AT FOREST HILL.

DURING a period of several years Messrs. J. Laing & Co., Forest Hill, have made a speciality of Tuberous Begonias; and successful as this firm has been with other plants, nothing has done so much to render it widely known as the superb varieties of these Begonias that have been raised and sent out. A few years' close work and careful crossing produced a strain much in advance of what had been previously obtained, and cultivators gradually became aware of the decorative value of Tuberous Begonias in greenhouses and conservatories. Varieties of erect bushy habit were secured exactly adapted for pot culture, and which could be grown into specimens as handsome as those plants which take their place in the "stove and greenhouse" classes at exhibitions. Another type of drooping habit with gracefully pendent flowers was formed, which were seen to the best advantage in baskets, constituting grand ornaments in any house suspended from the roof. Then, turning attention in another direction, a race of "hedding Begonias" was developed that has become a most important addition to the plants employed for such a purpose. For some time it was thought very doubtful if such seemingly delicate plants would be suited for outdoor beds, but they have been thoroughly tested now in all parts of the kingdom from the extreme south to far north in Scotland, and they have invariably given satisfaction. Both in dry and wet seasons they seem equally happy, and for a late summer display they are unsurpassed.

An excellent idea can be gained of the utility of Tuberous Begonias as bedding plants by an inspection of those out of doors at Forest Hill now, and those who have not seen these plants together in large numbers can imagine the brilliancy of the effect produced. About 100,000 seedlings are grown, and nearly the whole of these have been planted out in beds 4 feet wide and of various lengths up to 100 feet or more. One portion of

the ground is devoted to double varieties of most diverse colours, and the blooms of excellent form, quite as good as many that a few years ago would have been regarded as great acquisitions and honoured with names and certificates. Scarlet, crimson, rose, yellow, and white are the principal colours, but there are many intermediate tints. Another portion of the nursery is occupied with the single varieties, of which a much greater number is grown, and as regards general effectiveness these are much the best for beds. There is a point of much importance, though, which requires attention, and that is in the planting, to so place the plants that they will flower in one direction. This can be readily determined by the growth, which turns more to one side than another, and the bed then presents an even appearance, the flowers being seen much better than when the plants are put out indiscriminately. It has also been hitherto generally the practice to make mixed beds of Tuberous Begonias, and this is a mistake if it is wished to see the plants at their best. Masses of one colour are far preferable, especially those of the Prince of Wales, a rich dark scarlet that would have a grand effect edged with a lighter-coloured variety or some other plant. At Forest Hill the beds are chiefly devoted to seedlings of one colour, and it is surprising how true they are to their respective tints, proving that they are becoming fixed. There are now a dozen selected colours of which unnamed seedlings can be supplied, from pure white to the darkest scarlet and crimson.

These plants were all raised from seed sown in January of the present year, the seedlings being grown in boxes under glass until June, when they were planted out in the beds. The soil is naturally rather heavy, but the only preparation they receive is a top-dressing of road grit, and the seedlings are placed in drills. The beds are raised about 6 inches above the general level, and hitherto the alleys between have been left clear, but this season they have been filled up, as it was found the outside plants suffered in dry weather. The plants are not, however, very fastidious, and no one need fear undertaking their culture in ordinary garden soil.

In these notes the numerous handsome named varieties in the houses have not been referred to, but a selection of them will be given on another occasion, when something may also be said about the large general collections of Orchids, Caladiums, fine-foliage and other plants included in this nursery.—VISITOR.

SMALL ROSE GROWERS.

"If you want a thing done well, do it yourself." As an amateur Rose grower and exhibitor for the past ten years, I am convinced that if you want first prizes do not trust to gardeners, but do it yourself. I always feel more at ease when fighting the gardener of my opponent than I do when fighting the master himself.

Can anyone exhibit in the forty-eights and thirty-sixes without employing a regular man to look after the Roses? Yes; I have exhibited in these classes for the last two or three years at most of the chief Rose shows, but allow no gardener to attend to my Rose plants. I employ a man for a few days in the year, as I suppose most Rose growers do, however small, to trench the ground and to help me plant and mulch. In the summer I get a boy for about a fortnight to weed and assist me in the watering. But all the budding, pruning, thinning, disbudding, shading, cutting, stuffing Rose boxes, and staging, warring against caterpillars, green fly, and mildew, I do myself together with my two sisters, and good hard work it is for the ladies.

No, Mr. Editor, the secret of success lies not in the number of gardeners a man keeps, but in the constant and careful attention given to the plants all the year round, loving them at Christmas as well as at midsummer, in the cold east winds of spring as well as in June and July; not only when the sun shines, but when it sleets and freezes.

Aspirants for fame, seek for pluck, not protection.—HORACE VERNET.

I DO not see at present that the grievance put forward by "A Small Rose-grower" and others is a legitimate one. What is a small Rose-grower? The two writers in last week's number seem to think he may be defined as an amateur not employing a regular gardener, but doing all, or nearly all, needful to his Roses himself. Would they be surprised to hear that some amateurs, nearly, if not quite, at the top of the tree, might come under this definition? I know two or three of this description, who, with no help perhaps but that of a "groom and gardener" (who would as soon think of touching Master's Roses without a special order as he would of horrowing his Sunday hat), are not afraid of the biggest nobleman's gardener with ten or twenty men under him, but will show cheerfully against him, and beat him too. How is it done? Why, simply by the real amateurs being specialists. The big gardener has hundreds of things he is expected to grow to perfection; the amateur rosarian has but one, and the whole year round his Roses are his one and special care.

But it happens that the amateurs I am thinking of are clergymen, and "A Lady Rosarian" seems to think it as much a grievance when she finds a prize ticket on "Rev. So-and-So's" box as she does when she sees it on that of "Mr. Blank, gardener to &c." More strange still, she adds, "such men"—i.e., clergymen as well as gentlemen's gardeners—"have the means if they so desire, to enlarge their beds almost *ad infinitum*, and are in a position to engage all the help necessary," &c. How many a "poor parson" rosarian on reading that must have wished it was true! No, Madam, the parson wins, not because of his gardener (the parson's man, perhaps his parish clerk, is often his only help), or because of his means (that is not even a joke nowadays), but because he is a specialist, a rosarian; his daily work, in which the best parson rosarians have earned deservedly good names, is generally not so much

tied to certain hours as that of other amateurs. He has nooks and corners of leisure, and he gives them to his Roses all the year round.

I am acquainted with a certain head gardener who years ago was accustomed to win for his mistress all the big prizes and cups for Roses for a long way round. A "jolly old chap." No other words would properly describe his good humoured face and the broad back which it is almost impossible to pass without a friendly slap. Well, it must be nearly ten years ago that he solemnly gave it as his opinion—not ill-humouredly, for it is not in him—that "those parsons were getting one too many for him." His opinion has proved correct; he is now generally content with an unchallenged second or third in the open class, but long may it be ere we miss his pleasant presence from our Rose shows.

A writer in the Journal a week or two since said truly that when he saw a middle-aged clergyman in the tent setting up a box with his daughters, he expected to find something difficult to beat. I can thoroughly endorse that, and expect Mr. Pemberton will continue to maintain, after "D., Deal," Reynolds Hole, and "Wyld Savage," the fame of the true amateur rosarian. And if "A Lady Rosarian" does not like to see prize tickets on the boxes of "Mr. Blank, gardener to &c., Swaggerfield Court," what would she think of that name and address with "gardener to" carefully omitted? This I have seen, not once or twice as by accident, but systematically done.

"A Thinker," not being a specialist, is tired of Roses, and wants to hear no more of them till next midsummer. The Journal has, however, long been the rosarians' recognised organ, and as I am sure that he has not heard the last of Roses and Rose exhibitions this year, may I ask what he would think of this last proceeding? I have said nothing of suburban Rose-growers. They are of course heavily handicapped. I do not know why those classes were given up, but suppose it was because they were so bad; and as to his general contention, I believe that "A Small Rose-grower" is mistaken, and that if he is beaten by the amateur plus his gardener he will find it a harder task still to vanquish the genuine amateur, who attends to his Roses himself.—W. R. RAILLEM.

IN reply to "A Lover of Roses," who asks for information on page 131, I am very willing to impart any knowledge in my power. The country (not county) show more particularly alluded to was the Hitchin Rose Society. Hitchin is thirty miles north of London, a first-class station on the Great Northern Railway, and frequent trains stop there. Other country shows I might mention in the same neighbourhood would be Bedford, which offers good open classes, open to amateurs only, for twenty-four or twelve blooms, and Tea Roses, with satisfactory prizes. Then there are St. Neots and the Sandy Show on the 27th of this month. The Show is a large affair, more for horticulture generally, and specially market gardening, being the centre of the Onion culture of Beds; but they offer nice though not large prizes for Roses, Dahlias, Asters, and other florists' flowers and fruits, which in the aggregate may make a plum worth picking up. They further engage the Guards' band. Again there is Sutton, in Surrey, a very growing Rose Society, and others whose advertisements may be met with in the Journal in May and June.

The question of the Rose-grower who does not employ a regular gardener is difficult, for what is an irregular gardener? He may be a first-class groom and coachman, who does the garden for love of it, and likes new Potatoes, Peas, and "Sparrow grass" for the servants' hall. He may be a farm labourer, who milks the cow, feeds the pigs, and lends a hand in the garden. He may be a jobbing gardener who comes in two days a week, equal in skill to Messrs. Paul's or Cranston's foreman, and does more in two days than some "regular" gardener does in a week, whose highest ambition is to grow and show the big Gooseberry of the season, and thinks no flower is equal to a "Cauliflower." No; from some little experience I think the safest protection for the "small grower" is having plenty of divisions and classes, with limitations, thus:—Exhibitors in Division A may not show in Division B, exhibitors in A and B may not show in C, and so on; and, further, exhibitors only to show in one class in any one division; and, lastly, a great deal must be left to the conscience of exhibitors—a frail reed—for to go back to our Latin Grammar, I fear in too many cases "Crescit amor nummi, quantum ipsa Rosa crescit,"—i.e., the desire for big prizes and many of them increases as Roses increase in size and numbers in rosaries. For this reason I advocate not too much in money, though most money-grubbers abhor cups and art trophies.

In my letter in the Journal I talked of going 100 miles; well, on July 20th I went 200 to Ulverston in Lancashire, and exhibited at the North Lonsdale Rose Society's Exhibition, open to all amateur subscribers throughout England; subscription, 2s. 6d. I was fortunate, and won 31s. in cash, minus subscription; enough to greatly cheapen my excursion to see Windermere Lake. I bethought me of taking the Rose Show en route, and I shall go again if well next year. A very pleasant journey. You leave Hitchin at 10 P.M., Euston at 12 (in a sleeping carriage), and arrive at 9.30 A.M. at Ulverstone, with a further proof that Roses cut and arranged in their box travel best by night, and stand best through the day at the show. A year or two ago I went to Darlington and took a prize there. One last word as to the Crystal Palace Show. We must remember it is a purely commercial affair; the company want to draw the largest amount of gate money, and offer large prizes to attract the best Rose-growers, nurserymen, or amateurs, big or little, to show Roses most likely to make the public stare and tell their friends to go and look.—F. H. G.

P.S.—Above all things, if "A Lover of Roses" join the National

Rose Society, and show at their London Show, never mind being beaten, "Non amo qui vincit, sed qui succumbere non vult."

NATIONAL CARNATION AND PICOTEE SOCIETY. (NORTHERN DIVISION).

A DELIGHTFUL Exhibition of Carnations and Picotees was provided at the Botanical Gardens, Old Trafford, Manchester, on August 14th. The Show was large and the quality good; some of the Todmorden flowers were superb. The exhibitors were numerous. Some new ones had put in appearance on this occasion, and some old ones who had not been seen for the past year or two returned to do battle with renewed energy and determination. On the whole it has been a generous season in the north, and the flowers, and especially the hizaras, beautifully coloured and finely developed. Mr. J. S. Hedderley, a veteran grower of Sneinton, Notts, who was showing three or four days at least too late, remarked that he scarcely ever remembered such a line of fine crimson bizarres as the winners in the class for single blooms; they were characterised by size, finish, and brilliancy. The Show was held on lines of tables in the large plant house. The day was gloriously fine. There was a good company, and though the flower beds were much disfigured by the storm of the previous day, the gardens were seen to the best advantage. As usual, Mr. Bruce Findlay afforded every facility to the Carnation and Picotee growers.

Two classes were open to all comers—one for twelve Carnations and one for twelve Picotees, dissimilar flowers. Four stands competed in each case, and Mr. Robert Lord, Hole Bottom, Todmorden (who was, unfortunately, unable to be present through illness), was first in each case, showing really superb and highly finished flowers. His twelve blooms of Carnations, read after the fashion of the florists from left to right along the lines, consisted of C.B. Master Fred (Hewitt), probably the highest-coloured C.B. in cultivation, and magnificently shown on this occasion; S.B. Mercury (Hextall), C.B. John Harland (Adams), S.B. Admiral Curzon (Easom), still a grand old flower; R.F. Sybil (Holmes), very fine; C.B. J. D. Hextall (Simonite), P.F. Squire Meynell (Brahmin), another fine old flower; P.P.B. William Skirving (Gorton), S.B. Edward Adams (Dodwell), S.F. Sportsman (Hedderley), a sport from S.B. Admiral Curzon, that has rarely if ever gone back to the original form; C.B. E. S. Dodwell (Hewitt), and R.F. Rob Roy (Gorton). Second, Mr. C. B. Simonite, Rough Bank, Sheffield, with an excellent lot, consisting of P.F. James Douglas (Simonite), finely shown throughout, but especially from this stand; S.B. Tom Power (Dodwell), R.F. Seedling, P.P.B. Seedling, C.B. Master Fred (Hewitt), P.F. Mayor of Nottingham (Taylor), C.B. Mrs. Gorton (Dodwell), S.F. Sportsman (Hedderley), P.P.B. Sarah Payne (Ward), a fine old flower that still holds its own among many new aspirants to fame; C.B. Seedling, R.F. Seedling, and S.B. Robert Lord (Dodwell). Third, Mr. Geo. Geggie, Waterloo Nursery, Bury. Fourth, Mr. F. Law, Carnation Gardens, Rochdale.

Mr. Lord's first prize stand of twelve Picotees consisted of H. Red E. Master Norman (Norman), L. Rose E. Favourite (Liddington), R. Red E. Thomas William (Flowdy), H. Scarlet E. Mrs. Sharp (Sharp), a new variety of great merit, having stout, large, and finely formed petals, and a broad edge of bright pale scarlet; H. P. E. Zerlina (Low), H. Rose E. Fanny Helen (Niven), L. P. E. Mary (Simonite), H. Red E. John Smith (Bower), H. Rose E. Mrs. Payne (Fellowes), L. P. E. Ann Lord (Lord), L. Rose E. Mrs. Aldcroft, and H. P. E. Muriel. Second, Mr. B. Simonite, with L. Rose E. Favourite (Liddington), H. Red E. Clara (Bower), H. Rose E. Lady Holmesdale (Schofield), H. Red E. Princess of Wales (Fellowes), L. P. E. Clara Penson (Willmer), H. Scarlet E. Mrs. Sharp (Sharp), L. Red E. Mrs. Gorton (Simonite), L. P. E. Ann Lord (Lord), H. Rose E. Seedling, L. P. E. Mary (Simonite), and H. P. E. Zerlina (Lord). Third Mr. George Geggie, fourth Mr. P. Law.

Then followed two classes respectively for twelve Carnations and twelve Picotees, nine at least to be dissimilar, to be competed for by growers of 500 pairs of plants or less. There were eight stands of twelve Carnations and seven of twelve Picotees. With twelve Carnations Mr. John Whitham, florist, Hebden Bridge, was first with C. A. Master Fred, two blooms, S. F. Henry Cannell (Dodwell), P. F. Geo. Melville (Dodwell), P. P. B. Sir Garnet Wolseley (Hewitt), P. F. James Douglas (Simonite), S. B. Edward Adams (Dodwell) two blooms, C. B. Thomas Antiss (Dodwell), C. B. E. S. Dodwell (Hewitt), C. B. J. D. Hextall (Simonite), and S. B. Admiral Curzon (Easom). Second Richard Gorton, Esq. (President), The Woodlands, Gildabrook, Eccles, with P. F. Geo. Melville (Dodwell), P. P. B. William Skirving (Gorton) two blooms, S. F. John Ball (Dodwell), P. P. B. Sarah Payne (Ward), C. B. Harrison Weir (Dodwell) two blooms, R. T. Sybil (Holmes), P. F. Squire Whithorn (Dodwell), S. F. Robert Morris (Dodwell), and two unnamed. Third Mr. E. Shaw, Moston, near Manchester. Fourth, Mr. W. Taylor, florist, Middleton, near Manchester. Mr. Whitham also had the best twelve Picotees, staging capital blooms of H. P. E. Zerlina (Lord), L. P. E. Clara Penson (Willmer), H. Rose E. Lady Holmesdale (Schofield), H. Red E. John Smith (Bower), L. Rose E. Miss Wood (Wood), H. Rose E. Edith Dombrain (Turner), L. P. E. Ann Lord (Lord), L. Red E. Thomas William (Flowdy), H. P. E. Mrs. A. Chancellor (Turner), L. P. E. Ann Lord (Lord), H. Red E. J. B. Bryant (Ingram), and H. P. E. Zerlina (Lord). Second Mr. E. Shaw, with H. P. E. Muriel (Hewitt), H. Scarlet E. Mrs. Rudd (Rudd), L. Rose E. Miss Wood (Wood), H. Red E. John Smith (Bower), H. Red E. Lord Valentia (Kirtland), L. P. E. Clara Penson (Willmer), H. P. E. Muriel (Hewitt), L. Rose E. Daisy (Dodwell), H. Rose E. Miss Horner (Lord), H. Red E. Mrs. Dodwell (Turner), L. Red E. Thomas William (Flowdy), and H. Rose E. Elise (Kirtland). Third R. Gorton, Esq. Fourth Mr. W. Taylor.

Next came two classes each of six Carnations and six Picotees, dissimilar, six prizes being offered in each, the competition open only to growers of 250 pairs or less. Eight stands competed in the first and ten in the second. With six Carnations S. Barlow, Esq., J.P., Stakehill House, Castleton, Manchester, was first with S.B. Robert Houlgrave (Barlow) a new variety of first-rate quality, bright and effective, and regarded as an improvement upon Admiral Curzon, S.F. Dan Godfrey (Holmes), R. F. John Keet (Whitehead), S.B. Admiral Curzon (Easom), P.F. Squire Meynell (Brahmin), and P.P.B. Sir Garnet Wolseley (Hewitt), a very good lot indeed. Second, Mr. Thomas Maddock, Lofthouse Hall Gardens, Wakefield, with S.B. Seedling,

R.F. Sybil (Holmes), C.B. J. D. Hextall (Simonite), P.P.B. Falconbridge (May), an old flower, sometimes shown in good form; S.B. Admiral Curzon (Easom), and S.F. Sportsman (Hedderley). Third, Mr. J. Bleackley, Prestwich, near Manchester. Fourth, Mr. S. Lord, Healing Hill, Rochdale. Fifth, Mr. William Bacon, Beckett's Mill Works, Derby. Sixth, Mr. W. Kitching. The best six Picotees came from Mr. Thompson Hilliwell, The Hollies, Todmorden, with H. Red E. Brunette (Kirtland), H. Rose Mrs. Lord (Lord), L.P.E. Clara Penson (Willmer), H.P.E. Alice (Lord), H. Rose E. Fanny Helen (Niven), and L. Rose Miss Wood (Wood). Second, Mr. J. P. Sharp, 326, Wheeler Street, Lozells, Birmingham, with H.P.E. Muriel (Hewitt), H. Rose E. Mrs. Sharp (Sharp), L.R.E. Thomas William (Flowdy), H. Rose E. Mrs. Payne (Fellowes), H. Scarlet E. Seedling, and H.P.E. Zerlina (Lord). Third, Mr. J. Bleackley. Fourth, S. Barlow, Esq. Fifth, Mr. J. Edwards. Sixth, Mr. J. Ramshill, Wakefield.

An extra class was provided for twelve Selves or Fancies, or both mixed, and here R. Gorton, Esq., was first with a fine lot of Selves unnamed. Second, Mr. F. Law, who had a nice stand of Selves and Fancies. Three stands competed, but two prizes only were awarded.

In the classes for single blooms of Carnations a large number of fine flowers were staged, averaging about forty blooms in each. The best S.B. was Admiral Curzon (Easom) from Mr. Robert Lord, and he was second with Fred (Dodwell); Mr. S. Barlow third and fifth with Robert Houlgrave; and Mr. R. Lord fourth with Master Stanley (Dodwell). The best C.B. was Master Fred (Hewitt), and it won all the prizes; Mr. R. Lord being first, second, third, and fifth; Mr. Reggie being fourth. The best P.P.B. was William Skirving (Gorton); Mr. B. Simonite being second with Mrs. Gorton (Dodwell), and third with William Skirving; Mr. J. P. Sharp fourth with Sarah Payne (Ward); and Mr. R. Lord fifth with Hewitt's E. S. Dodwell. The best Purple Flake was James Douglas (Simonite) shown by the raiser, Mr. B. Whitham being second with the same; Mr. T. Hilliwell being third with Dr. Foster (Foster); Mr. R. Lord fourth with Mayor of Nottingham (Taylor); Mr. Reggie fifth with James Douglas. The best S.F. was Clipper (Fletcher), shown by Mr. R. Lord; Mr. Reggie being second and third with Annihilator (Jackson), and fourth with Mr. Carter (Dodwell); Mr. R. Lord being fifth with Ivanhoe (Lord). The best R.F. was Sybil, Mr. S. Lord being both first and second with it; Mr. R. Lord being second and fifth; and Mr. T. Hilliwell fourth with the same variety.

Single blooms of Picotees were almost as numerous as those of Carnations, John Smith (Bower) was the best. H. Red E. Mr. R. Lord being first, second and third with it, and Mr. Reggie fourth and fifth with Henry (Matthews). In the L. Red class, Thomas William (Flowdy) took all the prizes, Mr. B. Simonite being first, and Mr. R. Lord second, third, fourth and fifth. The best H.P.E. was Zerlina (Lord), Mr. T. Law being first, second and third; Mr. Reggie fourth with Muriel (Hewitt); and Mr. T. Law fifth with Mrs. Niven (Niven). The best L.P.E. was Clara Penson (Willmer), Mr. T. Hilliwell being first; Mr. J. Whitham second; and Mr. E. Shaw third with this variety; Mr. R. Gorton was fourth and fifth with Ann Lord (Lord). Fanny Helen (Niven) was the best H. Rose E. shown by Mr. R. Lord; Mr. J. P. Sharp being second with Mrs. Sharp; and Mr. R. Lord fourth with the same. The latter was also third with Lady Louisa (Addis), and fifth with Edith D'Ombrian (Turner). Favourite (Liddington) took first, second, third and fourth prizes in the class for L. Rose Edges, Mr. R. Lord being first and second, and B. Simonite third and fourth; Mr. Lord coming in fifth with Mrs. Aldcroft.

The premier Carnation was C.B. Master Fred (Hewitt) shown by Mr. R. Lord in his first prize twelve in class A; and the premier Picotee Favourite (Liddington) Light Rose Edge, also shown by Mr. Lord, it being prominent in his first prize twelve in class B.

First-class certificates of merit were awarded to S. B. Robert Houlgrave (Barlow) shown by S. Barlow, Esq., and to H. Rose Edge Picotee Mrs. Sharp (Sharp), shown by Messrs. R. Lord, B. Simonite, and Mr. J. P. Sharpe.

Messrs. James Dickson & Sons, Upton Nurseries, Chester, sent, not for competition, bunches of Carnations, Picotees and Cloves, grown in the ordinary way without any protection, a terra-cotta-coloured seedling Self being distinct in character; also bunches of hardy perennials, including Gladiolus, Phloxes, Gaillardias, &c.

ROYAL HORTICULTURAL SOCIETY.

DISTRIBUTION OF PLANTS.

THE Council of the Royal Horticultural Society have had under consideration the means by which their experimental garden at Chiswick may be rendered of increased utility to the Fellows of the Society. In former years plants were distributed by ballot; but on investigation the Council found the result was not satisfactory, as rare and valuable plants frequently fell into the hands of those who had not the proper appliances for their cultivation.

After full consideration, the Council have determined, instead of ballotting for plants as hitherto, to allow Fellows to select for themselves any which, being the property of the Society, the Council are enabled to distribute. Every application for plants must be in writing, and not more than one specimen of any variety or species can be supplied. A list of plants prepared for distribution during the present season is herewith submitted, from which Fellows are requested to select those which they may desire to cultivate.

Four-guinea Fellows and forty-guinea life Fellows are entitled to select thirty plants from the accompanying list, and two-guinea Fellows and twenty-guinea life Fellows half that number. The list should be marked and signed by the Fellows and sent to the Superintendent, Royal Horticultural Society's Gardens, Chiswick, who will forward the plants marked, provided they are still in stock. Should any of the plants selected have been all distributed, others of a similar character may be substituted. The plants included in this list will be ready for distribution from the beginning of July until the 1st of October, and will be distributed in the order in which the applications are received.

PALMS

Areca lutescens	Corypha australis
Brahea filamentosa	Euterpe edulis
Chamærops humilis	Latania borbonica

FERNS AND MOSSES.

Adiantum cuneatum decorum farleyense hispidulum	Gymnogramma chrysophylla Peruviana Pteris argyrea cretica Ferns, various
Asplenium Fabianum	
Selaginella ascendens caulescens minor divaricata	Selaginella Kraussiana aurea stolonifera

STOVE AND GREENHOUSE PLANTS.

Agavea cælestis Aralia Sieboldi Asparagus plumosus Begonia (fine-foliated) Sylvia Louise Chretien Madame d'Halloy Madame Trigheaux Zenobia metallica Schmidtii semperflorens rosea splendens Calceolaria violacea Cala ium argyrites Camellias (seedling) Cestrum aurantiacum Chœnostoma hispidum Chrysanthemum frutescens Halleri Colus Dolly Varden Hebe Sunbeam Supreme Cyperus alternifolius Diplacus glutinosus	Dracenas (in variety) Eranthemum aureum reticulatum Fittonia argyrea Pearcei Francia ramosa Fuchsia Boliviana Gloxinias (seedlings) Habrothamnus elegans Newell Hebeclium ianthinum Impatiens Sultan Leonotis leonurus Medeola asparagoides Montbretia crocosmaeflora Pandanus utilis Passiflora cœrulea grandiflora Pelargoniums, Cape species, named French or Decorative named sorts Pitcairnia Jacksoni Salvia angustifolia Tropæolum (Colonel Clarke) Yucca Draconis undulata
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BEDDING PLANTS.

Alternanthera paronychioides aurea Begonia, tuberous-rooted (seedlings) Canna Ehmanni variegata Dahlias, single-flowered	Eucalyptus globulus Fuchsia gracilis variegata Riccartoni Iresine metallica
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HARDY PLANTS.

Alyssum spinosum Androsace lanuginosa Anemone japonica (Honcrine Jobert) Anthemis tinctoria Arenaria multicaulis Aster bicolor Chapmanni dumosus Ravennæ Aubrieta violacea Ruxus japonicus aureus Carnation Chiswick Red Cheiranthus alpinus Chelone barbata Convolvulus mauritanicus Dentzia consolida fl.-pl. Doronicum austriacum Erigeron uncinatum Erpetion reniforme Euonymus buxifolius japonicus aureus argenteus marginatus latifolius aureo marginatus	Fragaria indica Hedera conglomerata Hypericum oblongifolium patulum Iris pseudacorus variegatus Neja gracilis Peonies (herbaceous varieties, named) Phlox setacea atro-purpurea Primula elatior (Hose in-hose) rosca Pyrethrum roseum, single double Rudbeckia Newmanni Saxifraga ligulata nepalensis Veronica ligustifolia Lyalii species Traversi Viola Blue Jacket Hollyhock Robert Grigo Royal Visit
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A GARDENER'S FUNERAL.

NOTHING is more pleasing to us than to observe, as we not infrequently do, the cordial relations that exist between owners of ancestral estates and their gardeners and other dependents. The really great can afford to treat their servants with consideration and respect, and they do, as a rule, so treat those who serve them faithfully. The good feeling between master and man to which we refer must have existed in a marked degree between Sir Humphrey F. de Trafford, Bart., Trafford Park, Manchester, and his late gardener, Mr. William Sargeson. Though some weeks have elapsed since Mr. Sargeson died, no ordinary lapse of time would prevent us placing on record in this Journal the description of his funeral which we take from the *Eccles Advertiser* of July 3rd, 1886.

DEATH OF MR. SARGESON OF TRAFFORD PARK.

MR. WILLIAM SARGESON, who for forty-four years had been the head gardener at Trafford Park, expired at the Hall on June the 24th at the age of eighty. So highly was he esteemed that he was provided with every comfort, and two men were always at hand to wheel him about the Park and through the gardens which he loved so well. The funeral took place on Tuesday afternoon. The coffin was of beautifully polished oak with brass fittings, and had on it a brass plate, upon which was engraved

" WILLIAM SARGESON,
Died 24th June, 1886,
Aged 80 Years."

The coffin was enclosed in a patent sanitary metallic shell with a deodorising box inside. The coffin was placed upon a bier in the front entrance hall when Lady Annette de Trafford placed upon it the first and most beautiful wreath. Afterwards it was entirely covered with other wreaths, and many were suspended at the sides of the coffin. The wreaths were from—amongst others—the de Trafford family, Mrs. Rice, the servants at the Hall, the gardeners (an anchor and crown), Mrs. Ellis, Mrs. Bell, and Mrs. Barbier. As the coffin was removed from the Hall her ladyship and her daughter, Mary Annette, stood on one side of the Hall and the female servants on the other. Eight strong young men carried it out and placed it upon an open funeral car in front of the Hall. The cortege then moved towards St. Catherine's Church, Barton, in the following order:—

First Carriage.—Sir Humphrey Francis de Trafford, Bart., and Dr. Hepworth.

Second Carriage.—Mr. Ellis, Mr. Taylor, solicitor; and Mr. John Bowden, C.E., land agent.

Third Carriage (Dr. Hepworth's).—Father Sharrocks.
The open funeral car, drawn by four splendid horses.

Fourth Carriage.—Two nephews of deceased and the husband of deceased's niece.

Six other carriages containing personal friends and fellow servants of deceased.

The Rev. Samuel Dale, late incumbent of Christ Church, Patricroft—at which church deceased worshipped for many years—conducted the funeral service; and in addition to these already mentioned there were present at the funeral the Rev. A. E. Francis (Vicar of Barton), Monseigneur Kershaw, and the Rev. L. Shrieber. Sir H. F. de Trafford and Dr. Hepworth each carried a bouquet and strewed it upon the coffin when lowered into the grave. The churchyard, which is in a beautiful condition, was filled with a respectable concourse of people, numbers of whom had known the deceased many years.

Thus was the octogenarian gardener honoured and departed worth recognised by the representatives of one of the oldest and most widely esteemed of the county families of Lancashire, and we record the event in honour of both.

FLOORS CASTLE GARDENS.

"DEPRESSION!" that cry which resounds on every hand at the present time, has made itself felt at even such a princely place as Floors Castle, and economy is the order of the day, combined with the sale of a considerable portion of the produce of the gardens. Notwithstanding this, however, there is sufficient regard paid to purely ornamental work to preserve the beauty of the place in a wonderful way, and much credit must be given to Mr. McKellar.

Those of your readers who have not visited Floors have a treat in store for them. Kelso, a little town beautifully situated beside the Tweed, which here maintains its title to be called "fair river broad and deep," is of itself well worthy a visit because of its old Abbey and its interesting surroundings. Floors Castle is distant a little more than a mile from the town, and from the entrance-gate till the Castle is reached the visitor passes along a splendid approach with grand trees on every hand, and a wide expanse of richly wooded and highly cultivated country stretching far and wide on the left hand, with the silver Tweed flowing in the mid-distance. Nearly opposite the Castle and about a mile distant stands the ruined pile of old Roxburgh Castle, a place rich in historic interest, and whose stones, which they speak, would tell of stormy times and deadly struggles. In a fine park just in front of the Castle stands an old tree which marks the spot where King James II. was killed by the bursting of a cannon during the siege of Roxburgh Castle, which was then in the hands of the English. Arrived at the Castle, the visitor is at once struck with the large extent of ground which it covers, and the splendid view it commands. While very handsomely furnished the Castle is not so rich in rare pictures, statuary, cabinets, &c., as are many other mansions in the country.

At the end nearest the gardens there is a small Rose garden and a Camellia house—the former a blaze of colours, and the latter full of plants in fine condition. The houses at the gardens are too numerous to describe in detail. Suffice it to say that there is a splendid corridor full of noble specimens of Camellias and handsome shrubs and plants in flower, the walls beautifully decorated with Creepers, Ferns, Begonias, Mosses, &c., all growing in a delightfully natural style. The walk through this corridor being a winding one makes it appear much longer than it really is, and also causes one to get a fresh surprise at every turn, as every few yards something extra beautiful or especially interesting is disclosed. Entering from the corridor are seven or eight houses, span-roofed, and filled with plants, Vines, Figs, and Peaches. One house contained some very handsome Palms, all growing vigorously, and promising to be splendid specimens in a short time. Tuberous Begonias, Pelargoniums, and other flowering plants were displayed in another of the houses. The house where the Figs are grown was very fine; the trees were covered with a second crop. Mr. McKellar lately cut their roots off from communication with the outside border, built up the space below the foundation of the house, and now confines them to the inside border. The result is less rampant growth and abundant fruitfulness. Very good crops of Black Hamburg are to be seen in other houses in this range; also Madresfield Court, which does not crack here.

Leaving these houses and entering the kitchen garden we passed the gardener's house, a very comfortable one, and built so as to form an ornament to the gardens. We now beheld a number of hothouses, and entered a large lean-to Peach house in which Mr. McKellar replanted the trees not very long ago. They seem in the best of health. Next is a range of high, wide, and handsome lean-to vineries, the first one containing a capital crop of Lady Downe's, just beginning to colour, and giving promise of finishing well, the foliage splendid, the wood strong, and commencing to ripen. The next division is a Hamburg house, and all its crop was cut save two bunches. Judging from them, the finish and style of the crop must have been good. Muscats occupy another house, which is a very large one. Many fine bunches are to be seen, and all appear to be colouring well.

Orchids occupy five houses, and all are in the best of health, the foliage dark green and glossy, and all in a satisfactory state as regards cleanliness and neatness. The walls of the houses are most beautifully clothed with Maidenhair Ferns and Lycopods, the Adiantums growing in a state of luxuriance and beauty rarely seen in such situations. Other houses are filled with fine Crotons, Dracænas, Ferns, Eucharises, Gardenias, &c., all in the best possible condition. Stephanotis trained along wires in some of the stoves appeared in fine condition, free from bug, and covered with flowers. Other creepers, such as Dipladenias, share the good health that seems to distinguish every plant under Mr. McKellar's care.

Pot Vines are grown in grand style, some from eyes this spring are stronger by far than we ordinarily see "cut-backs" offered as fruiters

by the nurserymen. They were all beginning to ripen, too, and there need be little fear that they will not fruit freely next season. Two houses are filled with one Peach tree each, such grand specimens, and such healthy foliage—no trace of spider! The fruit had all been gathered, most of it being sent to market. The crop had been abundant. Other houses there are which are worthy of description, but space forbids. I would only say, Go and see what can be done by energy and ability, even when a reduced staff and a curtailed expenditure have to be faced, and also something of the nature of market gardening to be carried on. In spite of these disadvantages the flower garden is beautifully planted, the grass well kept, and in general an air of good management and well-directed energy displayed. The kitchen garden is large and well stocked, everything seeming to be in abundance and in prime condition.

Altogether Floors may be noted as a place well worth a visit, not only on account of the beauty of the surroundings and of the Castle grounds, but because of the cultural skill to be observed, the display of well-directed energy to be noted, and the kindly welcome to be received by all who go as followers or admirers of the art of gardening.

I may conclude with the hope that some day, not far distant, the sale of most of the produce of the gardens need not be carried on; that better times for landlords, better times for tenants, better times for gardeners, are coming. No gardener appears to me more worthy of every encouragement and every success than Mr. McKellar. Need I add that, like a sensible man, Mr. McKellar has chosen himself a sensible wife, who seems indeed a helpmeet?—A VISITOR.

OLD AND NEW ROSES.

A paper by Mr. Joseph H. Bourn, read before the Massachusetts Horticultural Society.]

THE Greeks adored this flower of the highest antiquity, and the Romans bestowed praises on its loveliness. Anacreon sang its primal birth; Homer extolled its gracefulness, and borrowed its brilliant colours to paint the glowing richness of the rising sun; Herodotus exulted over the sixty-petalled varieties which grew spontaneously in the gardens of Midas in Macedonia; Catullus vaunted its charms; and Horace admired "the richly tinted face, whose bloom is soon fled;" Virgil contrasts the pale sorrow with the blushing hues, and extols the Roses of Pæstum with their "double spring." Those costly ornamental gardens, destroyed almost ten centuries ago, no longer shed the morning fragrance of Rose perfume. Nettles and Brambles encumber the foot-path of the traveller, and, like a poetic memory of the past, the Cyclamen and the Violet now trail among the *débris* of the old city. Ausonius, writing at the very close of Latin literature, draws from the roseries of Pæstum a picture of "beauty doomed to premature decline," and tells of watching "the luxurious Rose heds, all dewy in the young light of the rising dawn-star." Roses bore away the palm from all flowers during the sovereignty of Augustus and subsequent rulers; but Cicero did not approve of the custom, introduced by those who were given to luxurious entertainments, of taking their meals reclining on Rose leaves. Verres, a Roman governor of Sicily, gave audiences wearing wreaths of Roses upon his head and around his neck, sitting upon a cushion made of the finest of Malta linen, full of sweet-scented Rose buds. Cleopatra and Nero extravagantly decorated their banqueting halls with rosy ornaments and garlands; and distinguished guests were greeted amid roseate bowers, while the merry dance went round in an atmosphere redolent with roseal odours. Every evidence exists that we must connect the Rose with the lore of antiquity; for the ancients preserved its luxury, and it was the ornament of their festivals, their altars, and their tombs; while their poets made it the symbol of innocence and modesty, of grace and beauty. It is probable that the Romans had Roses of similar species with some of those we now cultivate, since they practised sowing the seed, as well as propagating by cuttings, by grafting, and by budding. Hothouse growth was also understood and practised, says Seneca; and it was a boast to have carried this flower so far towards perfection as to surpass the cultivators of Alexandria, Memphis, and Rhodes. That the Rose never fatigues is shown by the reputation it has maintained through all the ages. Although a hundred generations have succeeded each other, it is still a queenly belle, notwithstanding it did not escape the devastation attendant on the revolution of empires, or the more desolating invasions of the Huns and the Goths.

But while we do not ignore an historical interest in the Rose, the subject of more practical inquiry is, What Roses can we successfully grow in our gardens? I answer, None but such as are planted under the conditions which the laws of Nature certainly require, followed by special watchfulness until the trees become well rooted and established in vigorous growth; and then intelligent study must be given to the varied habits and conditions of growth of each variety. The most popular, because the most useful Roses, are the Remontants, whose special beauty consists in the shell form of the large petals, softly recurring in their glistening freshness of colour; and for decorative purposes the varieties should be the free-flowering kinds, noted for elegance and brilliancy *en masse*, in preference to those possessed of great symmetry of form. The favourites of a generation ago—Madame Zoutman, Blanche-fleur, Chénédolé, and Paul Perras—are unsurpassed to-day in quality, hardiness, and fragrance combined; but the Remontants, on account of their freedom of bloom, are now regarded as the most important of the many groups of Roses cultivated. The modern classes of the Rose claim no less than twenty species as their progenitors; and from the proneness of Nature's offspring to assume new styles and shades arise individuals differing from their parents. To give a correct knowledge of the Rose now so popular, we must become acquainted with certain types in this group,—which gather

together many varieties whose excellent qualities are the result of artificial selection,—as to learn that there are peculiarities that pertain to families which have distinct attributes by which they may be distinguished from others.

In 1842 and 1843 rosarians were delighted with the Baron Prevost and La Reine, now regarded as the oldest types and most enduring and freest bloomers, favourite examples of which are Paul Neyron, Madame Boll, Anna de Diesbach, and Madame Nachury. In 1846 was introduced the Giant of Battles, rich in colour, but fleeting, of slight odour, subject to mildew, and difficult to propagate, and, on account of the poor constitution of these varieties the Prince Camille family have taken their place.

In 1852 the Général Jacqueminot appeared as a most valuable acquisition, and from its great popularity this family is now the most numerous of all. Its members are invariably of shades of red and crimson, moderately hardy, and generally highly perfumed. Leading examples are Marie Rady, Pierre Notting, and Marie Baumann.

In the same year originated the Victor Verdier, having numerous descendants, tender, and of slight fragrance, and yet a valuable collection on account of their free flowering, good illustrations of which are Mdlle. Eugénie Verdier, Etienne Levet, Countess of Oxford, and Captain Christy. Of all the families it is the best for forcing.

In 1853 the Jules Margottin was a surprise—almost odourless, and difficult to propagate from cuttings, but making very vigorous plants when budded. Some of our most popular and elegant Roses—Madame Gabriel Lnizet, John Hopper, Duchesse de Vallambrosa, Madame Lacharme, Magna Charta, and Rev. J. B. M. Camm—are of this family.

The flowers of most perfect form presented themselves in the Sénateur Vaisse type, like Madame Victor Verdier, Mrs. Laxton, and E. Y. Teas, followed by the Charles Lefebvre, of less vigorous habit; the Prince Camille group in 1861, magnificent in their dark velvety shades; prominent members of which are Monsieur Boncenne, La Rosière, Baron de Bonstettin, and Jean Liabaud, but shy bloomers in the autumn; the Alfred Colomb, elegant in form and colour, and odorous; the Duke of Edinburgh, beautiful when grown in a moist, cool climate, but fading under our hot sun; and lastly, the Baroness Rothschild, a superb Rose of extreme delicacy, with an exquisite foliage, and of great value to the florist for greenhouse culture.

There is a type recently introduced more valuable than any I have spoken of called "Hybrid Tea," of which La France was the original in 1869, of silvery rose colour, and having the combination of the Provence and Tea perfumes.

It is now regarded as a decided advance in the art of Rose culture to obtain new varieties which shall combine the hardiness of La Reine and Paul Neyron with the free-blooming qualities and fragrance of Bon Silene and Souvenir d'un Ami. In this class Nature has been relied upon to accomplish what we wish by sowing the seed promiscuously, producing some flowers that are Tea-scented, while others show the Tea blood in the foliage. Roses of this family, which are looked upon with much interest, and which have novelty and promise of usefulness, are the Duke and Duchess of Connaught, Cheshunt Hybrid, Viscountess Falmouth, Madame Alexander Bernaix, Madame Etienne Levet, Julius Finger, William Francis Bennett, and Lady Mary Fitzwilliam.

The Roses of the past have been the product of Nature unaided by human effort, while those of the present chiefly come from sowing the seeds of varieties which have not been crossed. The Roses of the future may and should be produced principally as the result of artificial fecundation and hybridisation. Our aim should be to control and assist Nature as far as possible in her tendency towards variation; and in order to obtain new sorts of marked individuality we should avoid crossing varieties too much alike.

Some physiologists are of opinion that in hybridising the offspring assumes the foliage and habits of the male, while the flowers are influenced more by the female. If this be so the head and hands may look for any result the mind may suggest; and at least we may conclude from the advance made within a brief period by the introduction of new groups that there is much which is desirable in the Rose that we do not already possess, but is yet to be obtained. While the botanist collects and examines the productions of Nature, and arranges them in classes and orders, which he again divides into genera and species, pointing out their properties and uses, the florist applies the art of culture with the view of fashioning them to his own taste. Since Nature's plants are all open to improvement the originating new and improved kinds by the product of a mixture of two different species is one of the most fascinating departments of the horticultural artist, who is moving continually amid ideal scenes, knowing what forms he wishes, but not what he will obtain.

(To be continued.)

PRIMULA RUSBYI, Greene.

WHATEVER may have been thought previous to the Primula conference taking place at South Kensington, there can be now at least no doubt of the popularity of these truly charming flowers, apart altogether from the political significance given to the queen of our native flowers, "The Primrose." The diversity of form, colour, and habit presented in the groups then shown left little to be desired and elicited no small admiration from those with only a passing knowledge of this important genus.

Primulas are with us from early spring until late autumn in some form or other, and in a few cases, notably that of *P. obconica* and *P. floribunda*, may be almost said to be incessant flowerers, the former, to our knowledge, having flowered at least two years without a single break in pots in a greenhouse temperature. So varied are they in their distribution, too, that there is hardly a position in rockery, bed, or border, from the sunniest to the most deeply shaded, but what will suit some species. During the present summer they have been flowering with us with almost as much vigour as in spring, many of those that did flower at the usual time being now in full blossom. This we believe is not uncommon, although we have not noticed it so marked as it is this year.

P. Rusbyi, of which a good representation is given in fig. 23, was introduced two years ago by Mr. T. S. Ware, Tottenham. It is one of the few American species of this genus, and nearly allied to *P. angustifolia* and *P. Cusickiana*, the latter at one time considered only a variety of *P. angustifolia*, but now regarded sufficiently distinct by Dr. Gray to rank as a species. *P. Rusbyi* is much larger than *P. Cusickiana*, the leaves being from 2 to 5 inches long, including the margined petiole. The blade is very thin, oblong, spatulate, and slightly denticulate. The flower stem rises from 6 inches to a foot in height, carrying a head of about a dozen flowers, and surrounded by an involucre of three oval bracts; the calyx tube white, and having the appearance of being farinose at the base, campanulate in shape, and often longer than the triangular teeth; the flowers are deep purple with a pretty yellow eye, and at their best measuring an inch or more in diameter, the tube exceeding the calyx. This species is undoubtedly one of the greatest acquisitions amongst our Primroses of late years, and one of comparatively easy cultivation provided the proper position be chosen. It thrives best in a shady moist situation in a stiff loamy soil; indeed, like *P. Parryi*, the colder and shadier the position the better the plant succeeds. In winter it is deciduous, dying to a bud, as in *P. sikkimensis*, and care should be taken that these be not disturbed or scratched by birds, &c. It is a native of the Mogollen Mountains, New Mexico, summit of Mount Wrightson, and the Santa Rita Mountains Arizona, flowering with us in late summer.—D. D.

HORTICULTURAL SHOWS.

CARDIFF.

THE twenty-third annual Show of the Glamorganshire Horticultural Society was held at Cardiff on August 11th. In previous years the Show has generally been arranged in an open field, but this one took place in the Sophia Gardens, which are very convenient to the town, beautifully situated on the banks of the river Taff, picturesquely wooded with trees and bushes, and admirably adapted for a charming Show, which this was in every respect. The exhibits were unprecedented in number, the quality was remarkably good, and the whole were arranged in twelve various sized tents. Those who have seen the whole of the shows provided by this excellent Society asserted that it was the finest Exhibition ever held at Cardiff. The Committee, as well as the Hon. Sec., Mr. A. B. Bassett, are to be congratulated on such excellent results. Assistant Secretary, Mr. J. G. Jones, also deserves a word of praise, especially when it is stated that he attends to booking all the entries, filling in the cards, and doing much work at the age of eighty-seven years.

PLANTS.—For twelve stove and greenhouse plants Mr. Cypher, Cheltenham, was deservedly placed first with large finely grown specimens of *Statice profusa*, *Ixora coccinea*, *Allamanda nobilis*, *Phenocoma prolifera*, *Bougainvillea glabra*, *Erica Irbyana*, *Stephanotis floribunda*, *Erica Thompsoni*, *Statice Holfordi*, *Dipladenia Brearleyana*, and *Erica retorta* major, a showy and attractive group. Mr. J. Mould was second, his best plants being *Allamanda nobilis*, *Erica Marnockiana*, *E. æmula*, and *Clerodendron Balfourianum*. Mr. Hemming, gardener to James Howell, Esq., Cardiff, was third with good plants, the *Eucharis amazonica* here being a magnificent plant, 6 feet through, with luxuriant foliage and a profusion of blooms. In the eight fine-foliaged plants it was a keen competition, James Howells, Esq., beating Mr. Cypher with superb specimens of *Encephalartos villosus*, *E. horrida*, *Croton pictus*, *C. majesticus*, *Lantana borbonica*, and *Cyathea dealbata*; Mr. Cypher's best plants were *Croton Johannis*, *C. Queen Victoria*, and *Kentia australis*.

The next class in the open section was for six Fuchsias, and the specimens which gained the first and second prizes were the finest we have ever seen in South Wales, Colonel Hill, Cardiff, being first with Charming, Rose of Castile, Beacon, Pink Perfection, Final, and Miss Lye. These plants were about 8 feet in height, 6 feet through, furnished from top to bottom with luxuriant and spotless foliage, and densely draped with rich blooms. Mr. Jonas Watson came second, and Mr. J. Hilliard third with good plants. Exotic and hardy Ferns were well shown by Mr. John Gunn, Cardiff; Mr. C. T. Walters, Sir George Walker, and Colonel Hill. Six pots of Zonal Pelargoniums terminated the first open section, and Messrs. J. Hilliard, C. Thompson, and Mrs. Steeds were the winners, with spreading finely bloomed specimens. In the plant section the first prize for six stove or greenhouse plants went to Mr. C. H. Williams with capital plants of *Stephanotis floribunda*, *Ixora Williamsi*, *Allamanda Hendersoni*, *Bougainvillea glabra*, *Clerodendron Balfourianum*, and *Dipladenia Brearleyana*. Mr. C. T. Wallace was second, his best specimens consisting of *Clerodendron Balfourianum* and *Allamanda Hendersoni*. Mr. Steeds was a creditable third. The class for six fine-foliaged plants produced excellent competition, Mr. John Gunn being first, Mr. Howell second, and Colonel Hill third. The Fuchsias

here were again grand, Colonel Hill winning easily, and Mr. C. Thompson came second. Mr. J. Gunn and Colonel Hill were the prizewinners in exotic Ferns, but half a dozen plants from Mr. E. Jenkins were superior to either of the above. Achimenes from Mrs. Steeds and Mr. W. D. Blessley were well grown, but not heavily bloomed. Coleuses were numerous, the best coming from Colonel Hill and Mr. T. Morel. Gloxinias were very fine, the plants being large and well bloomed. Balsams were not particularly good, but Tuberous Begonias were remarkably fine, Mr. Crossling, Penarth, being first with plants conspicuous for fine leaves and numerous large finely coloured blooms.

Cut Flowers.—These were shown very largely, and the majority of the stands were above the average in merit. In the open class Roses began the list, and for twelve named varieties, three blooms of each, Mr. Stephen Treseder, Ely Road Nurseries, Cardiff, was first with a capital stand, the blooms being of great substance, well coloured, and in prime condition. Mr. Crossling, Penarth, was a very close second; and in the leading Tea Rose class those two exhibitors again shared the honours in the same position, the majority of the blooms being excellent for this season. One

offered for dinner table decorations, and many competed. In the open class here, and for a dinner table 4 feet by 8 feet laid for eight persons, Mr. Phelps, Cardiff, was first, and Mr. Farrant, Swansea, second; but both were rather clumsy, and neither were convenient for the object in view, as, for instance, as a centre for the first-prize one there was a flower stand 2 feet high, and the solitary occupant of the crown of this was a Pine Apple, while it is well enough understood that fruit on a dinner table should never occupy such an exalted position. There was altogether too much of the fruiterers' shop about them, and in the other class for table decorations, which was confined to Glamorganshire and Monmouthshire, much more artistic results were produced. The first prize in the latter went to Mrs. H. Lewis, The Palace, Llandaff, and the second to Miss Waldron, both being prettily furnished and elegantly decorated. Mr. Cypher was, as usual, invincible with his vase of cut flowers; and in bouquets Mrs. Steeds, Miss Jenkins, Mrs. Bennet, and "Loadstone," the Lady Florist, Llanelly, were in advance of all others.

FRUIT.—We thought there was a mistake in the judging of the nine dishes, as Mr. Case, a Cardiff fruiterer, who was first, had black Grapes



Fig. 23.—PRIMULA RUSBYI.

matter should be mentioned here. The Roses and many other classes of cut flowers were not judged until 3.30 p.m., the Judges having retired for luncheon and a rest before completing their labours; and although this would no doubt be agreeable to those gentlemen, it is decidedly unfair to the competitors, as nothing is more deteriorating to cut Roses or cut flowers of any kind than keeping them in a tent for four or five hours before being judged: indeed, we would suggest that when any delay is likely to take place in judging, that the usual way of "following the list" be disregarded, and the cut flowers be judged first. Dahlias were uncommonly attractive, Messrs. Heath of Cheltenham winning first prize in the leading class with blooms of great merit. Mr. W. Treseder of Cardiff, who came second, also showed high-class flowers. Gladioli were not very numerous, but grand in quality; Mr. Moor, Coidriglan, Cardiff, being first, and Mr. Shaw second. Hollyhocks were scarce and poor, but Phloxes made a capital show; Mr. Pettigrew, Cardiff Castle, being first, and Mr. E. J. Coleman, Cardiff, second. The hottles in which many of them were shown were more varied than the Phloxes, and by no means attractive. Verbenas were very good, the Misses Rous being first, and Mr. J. Pile second. Carnations and Picotees were extremely fine, the best coming from Mr. B. Bennett and Mr. C. Waldron. Several excellent stands of Pansies were exhibited, and the boxes of cut flowers (blooms of stove plants excluded) were much admired, as they made a first-rate show, and Mr. Pettigrew won the first prize with a fine group; Mr. C. Thompson second, and Mr. J. S. Corbit third. Mr. Stephen Treseder, Cardiff, offered good prizes for twenty-four Rose blooms, and these were secured by Mr. Pettigrew and Major Treharne.

The decorative section was highly interesting, as good prizes were

very deficient in colour, while his white ones—or, more correctly speaking his green ones—were far from ripe. The Apples here, too, were not of high quality, and a dish of Gooseberries is not a telling one in nine dishes; whereas Mr. Hawkins, gardener to Major Turherville, Ewenny Priory, Bridgend, was particularly strong in ripe fruit, his Muscat of Alexandria and Madresfield Court being quite ripe and good, and his orchard-house Pears, Plums, Peaches, Nectarines, &c., were in prime condition. For three bunches of Muscat of Alexandria Mr. Silk, gardener to T. M. Franklen, Esq., St. Hilary, Cowbridge, was first, his bunches being large, well furnished, and of high quality. Mr. Hawkins was second with good fruits. In the any other white Grape class Mr. B. Thomas was first with very grand Buckland Sweetwater, and Mr. Silk was second with perfectly finished Foster's Seedling. This variety was well represented. In black Grapes the class for Hamburgs contained many samples, but none of them were really up to the mark in colour. The best came from Mr. James Howells and Mr. James Williams. In the three of any other black Grape class Mr. Hawkins was first with beautiful Madresfield Court, and Mr. Pettigrew second with Alicante fine in bunch and berry but not quite matured. The first prize for the best-flavoured Melon went to General Lee for Golden Gem, an extra first to Mr. Pettigrew, and second to Col. Hill. Melons (green-flesh), dish of two.—First Mr. Pettigrew with William Tillery. Melons (scarlet-flesh), dish of two.—First Mr. Pettigrew with Reid's Hybrid; second Lascells Carr, Esq., Cwrt-y-vil, Penarth. Melons (two), the most handsome.—First Mr. Pettigrew with Marquis of Bute. In Peaches and Nectarines Mr. Case and Mr. J. Muir, gardener to C. R. M. Talbot, Esq., M.P., Margam Park, Port Talbot, divided the prizes with showy fruit. In Apricots the Misses Rous

were first and Mr. Muir second. In Plums Mr. Muir first and Mr. Hawkins second. Apples and Pears were well shown by Colonel Page, Mr. Hawkins, and Mr. Pettigrew; pot Vines by Mr. T. Gibson; and orchard house trees by Mr. T. W. Jones and Col. Page.

VEGETABLES.—These were extremely good and numerous. For the collection of nine dishes there were thirteen competitors. Mr. J. Muir secured the first prize with a finely grown, clean, uniformly good collection, well staged. They comprised Cauliflower, Celery, Onions, Tomatoes, Kidney Beans, Potatoes, Cucumbers, and Pen-y-Byd Vegetable Marrow. Mr. Silk was second with a good collection, and Mr. Pettigrew was third with very meritorious produce. The majority of the small vegetable classes were well filled, the principal prizetakers being Mr. J. Muir, Mr. Silk, Mr. Moor, Mr. D. T. Alexander, Mr. Scott, and Mr. L. Carr.

The cottagers had a tent to themselves, and made a most interesting display of well-grown vegetables, the greatest prizewinners being Mr. Edward Ealey, Mr. J. Gibbons, Mr. D. Adams, Mr. D. Jones, Mr. T. Hopkins, and Mr. T. Nilson. Mr. William Treseder of Canton Road, Cardiff, exhibited a splendid box of Pompon Dahlias; Mr. Crossling showed some chaste wreaths; "Loadstone" of Llanely had a large stand of charming cut annuals and herbaceous flowers; and Messrs. Webb & Sons, Stourbridge, were conspicuous with many of their specialities.

TAUNTON.—AUGUST, 12TH.

THERE are many circumstances which combine to make this one of the most successful, if not the most important, of the autumn provincial exhibitions. In the first place it is most liberally supported by the town and neighbourhood of this charming county town: and their support is not of that nonchalant style which one sometimes meets with in other places. "Were you at the flower show yesterday?" is a question put perhaps to a gentleman who has subscribed his guinea to the annual flower show at Dunderburyville. "Upon my word," is the careless reply, "I didn't know there was a flower show;" or like what we are told of the late Liverpool Show of the Royal Horticultural Society, that many of the local people who were supplied with tickets never went near it. Not so at Taunton; the county gentry make a point of being there, and they either manage to get home, if away, for it, or else return in time for it and evince a lively interest in its welfare. This interest is shared in by all classes of the community; it is the fête day of the year. The numerous entries in the cottagers' classes attract a large number of that class, who of course want to see what neighbour Smith has done, and whether Brown's 'taters were better than his'n. And then there are other attractions. A first-rate band is always secured; this year it was that of the Grenadier Guards under the leadership of Mr. Dan Godfrey—a most attractive feature for all, especially the more cultured classes, while the grand display of fireworks in the evening affords a means of enjoyment which never seems to pall in the taste of the multitude in all countries, for they are as attractive to the Indian, or Italian, or German, as they are to us. All these things combined tend to make the chancellor of exchequer of the Taunton Show a happy man, and to enable the Committee to draw up a most liberal schedule, the first prize for twelve stove and greenhouse plants amounting to £20; and let people dream as they will about honour, glory, love of horticulture, &c., these things are all very well, but they don't pay expenses; and if you want to have a good exhibition you must have liberal prizes. Hence there is never any lack of exhibitors, for there are great inducements for them to come. Then, the Society has always been enabled to have an active Committee whose heart is in their work, and who have always managed to secure the services of excellent secretaries. I have seen many changes in the secretarial duty the many years I have "assisted" at this Show, but they have always been thoroughly good working ones. Their late Secretary, Mr. Samson, did much for the efficiency of the Show, and his successors, young men, are entering thoroughly into their work; and although this was the first year of their office the ease and smoothness with which everything went says a great deal for the amount of labour they have bestowed upon it, and it will be well for the Society if the services of Messrs. Maynard and Hammond are given to it for many years to come.

The exhibition this year was fully up to the average. I have seen, perhaps, in some points, better exhibits, but, on the other hand, things came out exceedingly well. I was partly disappointed at the exhibits of Gladioli (not, of course, including the magnificent stand set up by Mr. Kelway); but Mr. Dobree, who has always exhibited so well, was not present. On the other hand, Pelargoniums, always well shown here, were this year super-excellent, while too much praise cannot be given to the cottagers' productions of fruit and vegetables, the bee exhibition adding another feature of interest to the Show.

In the open classes there was a grand display of plants, both flowering and foliaged. The first prize for twelve stove and greenhouse plants was awarded to Mr. James Cypher for plants which bore out his well-established reputation as the first plantsman in England. His plants were *Dipladenia amabilis*, *Dipladenia hybrida*, *Allamanda Hendersoni*, *Allamanda nobilis*, *Ixora Fraseri*, *Ixora Duffi*, the finest plant of it perhaps ever exhibited; *Ixora Pilgrimi*, *Erica Marnockiana*, *Erica Irbyana*, *Erica ampullacea* Barnesi, *Phenocoma prolifera*, and *Statice profusa*. Mr. B. W. Cleave of Chard was second with excellent plants, and Mrs. Pearce of Southampton third. In class 2, for six stove and greenhouse plants, Mr. Cypher was again first with *Ixora coccinea*, *Erica ampullacea* Barnesi, *Rhododendron* Duchess of Connaught, very fine; *Hæmanthus magnifica* with fine heads of grand orange scarlet inflorescence; *Statice profusa*, and *Clerodendron Balfourianum*. In class 3, for eight fine foliaged and variegated plants, the places of the two champions were reversed. Mr. B. W. Cleave being first with fine plants of *Gleichenia speluncæ*, *Croton Warreni*, *Croton Williamsi*, *Latania borbonica*, *Cycas revoluta*, *Kentia Belmoreana*, *Encephalartos ampullacea villosa*. Mr. Cypher was second, his best plants being a grand plant of *Cordylina indivisa*, *Croton Prince of Wales*, and *Croton Johannis*. In class 4, for eight exotic Ferns, Mr. B. W. Cleave was again first with *Gleichenia rupestris glaucescens*, *Gleichenia Mendeli*, *Davallia polyantha*, *Davallia Mooreana*, *Davallia fijiensis*, *Marattia Cooperi*, very fine, and a Fern not often seen, and *Cyathea dealbata*. In class 5, for twelve Zonal Geraniums, for six blooms Mr. H. Godding was first with very finely bloomed plants of *White Vesuvius*, *Lord Gifford*, *Henri Jacoby*, *Pioneer*, Mrs. Headley, *De Lessops*, and Mr. H. Pollard; these were most profusely bloomed, and were far

superior to anything we ever are in the habit of seeing at our metropolitan shows. In class 6, for eight, the same exhibitor was first, the best were *Triomphe*, *fino*; Mrs. Blissard, and Earl Wellington. In class 7, for variegated leaved Pelargoniums, Mr. Ledbury was first with *Italia Unita*, *Lady Cullen*, *Silver Cloud*, *Victoria*, *Louisa Smith*, *Lass o' Gowrie*, *Queen of Queens*, and Mrs. Benyon. This is about the only place where one sees these once so highly prized and highly priced plants, and one marvels at the frenzy which once possessed people on the subject. In class 8, for four double Pelargoniums, Mr. Woodland was first with *Wonderful*, *J. V. Raspail*, *Rambler*, and Mrs. Steil. *Fuchsias* were not remarkable, being too stiffly grown; nor were *Cockscombs* (hateful things!) very good.

At the end of the tent Mr. Kelway exhibited a large stand of his very beautifully grown Gladioli. They comprised a few of the French varieties, but by far the greater number were his own seedlings, and of these there were selected for first-class certificates Dr. Farraut, a fine flower, somewhat in the style of *Murillo*; *Lady Salisbury*, white, with carise markings; and *Gabinus*, cream, with carmine spots and markings. Why is it that in the neighbourhood of such a grower as Mr. Kelway, and where flowers are cultivated with such zeal, this grand unsurpassable autumn flower is so little grown? Coming to *Roses*, which were well shown for the time of year, Mr. Mattock, of Headington, near Oxford, was first in forty-eights with *Belle Lyonnaise*, *Ulrich Brunner*, *Baroness Rothschild*, *M. Jean Pernet*, *Innocente Pirola*, *John Hopper*, *Charles Lefebvre*, *Paul Neyron*, *Dr. Hogg*, *Madame Hippolyte Jamain*, *Alfred Colomb*, *Princess of Wales*, *Richard Laxton*, *Madame Boll*, *Madame Victor Verdier*, *Dupuy Jamain*, *Comtesse de Serenye*, *Black Prince*, *Rubens*, *Devienne Lamy*, *Catherine Mermet*, *Seedling*, *Catherine Soupert*, *Maurice Bernardin*, *La France*, *Maréchal Niel*, *A. K. Williams*, *Madame Eugénie Verdier*, *Charles Darwin* in excellent form, *Annie Wood* very fine, *Mons. Verdier*, *Marie Van Houtte*, *Duchess of Bedford*, *Niphetos*, *Marie Baumann*, *Perle des Jardins*, *Marie Rady*, *Elie Morel*, *Pierre Notting*, *Comtesse de Nadaillac*, *Dr. Andry*, *Jean Ducher*, *Alfred Dumesnil*, *Lady M. Keith*, and *Louis Van Houtte*. *Dr. Budd* of Bath was second. In the class for twenty-four trebles *Dr. Budd* was first with *Dupuy Jamain*, *Baroness Rothschild*, *Charles Darwin*, *Duke of Wellington*, *Mrs. Laxton*, *François Michelon*, *Heinrich Schultheis*, *Charles Lefebvre*, *La France*, *Souvenir d'Elise Vardon*, *Louis Van Houtte*, *Princess Vera*, *Ferdinand de Lesseps*, *Francisca Kruger*, *Emily Hausberg*, *M. Benoit Comte*, *Star of Waltham*, *Rubens*, *Madame Margottin*, *Ulrich Brunner*, *Marie Verdier*, *Egeria*, *Caroline Kuster*, and *Marie Baumann*. Mr. Cooling was second, and Mr. Mattock, with an excellent stand, third; indeed it had been placed first, but unfortunately, owing to the fact of two trebles of the same *Rose* being staged by mistake, it was prevented from taking first. It included *Catherine Mermet*, *Alfred Colomb*, *Louis Van Houtte*, *Innocente Pirola*, *Marie Verdier*, *Madame de Watteville*, *Dupuy Jamain*, *Perle des Jardins*, *Souvenir de Mous. Pernet*, *Niphetos*, *A. K. Williams*, *Cornelia Koch*, *Maurice Bernardin*, *Duke of Connaught*, *Queen of Queens*, *Pierre Notting*, *Marie Van Houtte*, *Charles Darwin*, and *Souvenir d'un Ami*.

Dahlias were not extensively but well exhibited, Messrs. Keynes, Williams, & Co., of Salisbury, taking first in the three classes. In the class for twenty-four the named flowers were *Miss Cannell*, *James Vick*, *Crimson King*, *Mr. Gladstone*, *Illuminator*, *Victor*, *Defiance*, *Henry Walton*, *Mr. W. Stark*, *Constancy*, *Henry Bond*, *Royal Gem*, *Thomas Hobbs*, *J. T. Saltmarsh*, *Colonel W. P. Laird*, *Spitfire*, *Joseph Ashby*, *Cluster*, *Mrs. Amos*, *William Rawlings*, and *Mr. T. Foreman*. The remainder were seedlings. In the class for twelve Show varieties several of the same flowers appeared. They were all well built and fresh.

In the class for twelve fancy Dahlias Messrs. Keynes, Williams and Co. were again first with *Rev. J. B. M. Camm*, *John Forbes*, *Madame Soubeyre*, *Rebecca*, *Gaiety*, *James M'Intosh*, *Prospero*, *Miss L. Saye*, *Chorister*, *James O'Brien*, and *Miss A. Melsom*. The second prizes in these classes were taken by Mr. Joseph Nation, both good, but rather too advanced blooms. Near to these stands was an enormous bloom of the fancy variety *Gaiety*, exhibited by the Salisbury firm; I did not take its measurement, but it seemed to be fully 8 inches across, and at the same time good in form. There was a large display of cut *Asters*, *Hollyhocks*, and *Verbenas*, but there was nothing very remarkable, while as to the Gladioli the less said the better.

The tent No. 2, which is confined to amateurs, is in some respects a repetition of No. 1; we find there many of the same exhibitors, who have probably put forth their strength in the "open" tent, while others appear who seem rather afraid to venture upon a trial of strength with the giants. Facing the visitor as he entered was a very pretty and excellent group of plants contributed by Mr. Robert Veitch, Exeter; in this were to be found many new productions of interest to all lovers of horticulture.

In the class for twelve stove and greenhouse plants flowering or foliaged Mrs. Pearce was first with *Eucharis amazonica*, *Statice profusa*, *Brugmansia glabra*, *Cycas revoluta*, *Croton Williamsi*, *Phyllotanium Lindenii*, *Areca Veitchii*, and *Cordylina indivisa*. In the class for six stove and greenhouse plants Mr. Wilfred Marshall was first, his best plants being *Rondeletia speciosa* and *Vinca rosea*. In class 33, for stove or greenhouse plants in flower, Mr. Pearce was again first with good plants of *Erica Aitoniana* Turnbulli, *Phenocoma prolifera*, *a Clerodendron*, and *Erica obhata purpurea*. In the class for exotic Ferns Mr. Cleave had fine examples of *Gleichenia rupestris glaucescens*, *Adiantum cardiolanum*, *Adiantum formosum*, *Adiantum trapeziforme*. Mr. Wilfred G. Marshall exhibited five very grand plants of *Coleus Harry Veitch*, *Mrs. George Simpson*, *Mr. Baxter*, *Constance*, *Pompador*, and *Exquisite*, exceedingly well grown and very ornamental. In the class for hardy Ferns Mr. Cleave was first with *Scolopendrium vulgare crispum*, *Athyrium Felix-femina plumosum*, *Lastrea Filix-mas crispata*, *Polypodium cambricum*, *Polystichum angulare Wollastoni*, *Polystichum angulare*, *Scolopendrium vulgare Kelwayi*. Mr. Pearce was second. *Selaginellas* and *Achimenes* are always well shown at Taunton. In the former Mr. Cleave was first with fine paus; and in the latter Mr. Wilfred Marshall had good plants of *Mauve Perfection*, *Dido*, *Magnifica*, and others.

Out flowers were quite equal to and in some cases superior to those in the open classes. In *Roses* *Dr. Budd* was first in twenty-fours and twelves, and Mr. Narroay first in twelve Teas. The principal flowers shown were *Comte de Raimbaud*, *La France*, *Alfred Colomb*, *Egeria*, *Charles Lefebvre*, *François*

Michelon, Ulrich Brunner, Madame Hippolyte Jamain, Emily Hansberg, Duchess of Bedford, A. K. Williams, Etoile de Lyon, Duke of Connaught, Catherine Mermet, Benoit Comte, Baroness Rothschild, Star of Waltham, Anna Ollivier, Lord Bacon, Comtesse de Serenyi, Marie Verdier, Heinrich Schultheis, and Duke of Edinburgh.

The table-decoration set up by Miss Cypher displayed her usual excellent taste, and although the centre vase was too high for the present fashion, yet no one could fail to admire the elegance of the arrangement. It is a pity that with such an example the Taunton ladies do not try their hand at it. Her bouquets and stands were also excellent, and here she had evidently succeeded in fostering a better style of bouquet than what one generally sees.

I have thus endeavoured to give a faint outline of this excellent Show. The fruit and vegetable and cottagers' tents, and the bee tent, I must leave to others. I have attempted to show what great variety and merit there is to be seen at this west country Show, and when I contrast with it what is done in the east of England, one must give the palm for spirit and taste to the "west country."—D., Deal.

FRUIT AND VEGETABLES.—There were two large tents devoted to these, and a grand lot of stuff was brought together, the competition in every instance being close and good. Three collections of ten dishes of fruit were staged, Mr. Iggulden, gardener to the Earl of Cork, Marston House, Frome, being a good first with a collection very similar to that he had at Weston-super-Mare two days previously, the two extra dishes consisting of good Black Tartarian Cherries and Jargonelle Pears. Mr. Ward, gardener to the Earl of Radnor, Longford Castle, Salisbury, took the second prize for a generally creditable collection, which included a very fine Hero of Lockinge Melon, Madresfield Court and Muscat of Alexandria Grapes, and Green Gages. Mr. Crossman, gardener to J. Brutton, Esq., Yeovil, obtained the third prize for an even and good collection. In the class for eight dishes, the first prize went to Mr. J. Lloyd, gardener to Vincent Stuckey, Esq., Langport, who had good Mrs. Pince and Foster's Seedling Grapes, Defiance Melon, Violette Hâtive Peaches, Oldenburg Nectarines, Moor Park Apricots, and Morellos, the whole forming a very pretty collection. Mr. Crossman followed closely, his collection including a fine dish of Waterloo Peach, Pine Apple Nectarines, and Madresfield Court Grapes. The best collection of four dishes was staged by Mr. Daffurn, gardener to Mrs. Walker, Weston-super-Mare, these consisting of good Madresfield Court Grapes, very handsome Grosse Mignonne Peaches and Elruge Nectarines, and Blenheim Orange Melon. Mr. Iggulden was a good second, and Mr. T. W. Sansom third, and there were two other creditable lots shown. Mr. Brooks received first prize for two medium-sized fruit of Enfield Queen Pine Apple, the others shown being very indifferent. Mr. Ward was first for Muscat of Alexandria Grapes, staging small bunches with fine berries fairly well coloured, Mr. W. R. Waite being second, and Mr. J. Lloyd third. For any other white variety Mr. J. Westcott was first, having fairly good examples of Duke of Buccleuch; Mr. J. Lloyd was a good second with well-coloured bunches of Foster's Seedling, and Mr. J. C. Clarke, gardener to C. E. Esdaile, Esq., Cothelstone, was third with unripe and not very clean Buckland Sweetwater. Mr. Iggulden was first for Black Hamburg in fairly good condition, Mr. W. R. Waite taking second, and Mr. A. Crossman the third prize. Mr. Daffurn took first prize in the class for any other black variety with good Madresfield Court, the second prize going to Mr. Crossman for rather rough bunches of Alicante, Mr. Lloyd taking third prize for neat examples of Madresfield Court. There was a good lot of Melons in competition, Mr. T. Paull being first with Hero of Lockinge, and Mr. Crossman second with a handsome fruit of Victory of Bath. Mr. Daffurn was first in the class for Peaches, staging a very handsome dish, Mr. Iggulden following with the same variety. Mr. Daffurn was also first for Nectarines, staging very pretty Elruge, and Mr. Lloyd followed with fine fruit of Oldenburg. Mr. J. Huxtable was first with Apricots, and Mr. J. Newcombe second, both staging fine fruit of Moor Park. Mr. Tidbury had the best dish of dessert Apples—variety, Red Astrachan—and the same exhibitor was first for Jargonelle Pears. Cherries, Plums, Gooseberries, and Currants were also extensively exhibited.

Very fine collections of vegetables were in competition, but many of those preferred by the Judges were much too coarse, and in many cases ought to have been passed over in favour of better selected samples, this being especially the case with Potatoes. The first prize for a collection of ten dishes of vegetables was awarded to Mr. H. Moore, who had very large Red Globe Turnips, Champion Runner Beans, Nuneham Park Onions, Telegraph Peas, Sutton's Intermediate Peas, Reading Perfection Tomatoes, Purple Globe Artichokes, Tender and True Cucumbers, and International Kidney Potatoes. Mr. T. M. Guest was a good second, and an extra prize was awarded to Mr. Carvill, gardener to H. T. Manley, Esq. Mr. Guest had remarkably fine Grove White Celery both in the collection and for a single dish, fully deserved the first prize awarded for the latter. Mr. H. Moore was also first for six varieties of vegetables, and Mr. Carvill second. Mr. C. Vile received first prize for six varieties of Potatoes, but these were certainly inferior to the second prize collection staged by Mr. W. Greedy, and there were several other much better selected collections. Mr. F. J. C. Parsons was first for a basket of salad and also Cucumbers; and other successful exhibitors of vegetables were Messrs. Tylee, J. Ricks, W. B. Kellard, R. H. Poynter, and Captain Winter. A wonderfully fine lot of vegetables generally were also staged in the cottagers' tent.

WESTON-SUPER-MARE.—AUGUST 10TH.

THERE are few better "all round" displays than those annually collected on the Grove and Rectory field at Weston-super-Mare, and there are no signs of any falling off either in the number and quality of exhibits or in the attendance of appreciative visitors. On the contrary, the Show under notice was one of the best yet held, and although the morning was wet and miserable the weather improved sufficiently to admit of several thousands of visitors enjoying the Exhibition. Mr. F. T. Perritt is the Secretary, and this gentleman with the assistance of an active Committee arranged everything in good style—much better, in fact, than older societies in the neighbourhood.

Four prizes ranging from fifteen guineas to three guineas were offered for twelve stove and greenhouse plants, to include at least four fine-foliaged, and on this occasion Mr. J. Cypher, Cheltenham, succeeded in defeating his

formidable rival Mr. J. Lock, gardener to B. W. Cleave, Esq., Crediton; the third prize going to Mr. E. Wills, gardener to Mrs. Pearce, Southampton, and the fourth to Mr. Dobson, Bristol. Mr. Cypher had a grandly flowered Ixora Duffi (the finest of all the Ixoras), and perfect specimens of Phaeocomma prolifera Barnesi, Allamanda Hendersoni, Statice profusa, Ixora Fraseri, and Ericas Iveryana, Marnockiana, as well as large and beautifully coloured specimens of Crotons Sunset and Prince of Wales; a good Cordyline indivisa, and Cycas circinalis. Mr. Lock was a little behind with flowering plants, his best being Dipladenia amabilis, Eucharis amazonica, Ixora coccinea, and Allamanda Hendersoni; and the best fine-foliaged plants were immense specimens of Latania borbonica and Croton Williamsi. Mr. Wills had a creditable lot of plants, including several good Ericas. The last named was placed first for six flowering plants, having Erica Aitoniana, E. obbata purpurea, E. Marnockiana, Stephanotis floribunda, Clerodendron Balfourianum, and Statice profusa in good condition. Mr. Cypher was a close second, his collection including well flowered specimens of Dipladenia hybrida, Allamanda nobilis, and Erica ampullacea Barnesi. With four varieties Mr. W. Hughes, gardener to H. Pethick, Esq., was first; Mr. C. Holland, gardener to W. Ash, Esq., second; and Mr. W. Lewis, gardener to E. J. Cole, Esq., third, all of Weston-super-Mare, and their exhibits were highly creditable. Mr. Hughes was also first for a single flowering plant, staging a well-bloomed Statice profusa, and Mr. Lock was second with Erica tricolor Wilsoni.

Fine-foliage plants were very well shown by several exhibitors, Mr. Lock easily securing first prize for six varieties, these consisting of handsome specimens of Croton Jobannis, C. Weismannii, Areca lutescens, Dasylirion acrotrichum, Kentia Belmoreana, and Cycas revoluta. Mr. Cypher was second, and Mr. Wills third, both having fine healthy plants of well-known kinds. Mr. C. Holland was first for four varieties, and W. Lewis second, and for a single plant Mr. Lock won with a fine Kentia Fosteriana; second, Mr. Hughes, who had a good Anthurium crystallinum. Mr. Lock took the lead with exotic Ferns, his collection including very fine examples of Gleichenia rupestris glaucescens, Cyathea dealbata, and Davallia polyantha. Mr. W. Lewis was second, and Mr. J. P. Cassell, Weston-super-Mare, third. With six varieties Mr. E. Wills was easily first, and Mr. W. J. Brooks, Weston-super-Mare, second. Adiantums are always well shown by several local exhibitors. Mr. Holland was a good first for six varieties, and Mr. J. Lovelace, gardener to Sydney Hill, Esq., second; while the prizewinners with four varieties were Messrs. Hughes and E. Wills. Mr. Lock had a fine lot of hardy Ferns, and was placed first, the second prize going to Mr. W. Lewis, and the third to Mr. W. Brooks, each having highly creditable collections. Mr. Lock was also first for Lycopods; Mr. Matthews, gardener to T. Kuytton, Esq., Uphill Castle, second, and Mr. Wills third.

Mr. W. Brooks had the best six Fuchsias, the second prize going to Mr. J. P. Cassell; and other successful exhibitors in the other Fuchsia classes were Messrs. T. R. Vickary, jun., and W. Lewis. There were several classes for Zonal and other Pelargoniums, all being well filled. Messrs. Lewis, W. Adams, gardener to W. Smith, Esq., W. Brooks, E. R. Vickary, and W. Hughes were the principal prizewinners. Mr. C. Holland had the best coloured Coleus, and was first for six varieties, Mr. Brooks taking second place for much larger but badly coloured examples. Mr. W. Adams was first for four Coleus, and Mr. W. Brown, gardener to the Rev. W. W. Aldridge, second. Cockscombs were well shown by Messrs. J. Reed, gardener to F. J. C. Parsons, Esq., and W. Adams; Liliums by Messrs. G. Thatcher, gardener to A. G. Andrews, Esq., H. B. Farrington, and W. Brooks; Gloxinias by C. Holland, J. C. Cox, and W. Smith; Begonias by Messrs. J. Adams and W. Hughes; Clematis by Messrs. W. Brooks and J. P. Cassell; Petunias by Messrs. W. Brooks and W. Hicks, Burnham, the prizes going much in the order the names are given, and each kind was well represented.

Cut flowers generally were very good. Several entered cut Roses, the best class being for twenty-four triplets. The Judges placed Mr. G. Campbell, gardener to S. P. Budd, Esq., Bath, first, but many seemed to think the first prize ought to have gone to Messrs. R. Mack & Sons, York-shire, who took the third prize only. When we saw them Messrs. Mack had much the finest and freshest blooms. The second prize was awarded to Mr. J. Mattock, Oxford, this exhibitor and Mr. Campbell having several Teas, whereas Mr. Mack had very few. With twelve varieties, single blooms, Mr. T. Hobbs, Bristol, was first; Mr. C. Warden, Salisbury, second; and Mr. W. Smith third. The sorts best shown in the several stands in both classes were Ulrich Brunner, François Michelon, Pride of Waltham, Rubens, Louis Van Houtte, Princess Vera, Marie Finger, Etoile de Lyon, Alfred Colomb, Etienne Levet, Duchess of Bedford, Comtesse de Nadailac, Merveille de Lyon, Duc de Rohan, Marie Baumann, Mrs. Jowitt, Louis Corbie, C. Lefebvre, and Duke of Edinburgh. Mr. Budd's gardener was also first for twelve Teas, Mr. Mattock being a good second, and Messrs. G. Cooling & Son, Bath, third. Zonal Pelargoniums in bunches made a fine display. Mr. Mattock was first for twenty-four varieties, and Messrs. J. Cooling & Son second. Some of the best shown were Dr. Orton, Mrs. Gordon, Beatrice, Lady Chesterfield, and Jessie Masters. Mr. G. Wilton was first for twelve varieties, and Mr. F. W. Wicksteed second. Only one collection of twenty-four varieties of cut flowers was shown, and for this Mr. W. Brooks took first prize; and Mr. E. S. Cole was easily first for twelve varieties, the remaining prizes going to Messrs. C. Holland and W. Lewis. Mr. Cole was also first for a vase of cut flowers and a device in fruit and flowers for the table, in which department he always displays excellent taste. The bouquets shown by Mr. J. Cypher and Messrs. Perkins and Sons, Coventry, were both remarkably good, and the Judges were under the necessity of awarding them equal firsts. Mr. Brooks was successful with Dahlias; Mr. A. A. Walters, Bath, with Verbenas, single Dahlias, and herbaceous Phlox; Mr. W. Smith, Bristol, with Hollyhocks; Mr. J. S. Pope and Mrs. Jones, Bath, with Asters.

A fine display of fruit and vegetable was provided both in the open and cottagers' tents, the latter containing a capital lot of produce of all descriptions in season. In the open classes the competition was not quite so good as last year, Grapes, Peaches and Nectarines especially being shown in fewer numbers. Four collections of eight dishes of fruit were staged, and three of these were almost of equal merit. The Judges eventually awarded the first prize to Mr. W. Iggulden, gardener to the Earl of Cork, Frome, who had large and fairly well finished bunches of Black Hamburg and

Foster's Seedling Grapes, a good Smooth Cayenne Pine Apple, Hero of Lockinge Melon, Barrington Peaches, Victoria Nectarine, Moorpark Apricots, and Brown Turkey Figs, all in good condition. Mr. W. Nash, gardener to the Duke of Beaufort, Badminton, was second, being somewhat behind with Grapes, but who had very handsome dishes of Bellegarde Peaches, Black Tartarian Cherries, a good Smooth Cayenne Pine, Read's Melon, and Brown Turkey Figs. Mr. H. W. Ward, gardener to the Earl of Radnor, Salisbury, was a good third, included in his collection being a very fine fruit of Blenheim Orange Melon, neat bunches of Madresfield Court and Muscat of Alexandria Grapes, and good Queen Pine Apple. Mr. Ward was first for Muscat of Alexandria Grape; Mr. G. Shelton, gardener to W. R. Waite, Esq., second; and Mr. Iggulden third, neither of the lots being fully ripe. In the class for any white kind Mr. A. Young, gardener to B. Thomas, Esq., was placed first for fine bunches of Buckland Sweetwater, but these were not ripe, and the first prize might well have been given to the well finished Foster's Seedling shown by Mr. J. Lloyd, gardener to Vincent Stuckey, Esq., Langport, who took second place, while the third went to Mr. Ward for small but well ripened bunches of Buckland Sweetwater. Black Hamburgs were scarcely so good as usual. Mr. W. G. Yard, gardener to the Rev. Canon Pratt, Wells, was first for loose, badly shown, though well coloured bunches; Mr. W. Moss, gardener to W. Hunt, Esq., was second, and Mr. F. Edwards, gardener to J. Lysaght, Esq., third. Any other black variety did not attract much competition. Mr. Nash was first for Alicante, splendidly finished; Mr. Duffurn, gardener to Mrs. Walker, Weston-super-Mare, was second, and Mr. Lloyd third, both having Madresfield Court in fairly good condition. Mr. C. Holland was first in the class for green-fleshed Melons, the variety being Sutton's Horticultural Prize, and Mr. Shelton, gardener to the Rev. J. A. Yatman, was second. Mr. J. Goddard, gardener to R. Cripps, Esq., had the best scarlet-fleshed variety, and Mr. C. Holland was second, both showing Read's Scarlet. Mr. Duffurn was easily first for Peaches, having Grosse Mignonne, very fine; Mr. F. Edwards was second. Mr. Duffurn was also first for Nectarines, staging a handsome dish of Elruge, the second prize going to Mr. Lloyd for a handsome dish of Oldenburgh. Mr. Silcox was first for Apricots: Mr. Matthews for Figs; Mr. Tylee for Plums; Dr. Wicksteed for dessert Apples; Mr. Ward for Pears; and Mr. Nash for Cherries.

There were eight good collections of eight dishes of vegetables shown, Mr. T. Tilley, gardener to Col. Colgrave, taking first prize for capital samples, comprising Sutton's Early Snowball, Golden Globe Onion, New Intermediate Carrot, Girtford Giant Runner Bean, Perfection Tomato, Sulham Prize Celery, and Veitch's Autumn Giant Cauliflower. Mr. J. Hall, a Wells amateur, was a good second, and Mr. W. A. Harris third. The favourite round Potatoes were Reading Russet and Schoolmaster, and in this class Mr. J. Cole was first; Mr. J. Day being first for kidney Potatoes, having Woodstock Kidney in fine condition. Mr. R. Bow was a good second in both classes. Mr. Ward had the best Cauliflowers, Mr. J. Day the best Peas, Mr. Cook, Clevedon, the best Onions, Mr. W. A. Harris the best Carrots, Mr. J. Goddard the best Tomatoes, and Mr. G. Garraway, Bath, the best brace of Cucumbers.

HARDY ANNUALS FOR SPRING FLOWERING.

BARE beds are extremely cheerless even in winter, hence the practice of seeking to make them attractive with low shrubs; still these are monotonous at best, and never have the charm of plants that are raised from seed. Beds of bulbs, Pansies, and Violas with many other occupants of our borders are often too numerous, giving much sameness, which a free use of annuals that in an ordinary winter survive the rigour of our climate would remove. The idea that annuals are weedy-looking at best obtains only through the erroneous impression of their being of short duration, they after the first glow having a seedy appearance, which, much as it may militate against them in the summer, cannot be advanced against them in the spring, as they have not to encounter the drought and heat of summer. Besides, flowers are not too plentiful in late spring and early summer; those that prevail being of a stiff formal character, very little varied in form or colour and contrast. Variety is particularly wanted to give grace and elegance to vases, &c., than which none contribute to cut up, relieve, and feather more than sprays—flowered, budding, and growing—of hardy annuals. We want more of the "Ragged Robin" style in our arrangement of flowers.

DWARF-GROWING ANNUALS FOR BEDS.—These are for massing, having mostly a dwarf, bushy, or prostrate habit, and a profusion of flowers appearing on a level with or slightly raised above the foliage.

Silene pendula compacta, pink. Nothing can surpass this in brightness: it is the scarlet Pelargonium of spring bedders. Seed best sown in early August.

Silene pendula compacta alba, white. As lovely as the preceding, and sown early in August.

Saponaria calabrica, pink. Insignificant flowers, but so numerous as to be all colour in a mass.

Saponaria calabrica alba, white. Equally effective with the pink in a mass.

Limnanthes Douglassi, white and yellow. Very fine and free. *Limnanthes grandiflora*. Larger flowers, otherwise not different.

Nemophila insignis, blue. Nothing is lovelier than a bed of this, but it is no use if there are cats, as they take a delight in pulling it about.

Nemophila insignis alba, white.

Venus's Looking-glass (*Specularia Speculum*), blue.

Venus's Looking-glass White (*Specularia Speculum album*).

The preceding grow from 6 to 9 inches high, and are the only ones that are advised for bedding. Virginian Stock red, Virginian Stock white, and *Viscaria oculata nana* are useful.

FOR LARGE MASSES, CLUMPS IN BORDERS, &c.—*Silene pendula* pink, 12 to 15 inches. Fine in a mass. Sow early in August for beds.

S. pendula alba, white.

S. pendula ruberrima, rose, 15 to 18 inches.

Collinsia verna, blue and white, 12 inches. This is the best of the *Collinsias* for spring flowering.

C. bicolor, purple and white; *C. candidissima*, white; *C. grandiflora*, purple. All about 12 inches high, and are very free-flowering.

Eschscholtzia crocea, orange, 12 to 15 inches; *E. alba*, white. *E. californica*, yellow. The *Eschscholtzias* are amongst the best for cutting from.

Gilia tricolor, white, lilac, and purple, 12 to 18 inches; *G. tricolor alba*, white; *G. tricolor rosea splendens*, rose. There are not very remarkable, but help to make a pleasing variety.

Erysimum arkansanum, yellow, 18 to 24 inches. Pretty for cutting.

Eucharidium grandiflorum, red, 15 to 18 inches.

Clarkia pulchella, dark rose, 18 inches.

Clarkia pulchella alba, white, 18 inches.

Asperula azurea setosa, blue, 12 to 18 inches. Pretty for cutting.

Bartonia aurea, orange, 18 to 24 inches. Very showy.

Candytufts.—White Rocket, Sweet-scented, White, Dark, Crimson or Purple, Carmine, and Lilac. All 15 to 18 inches, are very showy, blooming most profusely.

Godetias rosea alba, rose and white, and The Bride, white, are good; also *G. rubicunda*, rosy crimson. They grow to a height of 18 to 24 inches.

Lupinus nanus, blue and white, 12 to 18 inches; *L. nanus albus*, white, 12 to 18 inches. The spikes of these are useful for cutting.

Kaulfussia amelloides, blue, 12 to 15 inches.

Lasthenia californica, yellow, 15 inches.

Leptosiphon densiflorus, lilac, 12 to 15 inches.

Leptosiphon densiflorus albus, white

Platystemon californicum, yellow, 15 inches.

Whitlavia grandiflora, purple or violet, 15 inches.

Gypsophila elegans, white and pink, 2 to 3 feet. Good for cutting.

Calliopsis tinctoria, yellow and brown, 2 to 3 feet.

Viscaria oculata, rose, dark eye, 15 to 18 inches.

Viscaria oculata cardinalis, scarlet, 18 inches. This is that shade of colour known as magenta, but I find colour very variable as to shade in different soils.

There is no doubt respecting the beauty of annuals when sown sufficiently early to get good plants before winter. The middle of August is a good time to sow the seed for early flowering, and it certainly ought not to be sown later than the first fortnight of September. The ground at neither time is vacant where the plants are intended to flower. If it be, the seed is best sown where the plants are to remain for flowering, sowing thinly on a fine surface, and covered with fine soil. If dry, water before sowing, and use moist soil for covering the seed, keeping it moist. The seedlings should be guarded against slugs with dressings of quicklime or dry soot or wood ashes late in the evening or early morning, be kept free of weeds, and thinned out so that they stand about 3 inches apart in the clumps.

If the seed cannot be sown where the plants are to remain, sow in rows in good rich light soil in an open situation 3 inches apart, drawing a drill with the finger or stick of about that thickness, or a rod may be pressed down so as to make an indent of about half an inch depth. In the drill sow the seed rather thinly, cover, and keep it moist. Keep the bed free from weeds, and guard against predatory vermin. When the plants can well be handled lift carefully and prick off, 2 inches apart for the upright or less spreading, and 3 inches for the spreading sorts, being careful not to bury any of them below the seed or first leaves. Water if dry, and continue the precautions against slugs and worms, the latter drawing the plants into their holes, but lime will expel them.

From the beds they can be transferred to their flowering quarters with perfect safety, due care being paid to lifting and keeping the soil to the roots. The lifting may be performed any time from October to March inclusive in mild weather. Thin sowing, thinning early, pricking off and transplanting having a

hardening effect. Thick sowing, neglect of thinning, and after inattention are the principal causes of annuals being considered weedy.

Another use to which annuals may be put is growing them in pots or window boxes along with bulbs. In the case of window boxes some of the dwarf growers, as *Silene pendula compacta* and its var. *alba*, *Limnanthes Douglasi*, *Nemophila insignis* and its var. *alba*, and the Venus's Looking-glasses on the margin, with the taller, as *Collinsia bicolor*, *C. verna*, and *C. candidissima*, *Viscaria oculata cardinalis*, *Bartonia aurea*, and the Candytufts for the centre are quite charming, and make a window box scarcely less brilliant with annuals in May than they are in July and August with *Lobelias*, *Tropæolums*, *Calceolarias*, and *Zonal Pelargoniums*. In pots they are very useful for balconies, window sills, &c.

The seed should be sown in the pots 5 or 6 inches in diameter, drawing a ring about an inch from the rim, and the seed sown therein thinly. Drain the pots well, say a quarter their depth, filled to within about half an inch of the rim with loam, to which has been added a third of leaf soil, or a fifth of well-decayed manure, and about a sixth of sand. Stood in an open situation, kept moist, and duly attended to in weeding and thinning, they will be good plants if sown early in September before severe weather, before which or in November they should be stood on and plunged to the rim in ashes in a sheltered sunny situation. In severe weather they can have the protection of mats, but they must not be "coddled." Keep them hardy and sturdy, giving them more room as they grow. After the middle of March they may be stood in their flowering quarters or remain until further advanced for flowering if the site they are to occupy is not so warm and sunny. Instead of sowing in pots they may be pricked into them at a later period, which is a most excellent plan. Wintered in a frame or in a cool house, where they can have a position near the glass and plenty of air, they will flower earlier and be most acceptable for decoration.

A matter much overlooked by those that are fond of cut flowers in early summer is the value of something bright and sweet to give variety and elegance to those of a formal character, and none contributes more in this way than annuals of the neglected wild yet very distinctive type. What is finer than *Cornflowers*, and *Sweet Peas*? Of course there are *Centaureas* and *Everlasting Peas*, but they are not like the former, they lack scent. Indeed, with *Cornflower*, *Sweet Sultan*, *Calliopsis tinctoria*, *Sweet Peas*, and *Mignonette* quite a charm is given to border flowers on account of their agreeable fragrance. *Sweet Peas* and *Mignonette* are tender, but sown early in September, and kept through the winter in cold frames or a house in poor soil and so dry as to only keep them fresh it is astonishing how hardy they are, and plants placed out in warm situations at the usual time of sowing outdoors in spring will flower weeks before, and be all the more valuable on that account. The *Cornflower* and *Sweet Sultan* will winter safely in a dry soil and a sheltered situation, but are well worthy of wintering in pots to give an early supply of flowers for cutting either indoors or out. They require plenty of air, and not too much water. The best forms of *Mignonette* are the Dwarf Erect Compact, fine, five in a 5-inch or seven in a 6-inch pot; Giant Red Pyramidal, and Queen Victoria. Sown before early September they are fine for decoration in spring. Add some lime rubbish and charcoal to the soil for them, about a sixth being sufficient. The secret of growing them is to avoid over-watering.

A few pence expended in a few packets of seed will raise a great number of plants, and their beauty will be found to depend greatly upon their treatment.—G.

THE INSECT ENEMIES OF OUR GARDEN CROPS.

THE APPLE.

(Continued from page 418, last vol.)

So much has been printed in books and journals about the American blight that one might hesitate to touch upon what seems a threadbare topic were it not the truth, to which I can vouch personally, that the insect is even yet a great deal commoner than it need be. This suggests the reflection that amongst the growers of fruit there must still be some amount of ignorance, or at least indifference, with regard to a species certainly one of the worst foes of the Apple. And it may also be stated that the published histories of this insect are not without their per-centage of mistakes, especially those of older date, which renders it advisable for us to review its life-story, putting the facts tersely while taking full advantage of past experiments in the direction of stamping out the species.

Now, there cannot be a doubt that in connection with new plants or sometimes by mere accident, a variety of insects have become

naturalised here which are not truly of British descent. But some of those that have been set down as foreigners are certainly natives, and our uninvited visitors have not always arrived from the country to which we attribute them. Why should the *Schizoneura lanigera* be the American blight? There is no evidence beyond a mere tradition that it was imported from the United States in 1787, just upon a century ago; we may assume that it has been under observation in Britain about that time. The woolly aphid is another old name for the insect, but it is rather akin to the species of *coccus* or scale, having no honey tubes such as the aphid tribes possess, and there does not seem to be the rapid succession of broods that is so notable amongst them during the spring and summer, yet I am inclined to think there may be more broods than one some years of this woolly blight. I have been asked, What is the use of the peculiar exudation? I suppose it serves as a partial shelter, and also enables a group of these insects to make a journey from one tree to another by the aid of a breeze. Most likely they travel thus in all their stages, but do not migrate the distances aphides do occasionally. It is where fruit trees are densely congregated that this blight has predominance, and large orchards in any case are apt to be infested, because individual attention is less carefully given to the trees or less frequently. Though commonly associated with the Apple it is found upon other trees, the Pear next, but seldom appears as prolific then, therefore less hurtful. It must be neglected indeed that suffers young trees to be killed by the insect, yet this does happen, and the death of the Apple seems to be caused by a cancerous disease resulting from exhaustion or irritation left unchecked. Necessarily the worst cases are those in which the blight infests, not only the bark and wood, but also the root of the tree, and although some have surmised that the root species is not the same enemy there is no difference discernible. Its presence at the roots is a natural result of its habits, for some of the insects are found near the base of the tree, or even in the soil, during the colder months of the year, and it is easy for these to work in amongst the roots.

In the orchards of Kent near my residence the Apples are often much exposed to the wind, and both stems and branches, unless carefully tended, show abundance of loose pieces which afford covert to the woolly blight, and give it access to the wood. Instinct leads them to shelter, however, in clefts where the young bark has sprung up beneath old masses, and these at the winter season will, if the foe has been left alone, yield hosts of wingless females and their immature progeny; the elder one are generally reddish brown or yellow, the juveniles pale red. To appearance they are not as mischievous as we find them to be, but the harm is done by their incessant attacks. It is also the case frequently that swarms are hidden under diseased wood, besides those which make a display exteriorly with their woolly secretion; hence, there is great difficulty in reaching many of them by either syringing or brushing at the season of their activity—a strong reason for carrying on the campaign during the autumn and winter by judicious scraping or clipping, following the operation with a thorough washing of the places of lodgment that are laid bare. February and March are the months for the work of eradicating the pests that have gained a great advantage should the gardener leave them alone till he discerns the first tassels of wool. It is possible to carry on proceedings against them with rather too much vigour. Some recommend (and practise) diligent scrubbing of the trunks by means of a hard brush when all loose bark has been removed, but this may prove hurtful to the tree, though sure to destroy what blight there may be. Few applications are more familiar to the eye about gardens, and orchards too, than whitewash, which, even if it is sized, does not much hurt the insects, and, as Mr. Wood remarks, helps to conceal them from observation.

The catalogue of remedies that have been eulogised is a long one, and may indicate that gardeners love variety in insect-killers. It cannot be said that the major part of them are useless, but some are costly and not easy to administer. Were we to class them, these specifics might be briefly styled the sloppy, the slippery, and the sticky; nay, there's the fourth, the pasty, such as the following compound:—Clay mixed with water and a small proportion of sulphur, to be daubed upon the spots where the blight congregates. It may be relied upon to kill them, but it is not slightly, nor convenient of application to the lesser branches. Also, this insect might be destroyed by smoking it, especially when it appears in houses; this plan has not been much tried. All sorts of oily substances, which form one group of the slippery specifics, answer by choking the pores of the creatures, so that they die of suffocation. Neat's foot and whale oil have been advised; these, nay, however, prove injurious to young bark. November is the time for oils, putting little on buds or new growth. At the same season turpentine or methylated spirit or diluted petroleum (one part to three or four of water) may be applied with brushes, but as in the oils there is a possibility of mischief resulting. The soapy applications may be either simple or compound; one of these formerly popular was a mingling of tobacco powder,

sulphur, turpentine, and softsoap, the preparation being made of a creamy consistence, and then well worked into cracks and crevices.

The known occurrence of American blight amongst Apple roots requires us not to limit precautions to the trunk and branches. It has been advised in orchards, and where the article is attainable, to apply spent tan to the foot of the trees after the dead leaves or other rubbish have been removed; about Christmas is suitable. Previous to its distribution the tan ought to be laid in a heap, so that it may be actively decomposing when used, or ammoniacal liquor diluted with from ten to fourteen parts of water may be poured round the trunks, and strong soap-suds operates almost as effectively. The application of soap in any form is good, and probably of all the belauded



Fig. 24.

remedies none excel the simple one of a solution of softsoap thrown upon the trees with some amount of force. A friend much recommends as a good and cheap destroyer the following:—Put a peck of soot into a coarse sack, and hang this in a vessel holding 30 or 40 gallons of water, to which some lumps of quicklime have been added. Let this remain a week or so, clear the surface of its scum, and you have a clear sherry-coloured liquid very deadly to this blight. Syringing with some of these washes in early spring will also remove an allied species, the Chermes of the Apple (*Psylla Mali*), which, as a larva, infests the buds, and is popularly ranked amongst the scale insects, with which it is indeed closely connected, but it resembles the unpleasant grub of the frog-hopper in its habit of clothing itself in a frothy mass, which may be pulled out as fine threads. This is a minute, plump, yellowish creature, which, having feasted on the buds, crawls along to a crack in the branch, and there becomes a pupa, producing a green and yellow fly during the summer. Like many trees, the Apple may have examples of various aphides, but its special foe is the green fly called *A. Mali*—that is to say, the spring broods are green or greenish grey, but the later ones (winged and wingless) are often brownish or red. It is one of the smaller species of aphids. The eggs laid in the autumn remain unhatched till spring. The first brood is not numerous; the heaviest one is about July, when in many orchards numerous leaves are curled and shrivelled through this pest.—ENTOMOLOGIST.

SUMMER AND AUTUMN EXHIBITIONS.

In the following list are given the dates of the principal shows to be held up to the end of October this year, and we shall be obliged if the Secretaries of Societies holding shows during the season named will forward us their schedules.

AUGUST.

- 19th, Thursday.—Maidenhead.
- 20th, Friday.—Exeter.
- 21st, Saturday.—Cheshire (Cheshire).
- 24th, Tuesday.—Royal Horticultural Society, Committees and Cottagers' Show.
- 25th, Wednesday.—Reading.
- 25th, Wednesday.—Ludlow.
- 25th, Wednesday.—Brighton.
- 26th, Thursday.—Stoke-on-Trent.
- 27th, Friday.—Sandy (Beds).
- 27th, Friday.—Hinckley.

SEPTEMBER.

- 1st, Wednesday.—Bath.
- 1st, Wednesday.—Oxford.
- 3rd, Friday.—Crystal Palace, Fruit and Dahlias.
- 7th, Tuesday.—Royal Horticultural Society, Committees; Fruit and Dahlia Show.
- 8th, Wednesday.—Glasgow.
- 8th, Wednesday.—Edinburgh.
- 9th, Thursday.—National Chrysanthemum Society, Early Chrysanthemums, Westminster Aquarium.
- 21st, Tuesday.—Royal Horticultural Society, Committees.

OCTOBER.

- 6th, Wednesday.—Crystal Palace, Fruit Show.
- 12th, Tuesday.—Royal Horticultural Society, Committees and Hardy Fruits.
- 13th, Wednesday.—National Chrysanthemum Society, Floral Committee.
- 23rd, Tuesday.—Royal Horticultural Society, Committees, and Chrysanthemum Show.
- 27th, Wednesday.—National Chrysanthemum Society, Floral Committee, Westminster Aquarium.

YUCCAS AND THEIR CULTURE.

As the fashion of the day is favourable to the cultivation of plants presenting great dissimilarity in character and outline, the Yuccas now receive a share of that attention to which they are entitled, but which has not in all cases been accorded to them, perhaps in some instances owing to their being less rapidly increased than most plants, as well as

from an idea that their hardiness is questionable. Although they cannot be propagated so rapidly as many of the softwooded summer occupants of our flower gardens, still the process is more easy than many suppose. The small amount of care required in their cultivation also gives them an additional claim to be more generally grown than they now are.

Of the Yuccas in most general estimation, those with which I am best acquainted are *Y. gloriosa*, *aloifolia*, and *recurva*, which, either in themselves or in some of their intermediate varieties, seem to run into each other in a way that makes it difficult to determine to which of those species certain plants are to be referred—at least, such is the case with those here, and their number is very considerable. *Yucca filamentosa* is, however, widely different, while its variegated form is not sufficiently plentiful to be planted out of doors in such numbers as to make that show which no doubt it will do in course of time.

At the base of a terrace wall, about 10 feet high and facing the south, a border, 10 feet wide and some 200 feet long, was planted many years ago with the varieties of Yucca mentioned in the beginning of this article, intermixed with a few Irises, more especially towards the front of the border. The wall itself, I may state, is covered with such plants as *Ceanothus*, *Eugenias*, *Myrtles*, *New Zealand Veronicas*, *Escallonia macrantha*, and several kinds of climbers not unusually met with on conservatory walls, although no protection is given. The border is planted irregularly with Yuccas, some of the plants being upwards of twenty years old, but the greater portion much less, as by various mishaps, as well as by occasionally heading down, the number and size of the old plants has been limited. The border, however, is tolerably well covered, and where a cluster is formed by plants growing near each other the intruder will find that the sharp points of the leaves penetrate ordinary clothing more than is agreeable.

The position is one facing the south, and this circumstance has done no harm beyond inducing a larger number of plants to push forth their flower-spikes later in the autumn than there is mild open weather to complete their opening. This, however, was no doubt also in a measure due to the character of the soil they grow in, which, instead of being a rich loam, is one that would be considered of very inferior quality for kitchen-garden purposes. It may be roughly described as consisting of three-fourths stones, the remainder being a yellow sandy loam, not of itself so porous as an ordinary sandy or gravelly soil; but in conjunction with the stones it is open enough for any plant requiring a porous soil. Most of the material composing this border was the subsoil obtained from an excavation, and some alterations rendering it necessary to raise the border about a foot ten years ago, this soil was used for the purpose, and has answered well. The plants which seem to thrive in it are most of the Cypresses, *Arbor Vitæ*, and common Laurels. *Rhododendrons* and kindred plants will barely live, and *Lily of the Valley* drags out a miserable existence. Not having had experience with Yuccas in soil of a contrary description, I cannot be positive they will not succeed in such, but I have proved the necessity of deep soil; for in that where the plantation referred to is growing the roots of some Pinuses have been found several feet below the surface, although the ground had never been disturbed beyond the usual spade's depth. The presence of so many stones allows a more ready passage of the roots downwards than the hard obstinate clay bottom of many soils, and plants whose roots penetrate to so great a depth rarely suffer for want of moisture.

Amongst the positions suitable for Yuccas I can hardly advise their being planted on rockwork, unless the latter is on rather an extensive scale, as they attain too large a size for those tiny imitations so often met with; but where natural rock, or artificial rockwork on a sufficiently extensive scale exists, there the Yuccas may have a place.

There are, however, so many positions in which Yuccas may be planted that it is not difficult to find a suitable one. As corner plants in a geometrical garden they are always acceptable, their outline and symmetry giving them a decided advantage over most other plants. Dotted about on the turf they look well, more especially if the plants are large. One which is thus planted here has a stem 7 feet high to the first tier of leaves, but the head has latterly become much injured. Other positions might be cited as suitable to Yuccas, but do not plant too close to walks on account of the sharp-pointed leaves. Perhaps the best mode of planting is in a border by themselves, or along with kindred plants, for their tropical aspect commands more attention when they are in number; and when such a border is well chosen, and its occupants appear to be at home in it, few will be found to find fault with them or recommend a change.

The Yuccas increase but slowly, but where an old plant exists it may be multiplied to a greater extent than may be supposed. Where a number of plants of various sizes exist, it sometimes happens that a leggy one is broken by a heavy load of snow in winter, or in some other way; in this case it is best to leave the stump in the ground, remove the head, and if the latter is put in as a cutting it will very probably grow, while a numerous tuft of young shoots will be formed on the short stem that is left in the ground. In general, these should remain till the following spring, when a considerable number of them may be cut off along with a little heel of the old stem, and put in as cuttings in some place not too much shaded, as they will have to stand a year or more, perhaps, without being removed. Of course, plenty of sand is necessary, and if extremely hot weather follow afford shade accordingly; but I have put such cuttings in about August without any attention, and they have made good plants. The aid of glass will expedite the rooting process, but I question much if heat is wanted in any way. The Yuccas are at all times slow-growing, and their propagation cannot be so quick as that of many other plants; but as they require very little attention, and a cut-down old plant affords

a goodly number of cuttings, somewhat like Pine Apple crows or small suckers, they may be had in greater numbers than hitherto if the demand should increase.

With regard to the hardiness of the plants, I have never seen our most severe winter have the least effect on them; but heavy falls of snow sometimes load the tops so much that these break off, or where a plant has two or three heads, one of them may be split off. A mild winter is, however, serviceable in one respect, as the plants disposed to bloom do so earlier than when the winter is severe, for the Yuccas seem to bloom indiscriminately at all times of the year when the weather is open. I have had several in full bloom in December, but more frequently a number of plants are just rising into bloom at that time, and are cut off by the hard weather that may not set in till after Christmas, a fine autumn, unfortunately, starting such plants into flower at that unfavourable period. Hot, dry seasons are most favourable to the plants' blooming. Those who have not seen Yucca gloriosa with a full-grown spike of flowers have certainly not seen one of the noblest of all flowering plants, for the beauty of the spike is not less remarkable than its weight, and altogether the tropical aspect of the plant gives it an importance entitling it to a more extended cultivation than it has yet received.—N.



HARDY FRUIT GARDEN.

LET there be no more close pruning of fruit trees till the winter pruning is done. Good work is being done now by shortening the shoots of Pears, Apples, and Plums to about 6 or 9 inches, according to the condition of the growth. By this shortening, the buds near the bottom of the shoots become plump and full without actually starting into growth, as they would do if close pruning were done, and new growth so late in the season can only prove abortive and worthless. It is important that light and air should go freely to every part of a fruit, both to ripen fruit and branch. For this reason we have for several years given preference to shortening growth in autumn. At one time we used to give the young shoots a twist at a point a few inches from the bottom, and turn them downwards without breaking them quite off. This plan answered well to check the flow of sap, but the bent down branches shaded the fruit and the interior of the trees so much that we discontinued the practice, and adopted what may be termed the Chiswick plan of shortening the growth. Valuable lessons in the culture of hardy fruit are always to be had in the garden of the Royal Horticultural Society at Chiswick. Just now gardeners may gain useful knowledge from an inspection of the fruit trees, and gentlemen who are so fortunate as to retain the services of an intelligent energetic gardener would find it a profitable investment to send him to Chiswick for a day.

As fruit ripens we must be on the alert to gather it with care and judgment. Early summer Pears soon spoil, yet we manage to keep up a supply of sound ripe fruit by having a few cordons on different aspects, and by gathering the first ripe fruit from the upper part of the cordon, where it is always ready first, and so downwards to the bottom fruit, which is frequently a fortnight later in ripening. By such management we are able to have Summer Doyenné fit for table at the end of July, and to maintain a tolerably regular supply of ripe fruit, with Citron des Carmes, Ananas de Courtrai, Beurré Giffard, Jargonelle, Désiré Cornélis, Souvenir du Congrès, Williams' Bon Chrétien, Colman d'Été, Summer Beurré d'Arcberg, and Beurré d'Amanlis, till we reach what may be termed the great Pear season, and revel among the delicious fruit of Fondante d'Automne, Beurré Superfin, Louise Bonne of Jersey, Marie Louise, Comte de Lamé, Doyenné du Comice, Seckle, Duchesse d'Orléans, and numerous other fine sorts, the best of which will be enumerated in time for planting. At one time it was only in large gardens that many sorts of Pears could be found; the introduction of cordons enables everyone having a garden to have a selection of the best sorts of Pears, and to have trees in full bearing in a short time. Now is the time to see what space can be had against walls, outbuildings, or fences for cordons, and to make preparations for early planting in autumn.

The crop of Apples on dwarf bushes, cordons, and pyramids is a good one, and we have now a useful supply of Duchess of Oldenburg and Lord Suffield for cooking purposes. Frogmore Prolific is fruiting well; it is worth knowing that cordons of this valuable Apple bear fruit very early. A tree of Mela Carla, the Italian Apple, has a fine crop of fruit. This tree has branches against south, east, and north walls, and it will be curious to note the difference in flavour of fruit from each aspect.

The Plum crop is one of singular abundance. That valuable sort, Rivers' Early Prolific, is now ripe, and, though later than usual, is very useful. A row of bush trees of Prince of Wales is remarkable for the very large clusters of fruit crowding every part of the branches. As a second-rate dessert Plum this sort is hardly worthy of the wall space which we sometimes see given it, but it is one of the best cooking Plums for planting out in the fruit garden.

FRUIT FORCING.

PEACHES AND NECTARINES.—*Earliest Forced Houses.*—The foliage of the trees is now giving way—i.e., beginning to fall, and the trees being exposed as advised by the removal of the roof lights, there will be no necessity to assist their falling by lightly brushing the trees with a broom, as the wind will do it most effectually. There must not be any attempt at a forcible removal of the leaves. Allow them to remain until they part from the trees readily. Although a dry condition of the border is to be avoided when the trees are leafless, excessive moisture at the roots is frequently the cause of premature growth, which must be guarded against, even if it cannot be effected without replacing the roof lights. Early forced trees do not, as a rule, make strong growth, and have a much larger percentage of single fruit buds than those started in spring under more favourable conditions, hence in pruning it is not so desirable to cut back next year's bearing wood unless they are of excessive length, and in that case it must be to a wood bud, so as to insure growth on a level with or above the fruit, so as to attract the sap to the fruit. Very little pruning will be needed provided disbudding has been properly attended to, no more wood being laid in than is necessary to take the place of the current year's bearing shoots, and to renew worn-out growths, as well as to provide for the proper extension of the trees. Trees that have long been subjected to very early forcing are seldom too vigorous, but not infrequently become so enfeebled as to need the removal of the weak growths, which, though plentifully furnished with fruit buds, are undesirable from their affording smaller fruit than is furnished by the better fed and more vigorous growths. Remove the old soil carefully from amongst the roots of such trees, and supply fresh turfy loam, to which has been added a twentieth part of crushed bones and half that quantity of wood ashes. Carefully lay the roots in the fresh material, a moderate watering being given, and the surface mulched with fresh short stable litter. Lift any trees that grow too vigorously, prune their roots, and lay the more fibrous ones in nearer the surface, making the soil firm. These operations require to be performed as soon as the leaves are mature, and before they fall from the trees.

Succession Houses.—As the trees are cleared of fruit, cut out all the current year's bearing wood, not being extensions, and thin all the growths where too crowded. Syringing must be practised as necessary to keep down red spider, and the borders kept duly supplied with water or liquid manure. Ventilation should be given to the fullest extent, unless the wood is not ripening, when by allowing the temperature to rise in the daytime by keeping the ventilators close, and admitting air freely at night, will induce its ripening. Any trees that are too vigorous should have a trench taken out about one-third the height of the tree from the stem, and the roots cut, filling the trench again firmly.

Making New Borders.—If any planting of trees in new houses or replacing of old is contemplated, materials for making the border should be procured, so that the work may be executed with dispatch, and the borders made so as to have time to settle somewhat before the trees are planted. Strong turfy loam with a sixth part of marl and a tenth of old mortar rubbish, free from laths and other woody matter, will grow Peaches well. If the loam is light, increase the clay or marl to a fourth, or more according to its texture, whilst if the loam be heavy a larger proportion of lime rubble should be added, a sixth part not being too much. Medium textured loam will be the better for a tenth of old mortar rubbish and a fourth of marl. No manure is necessary; the whole being thoroughly incorporated. The best description of loam is the top 3 or 4 inches of pasture where the soil is a good friable loam inclined to be strong rather than light on the limestone or oolitic formation. Most excellent Peaches, however, are grown on strong loams over new red sandstone as about Liverpool, and freestone as in the West Riding of York, the strong loams of Northampton, Lincoln, and Norfolk, so that strong loams, wherever they occur, only require the addition of old mortar rubbish or chalk to render them suited to the growth of the Peach, and light loam a goodly admixture of both marly clay and old mortar rubbish or chalk. Chalk is more particularly valuable on a light soil devoid of calcareous matter, and the lime rubbish on heavy, from its containing silica or sand. New borders must have efficient drainage. If the bottom of the border, the strata underneath is unfavourable, it should be concreted 6 inches thick, gravel, coarse and fine together, with a third of lime made into a mortar-like mass, put in so as to slope to a drain of 3-inch tiles, having proper fall and outlet. Nine to 12 inches of drainage should be given after the concrete has hardened, the roughest at the bottom and finest at the top. Secure the drainage with a layer of turves grass side downwards, but preferably with a layer of old mortar rubbish or chalk broken to the size of road metal 3 inches thick, which may form part of the thickness of the drainage. Instead of making the border all at once a 4 feet width in front and the same at the back are ample for a couple of years, and the openings in the front wall to let out the roots should be bricked up so as to insure the occupation of the inside border before they pass into the outside one. Loose bricks or dry walls will do for holding up the soil of the borders. The border need not exceed 30 inches, and should not be less than 24 inches deep. The compost should be neither wet nor dry, and be put together firmly. They should be ready for planting by the end of September.

As to the varieties of Peaches to plant it is best to have houses of moderate size, so that those that ripen about the same time can be grown together. For very early forcing—Alexander and Waterloo. There are no Nectarines suitable—i.e., ripening at the same time. The earliest is Advance, but it is not nearly so large as Lord Napier, which is three

weeks later in ripening than the Alexander and Waterloo Peach. Second early houses—Hale's Early, Early Alfred, Large Early Mignonne, and A Bec. Nectarines—Hunt's Tawny and Lord Napier. Early houses—Royal George, Stirling Castle, this is certainly only a form of Royal George, but an excellent Peach and a capital forcer; Dr. Hogg, a capital sort; Grosse Mignonne, Dagmar, Condor, and Crimson Galande. Nectarines—Elruge, Violette Hative. These can hardly well be forced to ripen before the middle of June. If forced hard so as to ripen in May they are not nearly so satisfactory as those previously named. They are excellent for ripening at and after the time named, and to them for midseason houses are Belle Beauce, Violette Hative (Galande), Noblesse, Goshawk, Bellegarde, Barrington, and Dymond. Late houses—Walburton Admirable, Princess of Wales, Lady Palmerston, Osprey, Gladstone, Sea Eagle, and Condor. For a cool house or wall case to succeed each other in ripening—Alexander or Waterloo, Hale's Early or A Bec, Early Alfred or Rivers' Early York, Dagmar or Dr. Hogg, Crimson Galande or Magdala, Royal George or Grosse Mignonne, Belle Beauce or Goshawk, Bellegarde or Noblesse, Dymond or Barrington, Walhurton Admirable or Princess of Wales, Gladstone or Lady Palmerston, Sea Eagle or Comet; twenty-four of the best Peaches in cultivation, two of each being given so that the number is easier of reduction.

Nectarines for a wall case to succeed each other—Advance or Lord Napier, Elruge or Violette Hative, Byron or Humboldt, Pine Apple or Improved Downton, Milton or Newton, Albert Victor or Victoria. For midseason houses—Pine Apple, Rivers' Pitmaston Orange, and Byron. Late houses—Improved Downton, Milton, and Victoria. Trees of Peaches and Nectarines for planting in houses are best when two or three (or even four if due regard has been had to lifting) years trained to walls or in cool houses, and failing these an early selection should be made of trees in nurseries, choosing the best furnished, most evenly balanced, clean and healthy, and with medium sized short-jointed wood. Carefully lifted when the wood becomes firm they will experience but little check.

Cucumbers.—The autumn-fruiting plants should be encouraged to make a strong growth by earthing betimes, not making large additions, but enough each time to cover the protruding roots, taking care to have it warm and moist. Afford plenty of water at the roots, but keep from dribbles. When any is wanted—and none should be given before it is—afford a thorough supply. Syringe at 3 to 3.30 P.M., damping in the morning, noon, and before nightfall in bright weather, at the latter time with weak liquid manure. Maintain a night temperature of 65° to 70°, 70° to 75° artificially by day, keep it through the day at 80° to 90° from sun heat, and close between 85° and 90° sufficiently early to rise to 90°, 95°, or 100°. Attend to tying in the shoots. Train rather thinly 9 to 12 inches apart—i.e., the side growths, and stop them at about 12 to 15 inches growth to give the needful fruiting and furnishing growths. Remove all fruits as well as male flowers as they show, so as to get the plants strong, the early part of September being sufficiently early to allow fruit to show for cutting at the end of the month, and by cropping lightly at first a good supply can be had later on, when in November and December the plants will need all the vigour that has been got into them to swell off the fruit properly.

Plants in bearing will require attention in thinning old growth, removing old leaves, stopping at a joint beyond the show of fruit, so as to maintain a succession of fruit. If seed is wanted any knobby ended ones should be left. They come freely enough on old plants; if not, impregnation will have the desired effect. Plants in frames that have fruited for some time will be restored to vigour by a good thinning-out of the old shoots and the addition of a little fresh loam, giving a moderate watering, and a sprinkling overhead on bright afternoons, closing at about 3 P.M. With linings and the protection of mats over the lights Cucumbers will be produced for a lengthened period.

Houses that are to be used for supply of fruit at Christmas—the plants having been raised from seed about the 10th of this month—should be cleared, so that the needful cleaning, repairs, or painting may be done thoroughly before the house is wanted. Pot the plants as they require it, keeping well up to the light, and place a small stick to each for the support of the young plant, which should be grown without stopping, rubbing off side shoots as they appear to the height of the trellis.

PLANT HOUSES.

CALANTHES.—The earliest of these have filled their pots with roots, and should be given weak stimulants every time they need water. Liquid made from cow manure is good for them if liberally diluted with water previous to use. They should be arranged close to the glass and grown from the present time under the influence of as much light as is consistent with maintaining their foliage of a deep green healthy colour. When too much shade is employed the foliage is drawn up weakly, while on the other hand it turns yellow if exposed to too much sunlight. Extremes in either case must be avoided; admit air liberally when the weather is favourable to induce the formation of sturdy growth. Good flowers and large spikes are the result of solid well ripened pseudo-bulbs. Later plants started in 3 and 4-inch pots may be transferred into others 2 inches larger. This operation must not be delayed, or else the plants will not benefit so much as if feeding only was resorted to. If potted at once the plants will develop rapidly, unless they have become checked by confinement in the small pots. Water carefully for a time after potting, then give liberal supplies. These plants should be grown in a temperature at night of 75°, with a rise by day of 10° or 15° by sun heat.

Phajus grandifolius.—These will be growing rapidly and rooting freely in their pots, and will bear feeding every time they need water. Grow them by the side of the earliest Calanthes, and the treatment advised

for them will suit well. Stimulants applied in a weak state are preferable to strong doses occasionally.

Cattleyas.—Healthy plants are growing freely, and will need abundance of water at their roots for the next two months. The atmosphere should be moderately moist. Admit plenty of light and air, only shading them from bright sun. The foliage and pseudo-bulbs of plants grown in a close, confined, shaded house are long and weakly, and never produce such fine flowers as those of plump sturdy formation, with strong leathery foliage. The leaves of healthy plants will be a deep green colour if shaded only from strong sun, as long as they are not starved by too low a temperature. Sickly yellow foliage is frequently the result of too much sunlight and too low a temperature. These plants should be sorted, and such species as *C. Trianae*, *C. Mossiae*, and others that have nearly completed their growth, and only need thoroughly ripening, should have the lightest position in the house. Those still making their growth should have a little more shade. Care must be taken that such varieties as *C. Eldorado* and others that flower from the pseudo-bulbs directly they are made, are not checked while in this stage, or the growth another year instead of being stronger will be the reverse. These root abundantly after flowering, and the supply of water should not fail until they are well ripened in autumn and root-action has ceased. The ripening process should be gradual, and not prematurely brought to that condition by withholding water and checking the plants. Some attention is needed to prevent yellow thrips from becoming established in the young growths, for if neglected for a few days or a week the appearance of the foliage is entirely destroyed. If thrips exist the whole of the plants should be gone over and sponged with a weak solution of tobacco water, and tobacco powder dusted into the young growths. This must be removed again directly the insects have been destroyed. The house should also be lightly fumigated two or three evenings in succession.

Disa grandiflora.—This Orchid is often grown too warm, and fails to do satisfactorily in consequence. To be successful it must be grown perfectly cool, with plenty of air circulating about them. They must also have moderate heavy shading and abundance of water. The best time to repot them is directly they have flowered and the old flower stems are cut down. The old soil, which is certain to become sufficiently sour for removal in the space of a year, should be carefully picked from amongst their roots and then fresh supplied. The plants appear to succeed best in fibry loam from which all the soily particles have been removed, and charcoal in lumps. They must be carefully watered for a time after potting until young growths issue from the base, when liberal supplies of water should be given and the surface of the pans covered with living moss. As these plants require a large quantity of water the drainage provided for them must be liberal. Slugs are also very fond of the young growths and must be searched for diligently.

THE BEE-KEEPER.

QUEENS AND QUEEN INTRODUCTION.

SINCE last August there has not been a month free from frost, and only one month free from snow in this locality. The temperature of July ranged from 30° to 84°. In many places the Potatoes were blackened in July. With such variable weather it was impossible for honey to be abundant. The work of raising queens at the end of May and beginning of June had to be delayed till July and August. The majority of our queens were three weeks old before they were fertilised. I have not lost a single young queen. Last year I arranged my hives, fixed my plans, and the bees did all I wished; this year they have reversed things and given much trouble, with one exception, and that is, at least 70 per cent. of last year's queens have been superseded by young ones, so I have been saved the trouble of "re-queening" stocks before going to the moors. All my hives are in the best order for gathering honey from the Heather, which I intend taking to on the 14th, being about two weeks later than usual. As all these queens are in large and strong hives they will be well taxed in depositing eggs, so will all be deposited in September and special queens introduced which I have in nuclei, bred from pure queens. These queens will be in the best order for having strong and early colonies in 1887. Most of my nuclei will by the end of September be in a fit state to stand the winter without any assistance. In the stocks to be re-queened I shall remove the queen regnant, and in eight days after shall make a thorough examination of every comb, removing all royal cells. After the bees make the commotion usual on such occurrence will, if queen only, put her into my safety queen cage, placing it on the top of the hive

where I can watch both her and the action of the bees. Whenever I observe the bees favourably disposed towards her, clustering in a quiet way in the outer compartment, will at dusk cautiously draw the slide, and success is certain. If I mean to join the queen and bees that form the nucleus to another hive, I place them in a large frame of perforated zinc and place it in the centre of the hive for at least twelve hours, after the hive has undergone the same manipulation as mentioned above for the reception of a single queen.

Owing to the Syrians raising many queens I have taken advantage of that, and experimented a little. The inclination of the Syrians to raise so many queens is a great drawback to their well-doing, unless they be excised on the eighth day after the old queen has left. In one case this year from the issue of the first swarm until the last cast, three weeks passed. To make the most of these bees the royal cells should be all excised, unless one on the eighth day after the old queen has left, and neither queen nor queen cell should be given to a hive at any other time than after the eighth day.

Allowing queens to run in at the entrance is a risky way of introducing queens. I have done it often, and in most cases the queen was badly treated. The old and depending bees are always placed at the entrance, and a queen will be seized and killed or wounded before the attacking bee has time to consider she is wanted inside. Queen cells have been placed in the hive by the dozen, and not one of the queens in these cells survives. In one case where I returned a first swarm to part of its combs, one royal cell had been left. It hatched, the laying queen was deposed, and in forty-eight hours after the young queen was laying. There was no loss in a case of this kind. Very different, however, was it in another. A young man had a stock back for the Clover, but progressing and giving promise to be a good one for the Heather. He was downcast about it, and begged a second swarm from me to join to it. I cautioned him respecting the likelihood of the old queen being deposed, and the risk attending the young queen on her wedding trip; but no advice was taken, the result being the old queen was deposed and the fertilisation of the young one was delayed or retarded for three weeks, and instead of having a forward colony it is simply beginning anew. The loss, however, I will make up to him with a few frames of brood from one of my populous colonies of Syrians, and he in return has promised me a helping hand with my hives at the moors, of more importance to me than a swarm of bees or a few frames of brood. Some bee-keepers add the value of their surplus stock to the balance sheet, but I expect I shall be only too glad if someone would come at the end of September and take mine away. In one nucleus of Syrian bees that was queenless for a week but deprived of its royal cells only four hours before introducing a queen, she was killed by one excited bee immediately she was set free, although the cluster of bees showed distinctly they were favourably disposed towards her. It was done by way of experiment, otherwise I should not have released her till sunset, or a little after, this being the time bees are disposed to be quiet; in fact, bees at that time cease, as a rule, from all labour for a short time. In five minutes after they killed the queen I gave it a small piece of comb, $1\frac{1}{2}$ inch square, containing eggs and larvæ, and in three hours after I observed nine royal cells begun—the lesson to be derived from it being, do not be in a hurry in introducing queens, nor to do it in any way that is likely to be repugnant to the bees. One hive in ten days after throwing its first swarm had a young queen fertilised; this fertilised queen, together with two virgins, were thrown out of the hive. Dissection proved very little spermatheca to be in the sperm sac, and it is plain a queen may be fertilised while queen cells or young queens are in the hive; also that the bees possess the power of knowing when a queen is in a fit state to be allowed to live or when she should be deposed from defects or functional disorder.—
A LANARKSHIRE BEE KEEPER.

QUEEN INTRODUCTION, &c.

DR. GEO. WALKER, Wimbledon, otherwise "A Surreyshire Bee-keeper," on page 56, replies to my criticism of his letter after giving the readers of the *British Bee Journal* my plan, which he says is "to keep the bees without a queen or eggs for two days, and then let the queen run in, when they will take to her at once."

In the following issue he admits that it would have been better had he quoted me exactly in my own words, and says he only referred to the plan generally, and mentions trying it with a Ligurian queen, which I take to be the same one he alludes to, and which he kept caged in the hive upwards of a week till he went to Liverpool, when he found the bees would not receive her; and now he says "followed out my instructions to the letter, and wants to know why he failed." Did he? Do I not clearly and distinctly imply in my letter that the queen was never to be caged inside the hive? also did I advise feeding the bees? No, and had the bees accepted the queen under such treatment I should have been surprised.

He now pretends to give the opinion of other bee-keepers to support his own assertions and quotes Mr. C. N. Abbott, but does not give particulars as to where they are to be found, so I will quote him from the *B. B. J.* for July 1st, 1886;—"Notwithstanding the opinions of the 'Hallamshire Bee-keeper' and others cited by Mr. Walker, it may be taken for granted that there is no condition in which alien queens will be so likely to be well received after caging as that existing in a hive in which there are young brood in all stages and plenty of hatching bees. Put that in italics, Mr. Editor, and let others disprove it if they can."

So it will be noticed that Dr. W. has quoted "young brood in all stages" as "young bees" and "plenty of hatching bees"—that is, those bees that are nibbling off the caps to creep out as "hatching brood." Mr. Abbott does not specify it as a condition that there should be any young bees, but Dr. Walker has it there should be "plenty."

I freely admit that I cannot make out exactly what Mr. Abbott means. It is the vaguest proposition I have ever seen, but he thinks it so important that he tells the Editor to put it in italics. Then he quotes Mr. Root, who, like himself, has a failure for quoting people wrongly, and who has given as a "safe" plan putting the queen alone or with only the bees which accompany her on some hatching brood in a lamp nursery and hatching out the young bees until sufficient to make up what he calls a "colony." It is true he recommends the "put" cage, probably because he makes it—he always advises using what he sells as being better than any other—and if a queen is lost then he has to supply another, but I have never seen him state that it was anything but fairly successful.

I consider I have given sufficient to show he has not quoted correctly. Is it likely when he cannot quote correctly he can repeat a simple experiment correctly, or describe one correctly which he has made?

It is well known that your Journal, Mr. Editor, through articles signed "A Lanarkshire Bee-keeper," "Felix," and others, has always scouted the "brood-spreading and stimulative feeding" teaching advocated by "A Surreyshire Bee-keeper" and his co-writers in the *B. B. J.*, in which journal, under the heading "Useful Hints"—which are very useful to gauge the writer's knowledge of practical apiculture—for July 8th, says: "Many a colony brought up to honey-collecting strength a month or six weeks ago is now in pitiable plight from depletion of its population and the attendant evil of chilled brood. In our own district this evil has been very prevalent, in some cases leading on to foul brood. The queens, stimulated to egg-laying by syrup-feeding or the uncapping of comb honey, have produced more brood than the bees could well cover, while the speedy dwindling of the latter, caused sometimes by robbing as well as foraging, has left whole sheets of unsealed larvæ to perish and rot—a meet hotbed for the reception of bacilli or foul brood germs. In several cases we have found fine queens with distended ovaries, accompanied by about a dozen bees on three or four frames of putrifying larvæ, without any of the odour so well known to the practised expert of foul brood."

Could a more sickening picture possibly be drawn from life, or rather death? Mark all this in the writer's "own district." Contrast this with stocks packed heavy enough at the beginning of September to last till the following June or longer, according to "Lanarkshire's" advice, and compare the two extremes. I shall be glad of every honest attempt to prove I am wrong, but I will warn all I shall accept none that is not in accordance with my teaching. Mr. Abbott goes and extracts all the honey out of a queenless lot, and then gives them a queen on the flight board, not at the entrance or flight hole as I direct; then, because she was likely to fall off, he dropped her in the hack of the hive. He says she was balled, and yet he admits they accepted her after being balled from Thursday to Sunday night, was at liberty on Monday, but on Wednesday he could not find her, though he found eggs and a queen cell. Then he says he removed all the combs from the hive, leaving the bees alone, and gave them a queen the same night and the combs back next morning—which is practically one of the ways I give in the previous issue of the *B. B. J.* to apply the "law" I lay down, and also supplied some bees to and directed a customer to introduce one by it also; and then he exclaims "that he has not pirated any of the tunes played by the big drum o' the band." Mind, he uses no brood or hatching bees, but just my law, which he says he finds at fault, only he cages the queen somewhere about the hive or box, after totally depriving them of queen and combs, and setting her at liberty a little before the time (twenty-four hours) I lay down as being absolutely safe.

Perhaps Dr. Walker will be able to see the vast difference between the plans recommended by Mr. Abbott in the *B. B. J.* for July 1st, and what he reports in the same journal for July 22nd as having practised. First he runs things down, and when he finds they are good he dubs it his plan.

putting his name to it, and then refers to it as that "which bears his own name." It is not the first time I have been robbed of all the credit in introducing new ideas. Feeding bees on dry sugar alone as a practical thing was my idea, and I made a big fight for it in the *B. B. J.*, and no one tried to "sit" on the idea more than Messrs. Abbott and Simmins, and yet within six months the latter claimed all the credit, and said he had been working at the problem for years, though his own published letters not six months before entirely repudiated such a theory. In fact, it was entirely owing to his scouting the idea of bees being able to consume dry sugar that I came out in its defence, and told what I knew. But Mr. Simmins began to make a trade of it, and advertise his "Dry Sugar Feeders," and when I wrote to the *B. B. J.* pointing out his inconsistency I was quietly dropped and he was allowed to figure as the man. Now I suppose the same game is to be played again.

A word as to caging queens. I had not time to reply to "A Lanarkshire Bee-keeper" as the busy season is on, and glad I am now I did not, as my silence seems to have led Dr. Walker and others into a trap. He says, "It has never been proved bees can carry eggs." If he will cage a fertile Syrian queen in a pipe-cover cage on a comb in a strong stock of black bees, queenless and having no means to rear one, I will venture to predict he will find a Syrian queen hatch out, though the one he caged has never been at liberty, or his experience will be very much different to mine. My contention is, that if the bees have combs, and can get the eggs dropped by the queen in the cage, they will carry them and rear a queen from them. Perhaps in his cages eggs cannot drop out, hence they cannot start a queen cell from her eggs. It will generally be found the reason bees persist in balling queens for upwards of nine days that they have got an egg somewhere in the hive, and when a queen cell is formed on it it is at once torn down as the product of a fertile worker. I could write a long article on this matter, but I think I have given enough to put such able investigators as himself on the track to an unexplored field. I noticed with satisfaction his confirmation of my way of introducing fertile queens; had he not done so I should simply have quoted his writings in support of it. I have found it does not matter how many fertile workers are in the hive if they have not begun to lay; if so, I remove all their combs, so that they have nowhere to lay them.

The "Benton" cage I will reserve for another letter. No one has any idea of the labour, trouble, expense, and study expended in developing it. I acted as correspondent to Mr. Benton during the experiments carried on between here and Beyrout, carefully reporting the condition they arrived in, &c., and Mr. Benton admits that had it not been for me he could not have succeeded as he did. No one would trouble themselves to carefully report condition and probable failure; all they would say was "arrived dead," and now he has succeeded scores are wanting to know how he prepares his food and packs his bees.

"A Lanarkshire Bee-keeper" is not quite correct in assuming he claims credit for introducing the Carniolian bees. Previous to his taking them up only a few had been sent to America, and none been propagated there; so he really was the first to introduce them to the New World, which credit he claims, but not to England, as they were pretty well known.—A HALLAMSHIRE BEE-KEEPER.

TRADE CATALOGUES RECEIVED.

James Dickson & Sons, 108, Eastgate Street, Chester.—*Catalogue of Bulbous Flower Roots for 1886.*

B. S. Williams & Son, Upper Holloway, London.—*Catalogue of Bulbs for 1886 (illustrated).*

Laing & Co., Forest Hill.—*Catalogue of Dutch Bulbs.*



* * * All correspondence should be directed either to "THE EDITOR" or to "THE PUBLISHER." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

White Early Rose Potato (*James Smith*).—We have received the tubers, which are excellent in appearance. We will try them for testing their merits as to earliness, quality, and productiveness—not that we do not accept your estimate of the value of the variety, but because you request our opinion, and Potatoes vary greatly in quality, especially on differing soils.

Sturt's Dessert Pea (*J. F.*).—The plant to which you refer under the above name is *Clianthus Dampieri*. Place the seeds in water for a few hours before sowing them; that may assist them. Sow the seeds in very light sandy soil in an intermediate house, the temperature ranging between 55° and 60°. Keep the soil moist, but not excessively wet.

Clematis indivisa lobata (*E. S.*).—The plant appears to be thriving satisfactorily, and it does not require any special treatment just now. If you wish it to fill as much space as possible do not shorten the growths, but let them advance freely so long as they can be fully exposed to the sun and air to mature; do not, however, allow them to become crowded. Syringe occasionally to keep the plants clean and free from insects, and supply water liberally while growth is advancing. In the winter keep the plant cool, as undue heat is apt to weaken it, causing premature growth. The flowering period is during April and May.

Greenhouse Hybrid Rhododendrons (*Idem*).—These plants make their growth more freely in a temperature intermediate between a stove and a greenhouse, with 55° as a minimum. When in flower, however, and during the summer the ordinary greenhouse suits them very well. The best soil is good turfy peat with a small proportion of sand, draining the pots very carefully, as water must be supplied liberally. Fuller notes on this subject will be published in a few weeks' time.

Covent Garden Market Prices (*E. M. R.*).—Your inquiry, which we print, was forwarded to our market reporter, whose reply is appended. Question: "Will you be good enough to inform me in your correspondence column whether the prices quoted in your paper for fruit and vegetables are those obtainable by producers, or are they merely what wholesale customers are paying to the occupants of Covent Garden Market?" Answer: "We know of no distinction between the price the wholesale man pays and the price the grower receives."

Maggots in Begonia Leaves (*Saxoring*).—The leaves are destroyed by a leaf-mining maggot, the maggots hatching from eggs that are deposited by a small fly similar to the Celery fly. These leaf-mining insects are very destructive to Chrysanthemums, Beet, Cinerarias, and other plants that they attack, but we have not before seen them infesting Begonias. We have seen them destroyed in Celery by a mixture of softsoap and petroleum prepared as follows:—Take 2 ozs. of softsoap and half ounce of washing soda, put these into a two-gallon stone bottle, and pour upon them one gallon of boiling rain or soft water; stir till the whole is thoroughly mixed, then add 4 ozs. of petroleum, stir and shake again, then fill up the bottle with another gallon of boiling rain water. When cool strain through muslin or other suitable material, and apply with a syringe or spray distributor in the evening, not in the morning, as if the sun shines on the plants before they are dry they may be injured. We shall be glad if you will try that remedy experimentally on your Snowflake Begonias, and favour us with the results.

Melons Gummy (*J. S. G.*).—Gummy is a consequence of too rich soil, too much moisture, and too little heat. The result is a gangrene or ulcerous exudation, and very distinct from canker, which, however, is due to over-much moisture, with probably a deficiency of silica and lime in the soil, with too much organic matter, resulting in crude imperfectly elaborated growth, especially in a dull period. The softened places are full of fungus threads and spores, usually belonging to a fungus very common in Cucumbers, succulent fruits, and even Grapes, also Peaches and Plums, or in those the plants of which require a siliceous and calcareous soil. The only remedial measures are to cut away all the affected parts where practicable and burn them. Rub the others with quicklime, and repeatedly until dry. Keep the plants drier, not giving any water at the roots, or only to prevent flagging; and when giving it keep it from the growths or stems as much as possible. Admit a little air constantly, so as to cause a circulation and consequently evaporation from the foliage, and afford more heat, which in your case is practically excluded; therefore keep the house drier, and husband the sun heat.

Watering with Contents of Cesspool—Using Water from Water-works (*C. C.*).—The inside of the tank being tarred would have a deleterious effect upon the contents of the cesspool, tar water being highly injurious to plants. That, we think, is in a great measure the cause of the mischief; but if the tar has been on some time and thoroughly hardened the evil would be the result of the liquid being too strong. The contents of the cesspool receiving the drainings of a w.c., sink, and laundry are not safe to use for Tomatoes and Vines, as the liquid is too variable in strength, containing the salts of potash and soda too powerful for such active feeders. Use liquid only of known strength, such as cow dung, 1 peck to thirty gallons of water, or soot, 1 peck to sixty gallons, sulphate of ammonia, 1 lb. to thirty gallons of water. It would be much the best plan to fill the tanks with water, especially if it would have the tendency to warm it before use. It is best in all cases to have the water of the same temperature as that of the house in which the plants are growing, and it is not judicious to syringe with water less in temperature than the house, but it is safe, as we have used hose pipes for many years, both for syringing and watering borders, without any prejudicial effect, except that it retards growth, and is not advisable on that account. All water used should, if anything, be slightly warmer than the mean of the house, and if used loss in temperature it retards the growth proportionately, and damping with cold water is so much taken from the heat, which has to be made up at the expense of fuel or loss of growth. Cold rain checks growth, warm showers accelerate growth; the first is productive of disease, the latter of health. For cool houses the water may be used from the mains, for warm houses it should be warmed in tanks before use.

Melons Bitter (*Kempsford*).—It is a consequence of badly elaborated sap, and is common to plants grown in dung-heated frames after a period of hot weather succeeded by dull, wet, and cold days. During the hot weather the sap is highly elaborated and assimilated, and the roots strike down in quest of moisture to maintain a supply of nutriment equal to the demand of the foliage, which from the evaporation is very great in bright weather, and the fruits as a rule do not increase greatly in size, but become very firm and hard at the rind. Such fruit, having the dry and warm atmosphere continued to ripening, is very high in flavour; but a period of dull weather setting in before the fruit is ripe the sap is not so highly elaborated,

and the fruit is constantly stagnated through the imperfect assimilation of the sap, and it not infrequently spots or gangrenes and speedily decays. The fruit ripening is in places hard in the flesh, and has a most disagreeable sweetness mingled with bitterness. The only preventive that we have found available is to raise the fruit on inverted flower pots well above the foliage on the setting in of a dull period after bright weather, placing a piece of slate slanting on the pot, as the damp otherwise rises through the hole of the flower pot and causes the decay of the fruit. The vine on which the fruit is borne is cut about half-way through a foot below the fruit, which diminishes the supply of sap, in doing which care must be taken not to sever the connection. We also line the bed with stable litter, placing the smallest at the bottom and the longest on the top, unless we have lawn mowings available, when we place the material against the sides of the frame all round, and cover with a little long litter. In either case a gentle heat is obtained, water is withheld, and a little air admitted at the back of the frame, which causes a circulation of air and evaporation, the fruit ripening perfectly. Ventilation should be provided constantly night and day. By these means we have had good fruits from frames in October. The demand for Melons on and after the 12th of August is the greatest in the year, and that is the time Melons have the tendency to become bitter, and which we consider is entirely due to the weather being so variable, and which can only be overcome by a prompt attention to the linings, so as to secure to the plants the requisite warmth and air to promote evaporation and the assimilation of the sap. Keep the plants drier, warmer, and more freely ventilated.

Names of Fruits.—The names and addresses of senders of fruit to be named must in all cases be enclosed with the specimens, whether letters referring to the fruit are sent by post or not. The names are not necessarily required for publication, initials sufficing for that. Only six specimens can be named at once, and surplus fruits beyond that number cannot be preserved. (*J. P. W.*).—Your specimens are very immature, but we shall do our best for you. 1, Not known; 2, Williams' Bon Chrétien; 3, Not known; 4, Glou Morceau; 5, Easter Beurre; 6, Forellé.

Names of Plants.—We only undertake to name species of plants, not varieties that have originated from seed and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in firm boxes. Slightly damp moss or soft green leaves form the best packing, dry cotton wool the worst. Not more than six specimens can be named at once. (*Rosa*).—We are always pleased to name any specimens that reach us in good condition, but we can only guess to what plant flowers like those received belong. It appears to be a small-flowered *Odontoglossum*, but some information respecting its habits would have assisted us. (*R. A. de P.*).—*Impatiens glandulifera*. (*R. P. O.*).—1, *Aspidium amabile*; 2, *Asplenium Filix-foemina* var. *plumosa*; 3, *Pellaea rotundifolia*. (*R. W.*).—The plant is *Rubus fruticosus roseus flore-pleno*, and it is an interesting circumstance that it should have been found wild as you state.

COVENT GARDEN MARKET.—AUGUST 18TH.

BUSINESS settling down quiet with heavy supplies, and prices giving way.

FRUIT.

	s.	d.	s.	d.		s.	d.	s.	d.
Apples	1	6	3	6	Melon	1	0	2	0
Cherries	2	0	8	0	Oranges	100	6	0	12
Currants, Black ..	2	3	2	6	Peaches	per doz.	4	0	10
" Red	2	6	0	0	Pine Apples English ..	lb.	2	0	3
Figs	1	6	2	0	Plums	1	sieve	0	0
Grapes	1	0	3	0	St. Michael Pines ..	each	4	0	6
Lemons	10	0	15	0	Strawberries	per lb.	0	6	1

VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.
Artichokes	1	0	0	0	Lettuce	dozen	1	0	1
Asparagus	0	0	0	0	Mushrooms	punnet	0	6	1
Beans, Kidney ..	1	0	3	0	Mustard and Cress ..	punnet	0	2	0
Beet, Red	1	0	2	0	Onions	bunch	0	3	0
Broccoli	0	0	0	0	Parsley	dozen bunches	2	0	3
Brussels Sprouts ..	0	0	0	0	Parsnips	dozen	1	0	2
Cabbage	1	6	0	0	Potatoes	cwt.	4	0	5
Capsicums	100	1	6	2	" Kidney	cwt.	4	6	5
Carrots	0	6	0	0	Rhubarb	bundle	0	2	0
Cauliflowers	3	0	4	0	Salsafy	bundle	1	0	1
Celery	1	6	2	0	Scorzonera	bundle	1	6	0
Coleworts	2	0	4	0	Seakale	per basket	0	0	0
Cucumbers	0	3	0	6	Shallots	lb.	0	3	0
Endive	1	0	2	0	Spinach	bushel	3	0	4
Herbs	0	2	0	0	Tomatoes	lb.	0	2	0
Leeks	0	3	0	4	Turnips	bunch	0	4	0

CUT FLOWERS.

	s.	d.	s.	d.		s.	d.	s.	d.
Abutilons	2	0	0	4	Lily of the Valley, 12 sprays	0	0	0	0
Arum Lilies	4	0	6	0	Marguerites	12 bunches	3	0	6
Asters	0	3	0	6	Mignonette	12 bunches	1	0	4
Azalea	0	0	0	0	Myosotis	12 bunches	2	0	3
Bouvardias	0	6	1	0	Pelargoniums, per 12 trusses	0	9	1	0
Camellias	0	0	0	0	" scarlet, 12 trusses	0	3	0	6
Carnations	1	0	3	0	Roses	12 bunches	2	0	9
"	3	0	6	0	" (ladoor), per dozen	0	6	2	0
Chrysanthemums 12 blooms	0	0	0	0	" Tea	dozen	0	9	1
Cornflower	1	6	3	0	" red	dozen	0	8	1
Cowslips	0	0	0	0	" Moss	12 bunches	0	0	0
Daffodils	0	0	0	0	Primroses, Yellow, dozen	0	0	0	0
Epiphyllum	0	0	0	0	" dozen bunches	0	0	0	0
Encharis	2	0	4	0	Pyrethrum	12 bunches	4	0	6
Gardenias	2	0	4	0	Spiraea	12 sprays	0	0	0
Hellebore	0	0	0	0	Stephanotis	12 sprays	2	0	3
Hyacinths, Roman, 12 sprays	0	0	0	0	Stocks, various 12 bunches	3	0	5	0
Iris	0	0	0	0	Sunflowers	0	6	1	0
Lapageria, white, 12 blooms	0	0	0	0	Sweet Peas	12 bunches	2	0	4
Lapageria, red	1	0	2	0	Sweet Sultan 12 bunches	3	0	4	0
Lavender	4	0	5	0	Tropeolum	12 bunches	0	0	0
Lilium candidum 12 blms.	0	0	0	0	Tuberose	12 blooms	0	4	1
"	0	0	0	0	Violets	12 bunches	0	0	0
" longiflorum, 12 blms.	3	0	6	0	" Czar, Fr., ..	bunch	0	0	0

PLANTS IN POTS.

	s.	d.	s.	d.		s.	d.	s.	d.
Aralia Sieboldi ..	dozen	9	0	to 18	0	Ficus elastica ..	each	1	6
Arbor vitae (golden)	dozen	0	0	0	0	Fuchsia	per dozen	4	0
" (common)	dozen	6	0	12	0	Foliage Plants, var.	each	2	0
Arum Lilies	dozen	0	0	0	0	"	per dozen	4	0
Bedding Plants, var.	doz.	0	0	0	0	Heliotrope	per dozen	4	0
Begonias	dozen	4	0	9	0	Hydrangea	per dozen	6	0
Calceolaria	per dozen	3	0	6	0	Ivy Geraniums ..	per dozen	3	0
Cineraria	dozen	0	0	0	0	Lilium anatum ..	per doz.	12	0
Cockscombs	per dozen	3	0	6	0	" lancifolium ..	per doz.	3	0
Crassula	per dozen	0	0	0	0	" longiflorum ..	per doz.	18	0
Cyperus	dozen	4	0	12	0	Lobelia	per dozen	3	0
Dracena terminalis, dozen	30	0	60	0	0	Marguerite Daisy	dozen	6	0
" viridis	dozen	12	0	24	0	Mignonette	per dozen	3	0
Erica, various	dozen	0	0	0	0	Musk	per dozen	2	0
Eunymus, in var. ..	dozen	6	0	18	0	Myrtles	dozen	6	0
Evergreens, in var. ..	dozen	6	0	24	0	Palms, in var. ..	each	2	6
Ferns, in variety ..	dozen	4	0	18	0	Pelargoniums, scarlet, doz.	3	0	6
						Pelargoniums	per dozen	6	0



AMONG THE CROPS.

As the crops ripen and the golden hue of harvest imparts richness to the corn fields, we spend more time each day among them, watching the development of growth and the swift change from fulness of growth to ripeness. Many a valuable lesson do we learn in this way, many a hint do we gain for our guidance in the future, and it is now at the beginning of harvest that our plans for the work of another year are thought out, our arrangements made for the work of preparation for other crops to follow harvest work as speedily as possible. It is now that our horse power is taxed most heavily, and the farmer who has steam tackle to break up his stubbles is indeed to be envied by less favoured mortals. Every day is precious now, not only for saving the corn but for breaking up and cleaning the land, for if we wait till harvest is over before doing anything to the stubbles, wet weather often sets in and autumnal clearing is out of the question.

Pea harvest will probably extend over a month. We saw Pea-carting being done upon several farms three weeks ago, and we know several farms where Peas are being cut now. Frequent journeys by road and rail enable us to see much of farm work in East Anglia, and it is to this district that our notes in this paper apply. While making due allowance for the difference in early and late kinds of Peas, it must not be forgotten that Pea-sowing was much hindered by unsettled weather last spring, hence the difference in the time of ripening now. We have had no Peas grown upon our poor farms this year, rich land and the best seed being conditions of success in Pea culture to which we could not attain this season, and therefore we devoted the land to the cultivation of crops more likely to afford some profit. More than one field of Peas have we seen this season where the Peas were almost hidden from sight by wild Oats. The faults were poor foul soil, and inferior or small seed; the remedy to be applied to practice next season, soil well cleaned, stirred deeply, and well stored with fertility, and large, clean, carefully selected seed.

Winter Beans again prove superior to spring Beans. The stems, though not so long as the crop of last year, are well set with pods and the crop is a good one. To ensure this we must have deep rich land, nitrogen, potash, and phosphates being abundant in the plants, potash being in almost as large a proportion as nitrogen. In a close comparison of decimal parts of these manurial constituents we have of nitrogen 135 parts, potash 110, and phosphate 90. In Peas, on the contrary, we have only 100 parts of potash to 180 of nitrogen and 115 of phosphates. A knowledge of such facts proves of material importance in the preparation of land for such crops. Beans under high cultivation are generally a profitable crop, a first-class yield being 5 to 6 quarters per acre of ripe Beans, weighing from 66 to 68 lbs. per bushel.

Some of the best crops of Beans we have seen this season were sown by means of a plough drill, an excellent plan in a wet autumn, especially on heavy land farms, all trampling of the soil after the ploughing being avoided till spring.

From our own observation we think the culture of Oats is taking the place of Wheat to a considerable extent in this country, nor can this be wondered at if it be remembered that really good Oats generally command a ready sale at 20s. per quarter, and that it is possible to have crops yielding from 10 to 12 quarters an acre with straw 6 feet high. To achieve such results we must have the soil clean and well stored, and those three indispensables—nitrogen, potash, and phosphorus—applied specially for the Oat crop. Yet how seldom do we find any manure used for an Oat crop! If any of our readers are disposed to question our statement of possible results (and we know full well there are such), we would say, "Have you tried to grow Oats in the best way?" In purchasing seed Oats last season, a corn factor said it was a shame to use the best selected samples for seed when the small tail corn would certainly grow as freely. "Aye," said we, "no doubt it will grow, but have you ever thought about the difference in strength of the growth from large and small seed?" To take all possible pains in the preparation of the seed bed, yet to pay no attention to the quality of the seed, is indeed to spend our strength for nought. While advising a more extensive culture of Oats, we would confine it within reasonable limits, and not rush into extremes in this or in any other branch of farm practice. Repeatedly have we called attention to the advantages attending the culture of winter Oats, and under certain conditions a good white spring Oat and Black Tartarian may be grown profitably. A field of "Black Tartars," as they are called in Suffolk, which will be ready for harvest before this article is printed, was sown late in spring after Swedes, upon which ewes and lambs had been folded, and the crop is a fairly good one. Other crops of this Oat sown earlier are much better, but we mention the late crop to show one of the uses of Oats. Some years ago we had a field of Peas attacked so badly by rooks soon after the seed germination had taken place, we lost the Pea crop, but we managed to have a very good crop of Oats instead of it.

(To be continued.)

WORK ON THE HOME FARM.

Harvest work has begun in unsettled weather, but we have been able to thresh the winter Oats upon three of our farms, and to get the chaffing of the straw done. This enables us to avoid the purchase of Oats for the horses employed at harvest work, the tail corn being used first for home purposes. Next week we may be able to give the weight and price of this corn, for we intend selling most of it, and we shall have the option of using the money either for the purchase of sheep or for harvest labour. We mention this matter, because we regard it as a sign of good management when a farm is not only self-supporting, but when there is some farm produce to sell every week or two throughout the year. A large balance at the bank is a good thing no doubt, but we prefer having most of our farming capital at work upon the land, if only it yields a fair profit. We have begun cutting winter Beans; spring Oats are also in hand, and some pieces of forward Barley have been mowed. It is unusual for Barley to be ready for harvest simultaneously with Wheat, as some of it is this year, but the season is a peculiar one, and there is much difference in the condition of corn crops. Root crops thrive apace, and late sown white Turnips grow with marvellous rapidity, so that the work of hoeing and thinning the plants has pressed heavily upon us. We are glad, however, to have this work nicely in hand before the full pressure of corn harvest is upon us. When the thinning is once over a frequent use of horse hoes keeps down most of the weeds. A few acres of late roots prove very useful in spring for folding the breeding flock upon. The lambs run forward and eat off the green tops and much of the roots too, for forward lambs consume a large quantity of food in March, and we shall do well now to see that all possible provision is made for them then by sowing green crops for use with or after the roots. Land required for Rye will be got ready for sowing as it is cleared of the summer crops, for it is important to sow Rye early in September for early spring grazing. Poor land is unsuitable for such a crop. To induce a free early growth in spring, as well as a strong plant in autumn, the soil must be well stored with fertility. Not unfrequently are we told that any odd piece of land answers for such a crop. Certainly we cannot agree, for it is all-important that the Rye should be both strong and forward in growth before we begin spring folding upon it. We have shown how the application of a hundred-weight per acre of nitrate of soda in February promotes growth, but we must not forget the importance of such growth from the germination of the seed.

THE HESSIAN FLY ON WHEAT.

MR. CHARLES WHITEHEAD, Barming House, Maidstone, writes to the papers as follows:—It seems that the Hessian fly, a fearful scourge to corn crops, has at last taken up its abode in England. It was feared that it had come to this country in 1800, but it was settled decisively by authorities that it was not the Hessian fly that was causing harm to the corn plants, but another insect of a different genus. Its appearance here recently was in this wise: Miss Ormerod, the consulting entomologist of the Royal Agricultural Society, received information lately that Wheat and Barley crops near Hertford were attacked by a new insect, which had taken up its position in the second joints of the stems of the plants above the roots, and had caused a disorder like "rootfall" or "gout" in the stems. Upon examination it was seen that the pupæ of an insect closely resembling in colour and shape somewhat small and elongated Flax seeds, or linseed, were present under the leaves or blades immediately covering the stems of the plants. It was ascertained from the farmer by Miss Ormerod that these pupæ had recently changed from larvæ, which were translucent or transparent maggots with greenish stripes under their skins, and had evidently been the actual causes of the harm to the crops. This harm was apparent in the scrawled state of the straw and its general fallen condition, as well as in the lightness and deficiency of the grain. After much consideration and consultation of authorities and microscopical investigation, it was decided that these pupæ were those of the Hessian fly, *Cecidomyia destructor*, say, and that consequently this insect, which has wrought so much injury to corn crops in Germany and in the United States and Canada for more than a century, has now visited this country.

In these circumstances I earnestly ask all corn farmers to take all possible means to stamp out this fresh foe at once. To effect this it is most desirable that all who have Wheat or Barley crops showing any signs of root-falling should immediately examine the plants, and particularly their leaves or blades near the second joints from the ground. If they find small pupæ chestnut-coloured, like small Flax seeds, about one-tenth of an inch in length, they should cut the infected plants above the second joint, either by setting the reaping machines high or by reaping them by hand high, in the old-fashioned style so dear to partridge shooters. This will prevent the possibility of the pupæ being carried into barns and stacks with the straw, and will ensure that they are left in the stubble. Directly after harvest the stubble should be burnt, or it should be ploughed deeply in so that the pupæ might have no chance of changing into flies, either in the autumn or ensuing spring, to spread the attack among the growing crops.

As it seems most probable that this insect was first brought to the infested fields in straw with manure from London, which straw had been imported from America or Germany in packing cases or crates, it is most essential that all manure from the cowsheds and stables of London and other cities and towns should be mixed at once in order that the heat of fermentation might kill the pupæ upon it. It need scarcely be said that corn grown upon fields where this insect has been found should on no account be reserved for seed corn. I should state that yesterday I was informed that this Hessian fly had been discovered in corn crops in Essex, so I fear that unless infinite precautions are taken we shall have it permanently established here, as in the countries named above. The Royal Agricultural Society issued a note of warning last week concerning this, together with suggested methods of prevention. Their entomologist, Miss Ormerod, Dunster Lodge, Isleworth, will be pleased to give full information upon the subject, and I will at once give any assistance in my power to those who may apply to me.

EXCELSIOR CORN AND MANURE DRILL.—The Chadborn and Coldwell patent excelsior corn, seed, and manure drill, recently described and illustrated in our columns, was awarded the first and highest prizes (special silver medals) at the following Shows:—Cirencester, July 27th, 28th, 29th, and Birkenhead, July 28th, 29th, 30th.

METEOROLOGICAL OBSERVATIONS.


CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude, 111 feet.

DATE.		9 A.M.					IN THE DAY.					Rain
1886. August.		Barometer at 32° and Sea Level	Hygrometer.		Direction of Wind.	Temp. of Soil at 1 foot.	Shade Temperature.		Radiation Temperature.			
			Dry.	Wet.			Max.	Min.	In sun.	On grass		
		Inches.	deg.	deg.		deg.	deg.	deg.	deg.	deg.	In	
Sunday	8	30.050	68.3	62.0	S.W.	62.3	76.8	62.3	120.6	56.6	0.087	
Monday	9	30.034	63.3	59.8	S.W.	62.6	71.7	60.4	103.6	58.8	0.142	
Tuesday	10	29.685	61.0	60.4	N.	62.5	64.8	60.5	84.7	57.9	0.013	
Wednesday ..	11	29.959	59.2	51.3	var'ble.	61.2	69.1	50.6	120.8	46.2	—	
Thursday	12	29.985	60.1	55.5	S.W.	60.4	68.8	47.3	110.3	41.8	0.102	
Friday	13	29.876	64.0	60.0	S.	59.8	70.7	56.2	119.2	54.8	0.029	
Saturday	14	29.891	60.2	57.7	N.E.	60.2	69.2	53.3	110.4	47.2	—	
		29.867	62.3	58.1		61.3	70.1	55.8	109.9	51.9	0.323	

REMARKS.

8th.—Fine and warm early, overcast later, rain at night.
9th.—Dull, with slight showers in morning, fine afternoon and evening.
10th.—Wet early, dull drizzly morning, fair afternoon with a little sunshine.
11th.—Fine bright pleasant day, occasional spots of rain in evening.
12th.—Fine, but with little bright sunshine, rain at night.
13th.—Dull early, showers in morning and occasional sprinkles of rain in evening.
14th.—Overcast morning, fine afternoon and evening.
An unsettled and cool but not unpleasant week; temperature about the same as that of the preceding week, and one degree above the average.—G. J. SYMONS.



COMING EVENTS

26	TH	Stoke-on-Trent Show.
27	F	Sandy Show (Beds) and Hinckley.
28	S	
29	SUN	10TH SUNDAY AFTER TRINITY.
30	M	
31	TU	
1	W	Bath and Oxford Shows.

VINES AND GRAPES.

AT the first glance it is possible that some readers of the Journal may fail to see the necessity for the conjunction in this case, implying as it does a difference for which there is no justification. If you are going to write on Vines why not be content with the simple heading? for surely Grapes are "understood," and Vines and Grapes naturally go together. It is easy to imagine some such reasoning as is embodied in the last sentence being called into action on the appearance of the dual heading to this chapter; but it is necessary. There is no doubt Vines and Grapes ought to go together, but it is very certain they do not in all cases, or at least the examples of the latter, if they exist, are often miserably inferior and not worth calling Grapes. That they "naturally" go together is quite true; but then man interferes and sometimes obstructs nature. No doubt he is quite ignorant of this; indeed he may imagine he is assisting by his skill and artificial manipulation, when he is doing exactly the reverse. It is painfully evident that there are plenty of Vines without Grapes. What is more, there are numbers of Vines practically fruitless, and consequently vexatious, that might be fruitful and satisfactory without spending a penny on them. The change may be effected by pruning, and pruning alone.

The method of closely spurring in the laterals that spring from the main stems or rods of Vines has become so deeply embedded in the minds of men as the only right method, that it is practised with rigid uniformity and regardless of the condition of the Vines. That is not only a great mistake, but worse: it is a stupid blunder that is perpetuated yearly in hundreds of grapeless vineries. That is no mere figure of speech, but the plain expression of a sober fact.

The orthodox system of pruning Vines by cutting off the laterals to the lowest bud, or within an inch or so of the rods, is so common, and in thousands of instances so satisfactory, that not a few persons, gardeners and amateurs, are convinced that it is the "natural system," and that no other can be right. It is not the natural system, but, on the contrary, altogether artificial and even arbitrary. It answers admirably, it is true, and is adopted by the best cultivators. This proves, first, what a tractable plant the Vine is, and how amenable to training; and secondly, how great is the skill of gardeners who produce such splendid results as are seen at exhibitions, and not there only, for vast quantities of the finest of Grapes are grown that the show-visiting public never see.

Not one word will be said against the spur system of pruning where it answers—that is, where the Vines are made to assume a character to which the method applies; and not one reader of these notes will be urged to change his plan of action who produces satisfactory crops of Grapes. But there are Vines all over the country to which the system in question does not apply, and to force it on them is foolish. It may be right for one class of Vines, and it is right; but it is utterly wrong for others. In fact, instead of being the

best method for them, it is the very worst that can be adopted.

Vines are no more naturally adapted to the spur system of pruning than Peaches are, and Peaches can be managed to form spurs, and these bear abundant crops just as well as Vines can; but it is the fashion to spur Vines and not to spur Peaches, that is all. Being the fashion, young men are trained in it, and become competent; indeed the majority know of no other plan, and believe there is no other worthy of attention. So long as they have to deal with Vines that have been trained to it as well as they have, all is well; but if they happen to take the charge of Vines that have by accident, neglect, or mismanagement gone out of training, their pet system if applied to them, as it usually is, fails. They, however, do not perceive this. They blame the Vines or past managers. The Vines may not be in good condition, and the previous management may have been faulty. All that may be granted, but it does not quite exonerate the present manager for his mistake in clinging to a system that is foreign to the character of the Vines for which he is in the meantime responsible. It is his interest and his duty to grow Grapes, and if he cannot produce them by one method of pruning he ought to adopt another. If he is an observant man he need not waste a year in trying the orthodox pruning on Vines and failing, as he may form a sufficiently good idea at the outset whether the Vines will endure that close mutilation or not, and remain fruitful. The great majority probably will, but there is a large minority that will not, and minorities cannot be ignored nowadays.

There are two types of Vines to which the spur system of pruning cannot be profitably applied—namely (1), Vines that are old and weak, producing thin wood and small foliage; and (2) Vines that grow exuberantly, producing long-jointed shoots and large thin Rhubarb-like leaves. The eyes or buds at the base of weak laterals on old or nearly worn out Vines are so small that they can only produce similarly weak growths in turn, too weak for bearing fruit, and not only so, but the leaves near the base of the laterals are so inferior, small, and destitute of tissue that they cannot assimilate and store the requisite matter in the buds for even the formation of embryo bunches. On such Vines the leaves get larger as the distance increases from the base or rod, and the buds in the axils of the fourth or fifth leaf are as large again as those "supported" by the first or second; and if the wood be examined microscopically it will be found to contain far more starch granules in the portions where the better foliage has been than below, where the leaves have been small and withered before the summer was half over. The laterals referred to, and there is no lack of them, are about a quarter of an inch in diameter, more or less, or say less than an inch in circumference. Wood of this character usually ripens well. Now let anyone, no matter who nor where, who may have Vines of that character cut back half the laterals to the lowest bud, or even the second eye from the rod, and let the remainder or alternate laterals be shortened 6 or 8 inches from the base, or wherever the boldest, and yet round and firm, buds are situated. Observe the condition, "firm" buds. The result of this experiment will show how wrong it is to adhere to the short-spur system of pruning in the case of such Vines, for not only will the growths that issue from what may be termed the "long pruned" portion be decidedly stronger than those issuing from the small basal buds, but the former will produce useful bunches and the latter none at all, or here and there a poor attempt ending in a dozen or so of small berries.

Let persons who have Vines of the character described thin out the laterals now if crowded, leaving the strongest without injuring the foliage, and when the leaves fall shorten to the best buds, and next year they may expect twice the weight of Grapes they have this season.

If it were necessary a dozen instances could be given where, owing to a change of pruning of the nature indicated,

the crops of Grapes have been much more than doubled the first season; but one must suffice for the present. In a suburban garden near London stands a solitary vinery occupied with very old Vines. The Grapes borne during the last four or five years have not been worth looking at. The Vines were regularly spurred on the orthodox plan. Last autumn the gardener was advised to change his plan and cut out the weak laterals entirely, shortening the stronger as recommended above. He sent for his adviser last week and pointed with pride to a houseful of Grapes, certainly thrice the weight of last year's crop, and of far better quality. The man is quite proud of the Grapes and so is his master, who had made up his mind that the Vines were worn out and would bear no more fruit. Instead of that being so there is an abundant supply for the family, and more than they can consume. Nothing whatever has been done to effect this gratifying change beyond the change in pruning, and thus the improvement has been brought about without the expenditure of one extra penny in management.

Gross-growing or unduly exuberant Vines, with their roots deep down under a walk or lawn, absorbing water with "nothing in it," may be made to bear far more and better Grapes by a change from the close-spur method of pruning. Such Vines do not start "kindly," but push stubbornly and weakly, the roots being in a cold medium; but eventually, as the soil is slowly warmed by a few weeks or months of sun, the growth becomes almost rampant. You may pinch, pinch, pinch, but still they grow; but the base leaves are poor, through the stubborn start, and the buds in their axils thin and pointed. The growths above are stronger, the foliage better, and the leaves bolder. To prune such Vines closely is to prevent their bearing. Instead of training laterals a foot apart or less along each side of the rods, then spurring them in winter, it is far better to have the laterals 3 or 4 feet asunder, training up these young canes to the main rods, or where they can be disposed so that the sun can act directly on all the leaves, taking out the points of the shoots when 5 feet long or so, and then remove about a fourth part of their length when the leaves fall. In that way such Vines will bear well that under close pruning are practically barren. Care is necessary in disbudding the following spring, doing this liberally and making due provision for the maturation of further growths for the following crop. "But such Vines may be improved by lifting them and making new borders to be filled with surface roots," say the close pruners. No doubt. But there are not infrequently impediments in the way which the gardener is powerless to remove. He is not permitted to do as he wishes, so must do as he can; and he will act wisely in trying a different style of pruning if he cannot get Grapes "on the spur."

A few years ago some twenty-years-old Vines were lifted, and the roots spread near to the surface in a new border; but there was one Vine perhaps a hundred years old. The roots went "straight down" quite below the bed of the new border, which was made nearly 3 feet deep. The owner would not have the old Vine disturbed. It started later than the others, but before the summer was over the growths extended more persistently than any. The raised Vines, with roots near the surface of the border, and short-jointed wood and medium-sized leaves like stiff brown paper, near the roof, could be spurred to any extent, and never failed to produce excellent Grapes; but the old Vine pruned similarly was a complete failure; yet with young canes trained in as above described as many Grapes were obtained and as good as from any Vine in the house.

Judging from the habit of pruning on the orthodox method regardless of the condition of Vines, it would seem as if gardeners thought more about the appearance of the rods in winter than anything else; but nine out of ten of the owners of Vines want Grapes, and the cultivator who produces the most and the best gives the greatest satisfaction, and is in a far better position than he who prunes as he

imagines in the "proper" manner, yet produces comparatively inferior crops.—*EXPERIENTIA DOCET.*

HEATING BY HOT WATER.

[Read before the Members of the Preston and Fulwood Floral and Horticultural Society, August 7th.]

MAXIMUM DENSITY OF WATER.

WATER presents the remarkable phenomenon that when its temperature sinks it contracts to 4° Centigrade or 39.2° Fahr., and as it contracts it increases in density. For instance, a quantity of water at 45° Fahr. is heavier and less in bulk than the same quantity at 50° or 60° Fahr. At a temperature lower than 4° Cent. or 39.2° Fahr. water expands and decreases in density till it reaches the freezing point. The point 4° Cent. or 39.2° Fahr. is called the point of maximum density of water. In winter, owing to exposure to the cold air, the temperature of lakes and rivers falls. The cold water sinks to the bottom, and a continual succession of currents is formed until the whole has a temperature of 39.2° Fahr. The cooling still continues on the surface, but these surface layers, which are now below 39.2°, are lighter, and so remain on the surface, and ultimately freeze. Water used in practice seldom reaches the point of maximum density. If it is drawn from water mains, which are placed below the surface of the ground 2 feet 6 inches, it will rarely be found lower than 45° Fahr.

CIRCULATION.—All who have poured warm water into a tank of cold know that the former rises to the surface, because it is lighter, or in other words is forced to that position by the greater weight and density of the cold. On this principle the water when heated in the boiler rises to the surface and makes its escape into the flow pipe provided for the purpose. The space in the boiler is refilled by the water from the return pipe. The colder or heavier the water in the return pipes the more rapid is the circulation. The pipes and air taps being satisfactorily arranged, circulation will not fail as long as heat is applied to the boiler, and the water leaves at a higher temperature than that at which it re-enters. But if it were possible to raise the temperature of the water throughout the whole arrangement to 212° Fahr.—that is, the boiling point of water, circulation would cease and the generation of steam take place. It is impossible to accomplish this in large or moderately large arrangements, because the water is cooled by radiation and the transmission of heat to the houses or various structures to be warmed in its transit through the pipes, and therefore re-enters at a much lower temperature than when it leaves the boiler. But when the boiler power is excessive and the water only travels a short distance it is possible to raise the temperature of the water in the return pipes to 212° Fahr.

The pipes and boiler to commence with should be full of water with 1 or 2 inches standing in the supply tank, not more. When the volume of water increases by the application of heat it will rise considerably in the supply tank; in fact, it will expand about one-thirtieth of its bulk; if the tank be small or nearly full of water to commence with it is certain to flow over. To prevent this, when the heating apparatus is large an overflow pipe should be arranged in the supply tank to carry away superfluous water into the nearest tank, water spout, or drain.

The difference between the low and high pressure systems is that in the former the water in the pipes very seldom exceeds 200° Fahr., while in the latter water is heated and circulated at a temperature of 300° to 400° Fahr. There are difficulties and dangers attending this system, as well as that of heating by steam, and as they are not applicable for heating garden structures they need not be further discussed.

THE STOKEHOLE.—In the arrangement of a heating apparatus, the selection of a position for a stokehole should be fully considered before the erection of horticultural structures are contemplated. The stokehole is often an after thought. It should be the first, for it must be easy of access for the conveyance of fuel by a horse and cart in all large arrangements. Wheeling the fuel for some distance during several months of the year entails considerable labour and adds materially to the expenditure. It should also be in such a position that it can be readily drained, if this is necessary, for nothing can be more disagreeable to the stoker than water in the fire hole. Undrained or badly drained stokeholes, and they are not a few, means the removal of the water by manual labour, which is costly, and must be avoided in all well-arranged schemes of heating. In the worst localities where draining is impossible it is important that a suitable boiler for the purpose be selected, but this must be referred to again when considering the estimate of various boilers. For the sake of appearance the position of the stokehole should be considered. Nothing mars the beauty of a garden more than a stokehole in its centre, for it proves an eyesore to all who frequent the houses. The principle, however, upon which the pipes are to be arranged must determine in a large measure the position of the stokehole.

PRINCIPLES UPON WHICH THE MAINS CAN BE ARRANGED.—There are at least three methods, the first being to allow the pipes to rise gradually from the boiler to their extreme limit; the second is to convey them horizontally; and the third to allow them to decline the whole distance they extend. To carry out the first satisfactorily the boiler must be arranged on the lowest ground, and perhaps then but little excavating would be needed for the stokehole; but this depends entirely upon the boiler employed. If the ground was level or nearly so it would be immaterial at which end of the work the boiler was arranged; to carry out the second plan, the lowest ground or a central position would be the best; but if very unlevel this system should not be practised. The third—namely, allowing the pipes to fall the whole of the distance they have to travel, or what is known in the north of the country as the “Hammond” principle, should have the boiler placed on the highest ground and the water carried to its highest point directly it leaves the boiler. Water can be circulated by this method, but it is much more complicated than either of the other two, and those not familiar with this principle should not attempt to practise it.

THE MAINS.—The arrangement of the mains must be determined by the ground unless a certain system is strictly adhered to and the ground excavated, if unlevel, in order to carry it out. When the ground is perfectly level or nearly so the mains may be carried perfectly horizontal and all the pipes in the houses on a higher level. Pipes fixed on this principle will work well, and the circulation of the water will be as free as if the whole of them were arranged on a gradual rise. Not only does the water circulate freely, but considerable labour is saved in the regulation of the valves. If the pipes were allowed to rise from the boiler they need not exceed 2 to 3 inches in each 100 feet, less would do, or more could be allowed if the ground rose sharply to the houses. For instance, if the ground was of such a nature that the pipes had to rise 18 inches or 2 feet it would be better to fix them thus than to excavate deeply for them. The system at Norris Green is arranged on ground which is highest at the centre. The pipes in this system rise 18 inches or more in 150 feet and then fall for nearly the same distance, thus leaving the mains at the extremity only 3 or 4 inches higher than they are where they leave the boiler. Three houses and two pits attached to the extreme end of the mains cost more to heat than thirteen other houses on the rising ground. This does not say much for forcing hot water downhill. This could readily have been remedied by keeping the pipes well up at the commencement, say 3 inches, and then have excavated the chamber 1 foot or more deeper on the rising ground, which would have made a difference of 15 inches in the level of the pipes and effected a considerable saving in fuel. The system of arranging all the pipes on the level is a good one, but where practicable a slight rise in the pipes is certainly advisable and insures circulation. Deep excavations in beating by hot water should be avoided, as they are costly at the commencement.

The mains if possible should always be arranged, if outside, under walks or in any position where they are easy to get at. When placed in inconvenient positions they often entail considerable labour in opening them out in case of a breakdown or in searching for leaks. These are liable to occur in the best schemes of heating, and therefore every precaution should be taken against placing the pipes in places where they are not readily accessible. It is a question whether the mains are best under cover—that is, in the houses or arranged outside independently of any of the structures that may have to be worked from them. Some boast that all their mains are arranged inside, and consequently no heat is wasted. I am familiar with several gardens in which this plan has been followed, and the pipes run along cemented and other walks, in chambers, and if anything happens cemented walks are destroyed when broken into. This is not the only objection to this plan, for the houses through which they must pass are often kept warmer in consequence than should be the case. This is a very serious matter in fruit and some plant houses. Each house should be heated independently of each other unless the pipes pass through a warm house and the one beyond only needs frost keeping out; but under these circumstances it is much better when the pipes enter each structure separately, which allows of the houses being utilised for any purpose without interfering with the adjoining one.

SIZE OF THE MAINS.—The size of the mains from the boiler is one of importance, and upon which there exists a variety of opinions. In large schemes of heating, say when 8000 to 10,000 feet of 4-inch piping have to be heated from one or more boilers, I certainly advise the use of 6-inch mains from the boiler, say for a distance of 20 feet, then 4-inch are large enough for the remaining distance the water may have to travel. If the arrangement is of a more limited scale 4-inch pipes are large enough from the boiler. I am no advocate for small mains from the boiler to feed 4-inch pipes in any arrangement where say more than 400 feet of piping has to be heated from the boiler. I have known small systems work admirably with 2-inch

mains from the boiler. Four-inch connections from small boilers would block up the flues required for draught if they came in contact with them.

THE CHAMBER FOR THE MAINS.—Its construction is another important item that cannot be overlooked. In many heating arrangements the chambers that contain the pipes are a disgrace, and so constructed that they have to be pulled down every time repairs are needed, or the pipes assist in their own ruin and destruction. Good chambers should be provided, or else the durability of the pipes cannot be ensured. The chambers for flow and return main pipes should not be less than 18 inches wide, 2 feet would be all the better, and the same depth. The bottom should be bricked and then grouted to prevent moisture being drawn from below by the heat of the pipes. The side should be of 9-inch brickwork and the top covered with flags laid carefully with mortar. The joints of the flags should be made perfectly watertight either by mortar or a little Portland cement. The chambers should be of such a nature that moisture from without can be entirely excluded. If the pipes are capable of drawing in moisture they corrode quickly and are destroyed in a few years. The mains in the chamber can be arranged side by side, or they can be placed one above the other. Supports are necessary to keep them in position; some place them upon bricks, others upon cast iron supports, and others upon three-quarter-inch wrought iron bars, which are built into the brickwork as the building of the outer walls of the chamber proceeds. If the latter are employed with no side stays the pipes are invariably twisted into all shapes. The supports cast on purpose are decidedly the best with here and there a stay from the walls to keep the pipes in their proper place. The pipes must not be built in with brickwork or surrounded with mortar, for it is certain to destroy them in time if they do not break in such positions through expansion. When the pipes pass through brick walls a small cavity should be left round them, so that they have room to expand in all directions if necessary.

After the mains are fitted it is a usual practice to cover them up as they are, but this is a great mistake. They should be coated with red lead and oil worked well into the pores of the iron, which will preserve them from corrosion for many years. This also prevents the escape of heat from the mains, which is an important matter in the saving of fuel and the conveyance of heat to the quarter where it is required. The preservation of the main pipes is a matter of vast importance, so also is the radiation of heat from the mains. They should be coated with felt or silicate cotton or some other bad conductor that is prepared for the purpose.—WM. BARDNEY.

(To be continued.)

GROWING FRUIT FOR MARKET.

EARLY PEARS.

COMING in just after bush fruit is over early Pears are particularly valuable. They command a ready sale, but as a rule are handicapped by foreign importations of larger kinds. Who will look at Green Chisels, Doyenné d'Été, or Citron des Carmes, when they can have Williams' Bon Chrétien at a not materially higher price? It is very tantalising to have a fruit garden just likely to become profitable, to find the market pre-supplied with foreign produce. Free trade and railway rates in favour of the importer may be highly satisfactory to merchants and the masses; but it is enjoyed at the sacrifice of the interests of the home grower. I do not wish for protection, as that is acknowledging ourselves beaten in fair competition, but surely our products ought to be conveyed to market at a rate that would encourage growers to send them to our great centres of industry without feeling they are doing so at a great disadvantage on freight alone as compared with foreigners. The railway companies do everything they possibly can or dare to drive the produce of the home grower out of the market. I have no faith in money-grubbing directors shielding themselves behind the shareholders and making promises that the matter shall be inquired into, whilst the produce of the Channel Isles and sunny France is being delivered at less cost in our centres less even than we can send ours from the midlands. We want a fair field and no favour. We want something to bring ourselves nearer and more directly in unison with the wants and pockets of the consumers; we want, in fact, to trade at home under the “most favoured nation” clause. These are matters of vital importance to an increasing industry, and cannot too soon have the attention of those wishing to maintain our commercial and industrial supremacy.

These matters only want looking into from a national and not class point of view to give impetus to cultivators in supplying our markets with home-grown products. The cultivator, it is true, must advance—keep pace with the times. The farmer clings to old moss-and-lichen-covered trees in orchards, by substituting instead varieties of fruit of a newer, finer, larger, and

in every way better class. Yet we have only to name such a thing and we are met on every hand with the complaint: "They bring nothing; do not pay the cost of carriage: it is not any use trying to compete with the foreigner; the climate and labour is all in the favour of France, or some other country; the shippers bring the produce as ballast, and the railway companies carry it from one end of the country to the other for next to nothing."

Of course there is something to be said on both sides. We have stated what we think tells against the grower outside his own efforts, and he must be told what militates most against his being able to compete with importers, and that is—1, Not taking advantage of the improved varieties, so as to supply the market with produce equal, if not surpassing, in appearance and quality that of importers. 2, The little or no attention given to fruit culture in the last decade, and in many instances not in the last three. Farm orchards are for most part an assemblage of old worn-out trees exhibiting no feature of interest, and certainly are a source of little if any profit. It does not pay to have Crabs in place of Apples, nor to keep an old stunted or worn-out tree, affording nothing but worthless fruit or scarce worth taking to market, when by a slight outlay a good return would accrue. If the foreigner is to be kept from underselling the home producer, the latter must grow as good or better produce, selling at a price that would preclude the former from the market. There must be a fair adjustment of rates—no favour shown to anyone, and that it can and will be done I am confident of; only that spirit of energy and perseverance which admits no denial can be roused so as to put forth its strength. When the orchardist gets rid of his dreams of realising high prices for fruit which, as compared with the best of garden produce, is little than Crab in size, and will take to the production of fruit, so as to sell it good and cheap, he will be a long way toward the goal of his aspirations—viz., being able to compete with foreign growers in the English market, but he must leave "Doubting Castle," dig himself out of the "Slough of Despond" by superior cultivation, and grow everything of the best and at the cheapest possible rate. To meet this want the late Mr. Thomas Rivers devoted a lifetime, and his efforts are bringing forth noble fruit through the continued able efforts in the same direction of the son, Mr. T. F. Rivers. In the raising of new and improved varieties of Pears and other fruits the presiding genius of Sawbridgeworth is pre-eminent. Enterprise and industrial energy can place home products so much higher in excellence as to need no protection against universal competition, and though it is said to be wise not to prophesy unless you know, I feel confident that by utilising the materials at his disposal and persisting in the efforts inaugurated by Mr. Rivers, very little need to be dreaded by the English orchardist.

In early Pears St. Swithin (Rivers) must take first rank. In appearance it is not unlike Jargonelle, but not quite so large, yellowish green, slightly coloured on the sun side. The fruit is remarkably juicy, rich, and refreshing, a decided improvement on Citron des Carmes, both in size, quality, earliness, and bearing; indeed, it is a great bearer, the very best of early Pears. Mr. Rivers states in his catalogue that it was raised from the Calabasse Tougard. It seems to have a good constitution, and will no doubt succeed as a standard on the Pear, being very healthy and productive.

Those who cling to small Pears can wish for nothing better than Doyenné d'Été, which is a great cropper as a standard on the Pear stock. Citron des Carmes is also a good standard tree on the Pear stock. They are, however, poor as compared with St. Swithin, and are only named as showing on which tack to set the sails. St. Swithin ripens sometimes in July; this year it was gathered on the 12th of August.

Beacon (Rivers).—This is taking in appearance, being of good size and bright in colour, having a melting flesh, though somewhat firm, after the style of its parent Grosse Calabasse, and the flavour good. The tree is a good grower, healthy, and prolific.

Jargonelle.—Well known and deservedly popular. Does well on the Pear as a standard, but in some soils is liable to canker, especially on a wet subsoil. As an early wall Pear it has no equal, except in Clapp's Favourite.

Clapp's Favourite.—This I have grown over a dozen years. It is an American Pear of the very highest excellence. The fruit is large, shorter than Jargonelle, handsome in form and colour, and the flesh exceedingly juicy, melting, with an agreeable slightly musky flavour. These perfumed Pears—viz., Clapp's Favourite, Williams' Bon Chrétien, Seckle, Thompson's, and Knight's Monarch are very much liked by some palates, just as the Bergamot is so esteemed by others. Clapp's Favourite does well on the Pear, better than Jargonelle as a standard, and is

prolific. Its season is with or only a few days later than Jargonelle.

I have not had Beurré Giffard once good in thirty years, always going at the core. Beurré de l'Assomption is no good whatever with me outdoors, though a fine fruit when grown in an orchard house. These Pears must need a special soil and climate.

Williams' Bon Chrétien.—With these in the market by the middle of August the English grower has little chance. Never fear but we shall have an early Williams'; only create a demand by getting out of the trash that spoil the hopes of raisers by their clinging to obsolete notions. Williams' is the very best of the September Pears, good alike from a wall or standard. I got 6s. per bushel last year for standard fruit, and had 10 bushels off a tree, and it covered only a rod of ground. It is the small fry, the Green Chisel, Hessles, and similar rubbish that do not pay; they are a quarter century behind the times.

Madame Treyve.—This comes in about the same time as Hessle. It is much finer; fruit green in a deep loam, but has some colour where there is lime; large, melting, and in every respect excellent, crops well as a standard, and keeps some little time.

Beurré Superfin.—A finer quality fruit could not be wished, and it does fairly well in the south as a standard, on the Pear, but in the north I did not find it good as a standard, being much pitted. It is a capital sort, especially on siliceous or calcareous soils.

Beurré d'Amanlis.—Large and excellent, and is best treated as an espalier, upright or oblique cordon on account of its large fruit. It, however, makes a fine standard on the Pear. For dwarfs it should be on the Quince.

Souvenir du Congrès.—This as a standard does very well, but the fruit being large (they sell well) is liable to be blown off by the winds; but in sheltered places is first rate. It is imposing in appearance and is as good in quality, being melting, juicy, and pleasing aroma. These are the sort to grow on low walls, espaliers, and double worked on the Quince. Fruit 16 to 30 ozs. fetch the biggest prices in the market. It does well on the Pear either as a standard or a wall tree. The fruit attains a bright crimson glow on calcareous soils. It is not unlike Williams', but is more sprightly in flavour, melting, and juicy, with a musky aroma.

These are what I advise for general culture in early Pears—viz., St. Swithin, Beacon, Clapp's Favourite, Williams' Bon Chrétien, and Madame Treyve as standards. For walls or fences Jargonelle, Beurré d'Amanlis, Beurré Superfin, and Souvenir du Congrès. They give a supply up to October. As a very early Pear Doyenné d'Été is worth a place, giving really handsome fruit from a wall, and gathered fresh from the tree not over ripe is good in quality. Double grafted on the Quince the fruit is finer than on the Pear.—UTILITARIAN.

CERYSANTHEMUMS AND THEIR CULTURE.

(Continued from page 133.)

CUPS AND TUBES.

Cups and tubes are represented by fig. 25. It is impossible to stage a box of cut blooms without them. There is a great variety to choose from, some being made of wood similar in shape to egg cups. These are objectionable in appearance and do not last as long as those made in the manner I will describe. Those made of wood are not of the right shape in the tube, which is not hollowed out in a slanting direction sufficiently. Some growers use tubes and cups made of tin. These are cheaper than when zinc is used, but as they are liable to rust zinc is far better in the end. The tubes should be made in two sizes as shown in the annexed engraving. The stems of each being the same width, either of them fits into the cup which holds the water. The largest size, as shown in the engraving, is suitable for blooms of the larger varieties of both Japanese and Incurved flowers, particularly the drooping varieties of the former section, which are much improved in appearance by having the petals supported at a proper height from the board, which, in the case of Meg Merrilies for instance, cannot be done when one sized tube is used for all varieties, and that of the orthodox size, which is 2 inches in diameter and 1 inch deep in the flange; therefore every grower should provide himself with a few of these larger tubes, which should be 3¼ inches in diameter and 1¼ inch deep in the flange. The stem should be 2¼ inches long, and fit into the cup, as shown, in a telescopic manner.

The cup represented is a great improvement upon the older straight plain pattern. As is shown, it is fitted with a piece of brass 1¼ inch long and half an inch wide at the bottom, narrowing off a little at the upper end: this being soldered on to the top just

below the flange, hanging loose down the cup one on each side quite opposite to each other, forms a tight embrace to the stem of the tube holding the flower. The advantage of these two so-called springs is that the stem of the tube when pushed down can be fixed at whatever height is thought desirable for the flower, be it a large or a small one. This spring does away with the necessity of using any kind of support, as is required for the older-shaped cup, to fix the blooms at a given height from the board. The addition of the spring costs a trifle more than the plain ones, but is well worth it. The cup should be made in exactly the same manner as in the plain system, and should be 3 inches long, three-quarters of an inch in diameter, having a flange at the top one-eighth of an inch broad in a horizontal manner. This prevents the cup swaying to and fro when travelling. Narrow strips of brown paper wrapped around the outside of the stem of the tube which is inserted in the cup prevent the flower dropping lower than is required. Some use indiarubber rings for the same purpose, while other growers place pieces of cork or wood in the cup to raise the flower as required.

NIGHT WORK AND NIGHT ENEMIES.

Growers of Chrysanthemums who are desirous of perfecting superior blooms for exhibition have enemies by night as well as troubles by day to steer clear of. All these evils necessitate constant watchfulness when the flowers are expanding. Earwigs are the greatest pest. It is surprising what amount of depredation is caused on one bloom during a single night by earwigs. Trap them with moss placed inside inverted pots, inverted on a stake amongst the plants, and examined every morning. By this means many

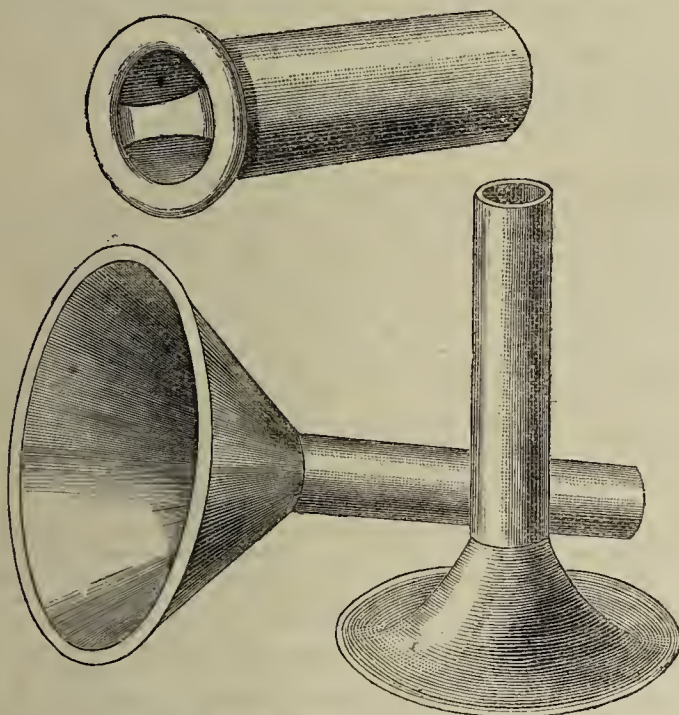


Fig. 25.—Cups for Chrysanthemum Blooms.

may be destroyed; but the best way to catch them is by going round after dark each night quietly with a light when they are busy feeding on the petals. They must be caught quickly. Nothing is better for this than a pair of tweezers. The least shake of the plant and they secrete themselves among the petals, and are not at all easy to discover again. Woodlice in some places are troublesome, as they eat the florets from the under side of the flower. The damage is not always seen till the flowers sometimes are spoilt. They are not so numerous when the plants are standing on the concrete floor of the greenhouse as they are in vineries. The mulchings of manure used therein for the Vines is just the place for them to harbour, as it is generally dry on the surface in some parts of the house during the winter. Hand-picking from the flowers is the only remedy, and where they are numerous this must be incessantly carried out. Slugs too often disfigure the flowers by crawling over them, and in some cases they eat them. Where any trace of them is seen during the daytime they are almost sure to revisit the particular spot the next night. In this manner they can be caught after dark. Some bran laid on the top of the pot will act as a bait for them. Cockroaches where numerous are sure to find out the blooms, which are soon spoilt when three or four of these commence to eat them. They are rather difficult to catch when feeding, as the moment the light is turned on them off they go. Where the plants are so situated that they are standing thinly about, a gentle shake dislodges them, when they can be killed on the floor. Cockroaches are most troublesome to plants that are

placed in heat to push them along, these pests not generally being found in cool houses, as they are more partial to heat. Green caterpillars are sometimes a source of annoyance: except by chance the night is the only time to discover their whereabouts.

It will be seen that growers of Chrysanthemums have many enemies, all of which must be subdued if perfect blooms are expected. Then there is the ventilation of the house to attend to at night, giving more or reducing it as the weather may suggest, or admitting air in such a manner that rain does not beat on the flowers, which does much damage.—E. MOLYNEUX.

A CHAT ABOUT HARDY HERBACEOUS FLOWERS.

[A Lecture delivered at the meeting of the Yorkshire Association of Horticultural Societies at Sheffield by the Rev. A. R. Upcher.]

MR. PRESIDENT, and Brother Gardeners all,—I have at this moment a painful consciousness that an apology is due from me to you on account of the position I am occupying this evening; for of all the airy castles that I have ever built from my youth up until now, I certainly never had the audacity to dream that I should ever attain to such a dizzy height of honour as that of addressing the first meeting in Sheffield of the Yorkshire Agricultural Societies under the presidency of the first Archdeacon of Sheffield.

Well, Sir, I have been asked to give a lecture, but I hardly like to call my remarks by so grand a name lest some facetious friend should remind me of the vast amount of talent and experience in horticulture that I am addressing by a somewhat touching reference to a certain venerable relation and green Gooseberries. I prefer to crave your kind indulgence for a very short time—for I am glad for *my* sake that I am not an “annual,” and for *your* sakes that my discourse is not perennial—while I have “a chat” with you about “Hardy Herbaceous Flowers.”

“Sirs,” said a certain philosopher, addressing once upon a time a field of golden Wheat, “if you will only lend me your ears I shall never want for bread.” And, “Sirs,” say I, if you will only lend me your ears to listen to what I have to say, and your *eyes* to behold these lovely flowers that are here this evening to hear me witness, then I shall feel at least a hope that I have not come here in vain.

When the energetic Secretary of the Sheffield and Hallamshire Gardeners’ Mutual Improvement Society requested me some months ago to give what he was pleased to call a lecture, I allowed myself to do so for three reasons:—

Firstly, because I am glad to be able to help forward any association of societies which have for their object and aim such a civilising influence as that of the culture of God’s beautiful flowers.

Secondly, because I felt it would be a capital opportunity of bringing before the notice of the gardening fraternity of Sheffield and its immediate neighbourhood, a subject concerning which I fear, from personal observation, with a few brilliant exceptions, there is a very limited knowledge, and a still more limited practical experience.

Thirdly, because, to a lover of flowers, as I honestly claim to be, the thought that there are hundreds of lovely herbaceous plants, growable in almost any ordinary garden soil, which, nevertheless, are perennially “hoycotted” from our gardens, is simply maddening. Against all such unreasonable prejudice and culpable ignorance I beg leave, therefore, most respectfully to protest; and with this preamble, preliminary canter, or whatever else you like to call it, I take a header “*in medias res*,” which, freely translated, means on this occasion, “into the midst of an herbaceous border.”

(1). Let us glance at the nature of these plants.

(1). These flowers, remember, are perfectly *hardy*—that is to say, though exotics brought from foreign countries and naturalised in this, will grow and flourish in our garden soils and in our English climate, which, as an American once forcibly described it, is “as sifty as a waggonload of monkeys,” and in our English atmosphere, even though charged with Sheffield smoke.

(2). They are *herbaceous*—that is, they differ from shrubby plants in the limited and less woody nature of their growth, and in dying down to the ground every year after they have flowered and their leaves and stems have performed the functions necessary to their future well-being.

(3). They are *perennial*—that is, they live for an indefinite number of years, increasing, and so being propagated from the root, and becoming each succeeding season more exquisitely beautiful than the last; a feature in their character which, together with their hardiness, makes them available where their more fashionable rivals, now popularly known as “bedding plants,” cannot, for the above reasons, take their place.

(4). As regards the beauty of these flowers, I will simply say there is no reason whatever why our gardens should not be one blaze of colour from February to November; or, in Sheffield, say from March to end of September, with a display in these plants alone, without the aid of a single pane of glass, and with the smallest amount of labour. For the rest I am content to stand aside and allow these lovely blooms to please for themselves. Look at them; study them; consider them; how they grow. “Verily, not even Solomon in all his glory was arrayed like one of these;” and I would fain believe that you, who at present are strangers to them, when you come to know and love them in your own gardens—come to be “married” to them, as securely as is the reader of this paper, you will be able to say about these flowers what the Norfolk

farmer said about his married life, "I been wedded fifty years this very day, and I can court my wife now as well as ever I could—aye! and a sight better, too—because I fare to understand now what she 'dew' like, and what she 'don't like.' "

(II.) Next let me call your attention to utility, and peculiar charm that attaches to the hardy herbaceous family.

First.—Their utility—

Decoration for the garden all the year round.

Why should there be blanks of bare soil in spring and early summer, when beds and borders of shrubberies may be all ablaze with Primroses of a dozen colours, with seedling Pansies and Polyanthus, Phlox subulata and setacea, Auriculas, Aubrietias, Daffodils, Crown Imperials, Lilies, Saxifrages, Alpine Primulas, such as *Primula rosea* and *nivea*, pulcherrima and denticulata, Snowflakes and Snowdrops, *Caltha palustris*, *Anemones fulgens*, *apennina*, *Ranunculi*, *Iris*, *Fritillarias*, *Dielytras*, *Trollii*, *Scillas*, *Alyssum*, *Adonis vernalis*, *Hepaticas*, and others too many to mention, to be quickly followed in June by more Lilies, summer-flowering Irises, Campanulas, Columbines, Delphiniums, Gladioli, Tuberosus Geraniums, Veronica, Lychnis, Potentillas, Gaillardias, Coreopsis, &c. and a vast host of similar plants? And then again,

Why throughout the months of July and August should we be condemned to gaze upon the same pattern of carpet-bedding, upon scarlet Pelargonium, yellow Calceolaria, and Golden Feverfew, upon the Lobelia and Ageratum, &c., and on these alone, when there are such splendid allies and adjuncts to these, more beautiful in blossom, more graceful in habit, more varied and brilliant in colour, and nearly all more striking in shape and bloom—e.g., as summer-flowering Chrysanthemums, Pentstemons, Helianthi, Phlox decussata, Leucanthemum maximum, Oenothera, alpine Asters, Achilleas, &c.? Why stick to one family of plants when we may have the stateliness of the double Hollyhock and the brilliancy of the single Dahlia to regale our sight, enliven our parterres, and decorate our rooms? Why, indeed? Echo answers, Why?

And, finally, in autumn, the scarlet Lobelia, the Japanese Anemones (white and pink), the perennial Sunflowers, Pyrethrum uliginosum, Tritomas, Senecio pulcher, and Michaelmas Daisies complete the floral chain of beauty, which leaves nothing to be desired.

(2.) The charm of these flowers is manifold.

There is the charm of their endless variety of form, height, and colours, for back rows, and middle rows, and front rows, for massing and grouping, for carpeting and covering the naked soil, for creeping, drooping, trailing over wood and stone.

There is the charm of their ever-renewed freshness, new flowers each succeeding month, nosegays bright for every season of the year, giving an unflagging interest to the flower garden to master, to mistress, and to man.

There is the charm of their individuality.

For each has its history, its associations, its romance, its memories.

These plants, for instance, were collected in Switzerland, or in California, or in Norway, in company with comrades dear.

These once grew in the dear old garden at home, where dwelt the dear ones who now garnish the garden up above.

Over this plant, look you, this very identical plant, as she was fastening one of its lovely blooms in her shining hair, a young man asked a beauteous maiden an important question, and as the answer was satisfactory, their mutual love, like the flower he gave her, has become "perennial!"

Again, in these plants we often observe that there is but one step between the sublime and the ridiculous.

"What do you call *that* flower, Sir?" said a rheumatic old woman in my brother's parish, who had come to visit his garden.

"Monarda didyma, or Bergamot," said he.

"Why, that's what they make my Bergamy plaisters of for the Rheumatics. You go to the Chemist and you ask for a Bargamy root; then you bile it till its right pulpy like, then you 'spread' it on the paper in sun till its right crumbly like; then you hold it afore the fire till it is right clammy like, then you clap it smack bang on where you feel the misery—and that fare to ease yer bootiful!"

Finally, there is the charm to the Christian man, and, above all, to the clergyman, of the lessons which they teach us of God's love; of Immortality and Resurrection to eternal life. Who but those who have experienced it can describe the delight of going to a certain spot in our herbaceous border, as each season comes round again, to see if some old associate has survived the winter, and the joy of recognising some former familiar flower springing up into newness of life? Truly—

"In all places, then, and in all seasons,
These flowers expand their light and soul-like wings,
Teaching us by most persuasive reasons
How akin they are to human things.

"And with childlike, credulous affection,
We behold their tender hues expand;
Emblems of our great Resurrection,
Emblems of the bright and better land.

"Wondrous truths, and manifold as wondrous,
God has written in the stars above;
But not less in the bright flowers under us,
Stands the revelation of His love."

(III.) You will, no doubt, now expect me to say something of their arrangement in borders and shrubberies. There are four things to be kept in mind in considering this—height, colour, habit, and season of blooming.

(a) Height.—Place the tallest plants at the back, and graduate the rest towards the front of your border.

(b) Place them in groups, so as the colours will contrast and blend for general effect, giving each plant sufficient room for the expanse of three or four years' growth.

(c) So arrange each group as shall make it impossible to have a blank at any season of the year, except midwinter.

(e) Plant the mossy, shade-loving species under the shadow of the tall and spiky ones, so that, as far as possible, the bare soil is carpeted below as well as illumined from above.

We want in our gardens, not so much to gaze upon neatly raked mother earth as upon flowers. Like a certain American, who on calling one day at a house to see a young lady, was asked if he would like to see her parents, to which he replied, "Waal, no! I guess I didn't come to see *the parents*." So "I guess" we, as gardeners don't want to see *soil*, but *flowers*.

By this method, while you escape monotony you will maintain order and reproduce as near as possible the luxurious beauty of Nature. Perhaps some are incredulous about the possibility of such arrangement and such variety to suit every season. I can only answer to such an objection: You have a vast number of different species of perennials at your disposal of every imaginable colour and habit, and if with this wealth of plants, in addition to the regular troops of annuals, biennials, and usual bedding stuff, you cannot so arrange your army as to cover every flank and every blank, then you are a worse general than I am inclined to believe. Set your mind to it and try. "Be not faithless but believing," and then success is sure. "*Palmas qui meruit ferat.*"

(IV.) And now a word about cultivation of these herbaceous perennials. They love a deep loamy soil. If you have not got it in your gardens already, get it. I see heaps of leaf mould and rotten sods ready to hand for your potting and bedding plants, and you have to do this for them and spend endless labour on them yearly for only a year's bloom. Well, give it to the herbaceous plants at first planting, and you need not touch them for five years, except to supply occasional blanks or to check luxuriant growth.

Let your borders be 3 feet deep with this good food, and then in the hottest summers they will be safe from drought, and in the coldest winter secure from frost, and last for years without further trouble. I do not deny that they are better for mulching in late autumn and early spring, and with good soakings of water in midsummer. The mulching that never fails is this, for I have tried it: thoroughly rotten manure, which, as graphically described by a Sheffielder, "cuts as tender as a seed cake." When this has been spread over the whole border, burnt earth as a blanket on the top keeps the border cool in summer and warm in winter, and gives to the whole throughout the seasons a tidy appearance. Against one evil I must warn you—*never dig amongst your herbaceous borders*; it is harmful to all, to some instant death; mutilates their fleshy roots besides chopping in pieces secreted bulbs.

(V.) Finally, as it is not within the scope of this short paper to give a full list of herbaceous perennial plants, I shall content myself with giving you just a few hints on the cultivation of special yet standard perennials which should occupy a position in every garden, and with reminding you that such nurserymen as Messrs. Backhouse of York, Messrs. Fisher, Son, and Sibray of Sheffield, and though last not least, Messrs. Thos. Ware of Hale Farm Nurseries, Tottenham, London—than whom none have a more extensive collection or a more matured experience of this particular class of flowers—will be glad to give further information. And here I gratefully acknowledge my indebtedness to Messrs. Ware, to Messrs. Fisher and Sibray, and to W. A. Milner, Esq., Totley Hall, Sheffield, for their kindness and courtesy in supplying floral specimens wherewith to illustrate my remarks.

HINTS ON THE CULTIVATION OF SOME OF THE VERY BEST

HARDY PERENNIALS GROWN.

Campanulas (perennial) should be planted out from March to June, with the exception of robust kinds, such as *glomerata*, *dahurica*, and *latifolia*. They never do well the first season if planted later, and often get destroyed during the winter. Nearly the whole of the family prefer a somewhat heavy soil, with plenty of water during the growing season. Dwarf varieties are adapted for rockwork, taller kinds for ordinary borders.

The Platycodons (*C. grandiflora* and *C. autumnalis*) prefer a light dry soil. A few sorts in the way of *fragilis*, *isopylla*, &c., are capital plants for hanging baskets and windows. In many Continental towns windows are filled with such varieties, and most charming they look. *Achilleas*, *Coreopsis lanceolata*, *Geum coccineum*, *Oenotheras*, *Veronica longifolia* *subsessilis*, *Gaillardia grandiflora*, *Malva*, *Matricaria*, *Scabiosa caucasica*, and similar plants are well adapted for ordinary borders, and require no special treatment. If the soil be heavy spring planting is advisable; if light, autumn is the best season. In fact, this remark applies to all perennials of this class. Some sorts—*Coreopsis lanceolata*, for instance—flower so freely and continually that in order to store up the necessary reserve food in its fleshy roots for the winter it should be cut down in the beginning of September.

All Alstroemerias, with the exception of *A. aurea*, should be planted in a light soil and given plenty of moisture during the summer; the

root should be planted in deeply trenched beds, 6 to 9 inches deep, in late autumn, and slightly protected during winter and early spring. The same remarks apply to *Bomarea*.

Anchusa italica should be treated as a biennial. Sow the seed in April, either in pots or open ground. They flower the following year, but after flowering once get weak and die out.

Anemone japonica should be planted in a moderately light soil; or if the soil be heavy the beds should be well raised or deeply trenched. Best time for planting, early spring. The plants should never be left too long on the same spot—that is, not longer than four years.

Aster (perennial), *Delphinium* (perennial), *Chelone barbata*, *Chrysanthemum maximum*, *Monarda didyma*, *Lychnis*, *Rudbeckia*, *Physostegia*, *Helenium*, *Helianthus*, and similar plants, should be planted in early spring; well-manured soil, rather open, with plenty of room for plants to develop. They should be well watered during the summer, and if the soil be light and sandy well mulched.

Summer-flowering *Chrysanthemums* should be treated as the preceding, but planted in May or June. Although perennial and quite hardy, they do much better if repotted every year.

Dianthus, being biennial, should be reproduced every year by seed, cuttings, or layers; good sorts by cuttings or layers only, seed never coming true. Seed should be sown in early spring, and the planting out in middle of summer in comparatively light soil; open situation.

Single *Dahlias*, not being quite hardy, should not be planted out before the end of May or beginning of June; well manured soil, plenty of room, and abundance of water during summer; if possible, in a position not exposed to the morning sun. The tubers should be either lifted in autumn, kept dry, and away from frost; or, if left in the ground, protected from frost. Seed never comes true; good sorts should always be reproduced by cuttings.

Geranium tuberosum, *Tigridia*, *Hyacinthus candicans*, are quite hardy in light soils, but suffer from the cold damp in heavy soils; should be planted in April, fully exposed to the sun, and well watered during summer. They can either be lifted in autumn and kept like *Dahlias*, or protected.

Potentillas, *Phloxes*, and *Pyrethrums* are quite hardy; should be planted in early spring in well trenched ground, open, exposed, well watered during summer, reproduced by cuttings or division.

Pentstemons; such sorts as *glaber*, *barbata*, *Scouleri*, are perfectly hardy in any soil or situation, but the so-called florists' flowers varieties are not so. These should be propagated by cuttings in autumn, and kept in a cold frame or greenhouse for spring planting.

Senecio pulcher is one of our prettiest autumn-flowering plants. Good healthy plants should be planted in May in well trenched beds exposed to the east. Mulch the ground in June, and give the plants plenty of water till they show flower. During the winter put a box or bellglass over the plants to protect them from damp, which rots the centre. Continual reproduction by division of the roots is recommended, and the great beauty of the plants repays for all trouble.

Tritomas prefer a slightly sheltered border exposed to south and west. Best time for planting early spring.

Lobelia cardinalis should be planted in autumn and thoroughly well watered during summer, rather dry during winter.

Iris germanica, *pumila*, *siberica*, *virginica*, &c., require open positions with plenty of water during summer, heavy soil is preferable. The bulbous *Iris* such as *Xiphoides*, *Xiphium persica*, &c., prefer a light sandy soil, dry and sheltered. Other sorts, such as *iberica*, *susiana*, &c., should be planted near a very dry south wall, where they will get but little rain during the summer. *Iris Robinsoniana* and *fimbriata* are not hardy, and should be grown in greenhouse.

In conclusion I am deeply conscious of the imperfections of this paper, which I trust you will kindly excuse. The burden and care of a parish of 20,000 souls—except, as (I am glad to say) it includes a visit to the gardens of my working men friends, who seek my advice in horticulture together with the 101 other complaints to which mortal man is heir to—is not conducive to literary attainments and neat composition. But if I have helped you in any way, if I have sent you on your way rejoicing, determined to master this department of horticulture as vigorously and as efficiently as you have done other branches; if I have done anything to give impetus to the turning tide of popular taste in favour of these hardy herbaceous flowers, I am amply repaid and fully satisfied.

A VISIT TO SUFFOLK.

GARDENING, as a vocation, has an absorbing interest to those who practise it, and to such an extent does one's attachment thereto prevail, that whenever a much-needed holiday is taken, ostensibly for rest, one is almost sure to either take a gardening tour, or if otherwise, there is an irresistible temptation to visit gardens within measurable distance of our place of sojourn. I suppose there is something more fascinating in gardening than in any other profession, for most other people who take a holiday make up their minds to dismiss all thoughts of their daily occupations, and enjoy new pleasures, discuss different themes, and replenish health and mind through a "total change." Not so with gardeners; they cannot, no matter where they go, enjoy the repose they need quite as much as other mortals. Under these circumstances then, gardeners, in return for making such sacrifices, hope to gain benefits in some shape or other, and these are frequently of great value to them, because in the course of their travels they are sure to learn some useful lesson, or see something worthy of note. This, in a great measure, is my reason for communicating the following gardening notes to the Journal, although in

reality my notes, if any, should have dealt with farming, for that was the object that induced me to pay a visit to the places hereafter described.

I had a cordial invitation from a valued friend, Mr. Edward Luckhurst a name well known to readers of this Journal, the other week to run down to Nowton, near Bury St. Edmunds, to spend a few days with him, and have the pleasure of driving over a portion of a few thousand acres of land under his management, and to see the excellent system of farming carried out under his supervision. That invitation was accepted, and although I did see a great deal of our friend's highly successful farming, and enjoyed the pleasant rural drives and intercourse on the subject, I, in common with my brethren of the craft, could not resist the temptation to leave gardening matters altogether in abeyance. I question very much if anyone could, surrounded as my genial host's home is with such a magnificent paradise of the most beautiful trees it is possible to meet with. There fortune, or accident, whichever term you like to use, has certainly placed the right man in the right place, for few have such a love and knowledge of arboriculture as Mr. Luckhurst has, as readers of back volumes of the Journal can testify from a perusal of his exhaustive and valuable contributions on the subject. As agent of a large estate he has other and more important duties to fulfil than those of a purely arboricultural character; but, nevertheless, his past experience and sound practical knowledge of the latter subject has already proved advantageous to the welfare of the fine collection of trees at Nowton Court. I shall not enter into minute details respecting the gardening features of Nowton Court (with which Mr. Luckhurst has nothing to do), but I cannot altogether pass by the many features of interest on the estate without giving a few brief outlines of its principal features.

The owner of the Nowton estate, J. Porteous Oakes, Esq., has from boyhood been greatly devoted to arboriculture, and during a lifetime of over sixty years has enriched his home estate with a most valuable collection of trees. In the pleasure grounds, park, and adjacent fields and plantations are to be seen probably some of the finest examples of Conifers that are to be met with in England. The *Redwood* (*Sequoia sempervirens*), *Sequoia gigantea*, *Cedrus Deodara*, *atlantica*, and *Libani*, the *Swiss Stone Pine* (*Pinus cembra*), *P. insignis*, *excelsa*, and others, *Abies Douglassi*, *nobilis*, *Nordmanniana*, *Pinsapo* and *Smithiana*, *Taxus*, *Cupressus*, *Thuia*, *Libocedrus*, and *Juniperus* of sorts have grown in a remarkably short space of time into gigantic specimens as faultless in contour and as healthy as it is possible to conceive. Mr. Oakes very sensibly plants and nurtures his trees with a view not only to their adding beauty to his estate, but also in the future yielding a profitable supply of timber. The *Redwood*, for instance, is planted largely both singly in the park, grounds, and plantations, as well as the *Cedar of Lebanon*. Every care and attention is paid to the judicious thinning and training of these trees by keeping their stems free of side growths. The *Redwood* is a telling tree for grouping in plantations, the soft, spongy, reddish bark making an effective and cheerful contrast with the sombre green of the surrounding foliage. I have never met with such large handsome pyramidal examples of the common *Yew* as are to be met with in the plantations here. Mr. Oakes takes great pride in these, and the way in which he manages to get such finely shaped specimens is by the periodical use of the pruning knife and saw. The side growths are cut back to within a foot or 18 inches of the main stem, and although the trees look unsightly for a time, the plan certainly answers admirably, and is well worthy of imitation. The common *Walnut* is planted in great quantity in the parks and fields, in fact there are groves of them, fine, large, handsome trees, planted mostly by their present owner. Other valuable timber trees, such as *Oaks*, *Chestnuts*, *Maple*, *Ash*, *Lime*, and *Beech*, are also growing in large numbers. The planting has been carried out with excellent effect and taste, the various trees forming beautiful vistas, and the blending and harmony of contrast of the foliage being all that could be desired. The *Purple Beech* thrives uncommonly well, the colour developing better than I have ever previously seen it. Within the last few years Mr. Oakes has planted some miles of new plantations, forming extensive belts round the home estate with choice trees, the hedges of the former being planted with the little known *Myrobalan Plum*, *Prunus cerasifera*. Until the management of the estate came into Mr. Luckhurst's hands the *Plum* hedges used to be kept trimmed, but now they are left to grow with a view to their producing fruit, as no doubt they will do freely another season. There is a fine collection of the shrubby *Spiræas*, *Lilacs*, and flowering shrubs, with the exception of *Rhododendrons*, which do not thrive well on the Nowton soil, growing freely in the plantations. No matter which way you look or go on this estate, you see abundance of beautiful trees, forming a series of landscapes of sylvan beauty, and turning into a paradise an estate which devoid of these trees would not be half so valuable and interesting as it is. Mr. Oakes has lived to see these giant trees develop, many of them from seedlings of his own raising from small specimens, and well might he be proud of them. If other proprietors would manifest the same amount of interest and zeal as this gentleman, they would render their estates not only more beautiful but profitable. Digressing for a moment, with the Editor's permission, from arboricultural topics to those of farming on the Nowton estate, I may state for the benefit of my farming readers, that by the judicious and intelligent use of artificial manures, draining, and thorough cultivation of practically exhausted land, excellent crops of both cereals and roots are obtained. Mr. Luckhurst's knowledge of vegetable physiology and agricultural chemistry has enabled him to provide at a minimum of cost exactly the kind of food suited to the particular crops. He prefers to procure the raw materials, so to speak, and then mix them in the proportions he deems most suitable, and not to

go blindfolded into the manure market, as the majority of farmers do, and purchase useless preparations. Except for root crops farmyard manure finds little favour here, neither is there much made, for few beasts are kept. I fully believe that in a few years' time the local farmers will be taught a useful and practical lesson in farming. At any rate, it is much needed not only in Suffolk but elsewhere.

From estate matters we return to the hospitable dwelling and garden of mine host. I have said it has beautiful surroundings in the shape of trees, and ere long it will have in the garden, when time will permit, the touch of a master hand in landscape gardening to beautify it. Already there is a nice little colouring of alpine plants, the nucleus of a larger collection by-and-by; a choice collection of herbaceous plants and Roses, and a moderately sized piece of water, which, with a few alterations, will be an attractive feature. The shrubbery rejoices in the possession of what may fairly be considered the finest example of the Tulip Tree (*Liriodendron tulipifera*) in England, and a remarkably large specimen of Beurre de Capiaumont Pear. Particularly interesting, too, is the vegetable garden, which until last April was a piece of woodland covered with trees. The-e were rooted up, and the ground trenched 2 feet deep. Later on, heavy dressings of specially prepared artificial manures were applied to the ground and forked in, and then Potatoes, Peas, Lettuce, and other crops sown. The condition of these is marvellous for a first season's crop, and have caused not a little surprise among the neighbours. The praise for the excellence of this department is due to the skill and management of Messrs. Charles and Walter Luckhurst, who are virtually the head gardeners.

In the course of one of our walks we came across a neighbouring agent, to whom I was introduced by Mr. Luckhurst, and very glad I was to make his acquaintance, for he kindly offered to conduct me over the Hardwick estate (the late Lady Cullum's) and the gardens of Hardwick House. This estate joins that of Newton, and the mansion just referred to is barely a couple of miles away. I arranged to meet this gentleman, Mr. S. Barrett, at his house at nine o'clock the next morning, and accordingly did so. I was both highly gratified and pleased that I did, for I found Mr. Barrett no ordinary mortal, but a man with the stamp of originality in him, possessing a fertile and exhaustive mind, a model of punctuality and order, and one who evidently could command confidence and respect, as well as infuse his own excellent habits and principles into those under him. Thoroughness of detail seemed to be his motto, and a determination to keep everything, buildings, land, gates, and roads, in excellent order. An inspection of the farm buildings revealed the most scrupulous attention to cleanliness and comfort for the cattle. On a large board in one of the principal buildings, there is painted a set of rules forbidding swearing, betting, or "clubbing" for beer and smoking under pain of dismissal, and also notifying that there was a place for everything and everything must be in its place, or the defaulter would get dismissed. Strict as these rules were I am told the men respect them, and are greatly attached to Mr. Barrett, who is in every respect a kind and considerate master.

Many years ago Napoleon III. sent a special commissioner over from Paris to see these buildings, with a view to adopting something of the same kind over there, and Mr. Barrett is the proud possessor of a handsome souvenir received from Napoleon. Mr. Barrett has been connected with the Hardwick estate for upwards of sixty-five years, having for the greater part of that period occupied the position of agent. In addition to this he is a guardian of the poor for the parish, churchwarden and overseer of Newton, as well as holding other important offices. So much for his farming capabilities, which we pass by, to deal with his arboricultural and horticultural knowledge. Similarly to Newton Park, Hardwick Park and gardens abound with fine trees, and the existence of more than three-fourths of these is due to the energy and skill of the present agent. He is full of tree lore, pointing with well-merited pride, like Philip Frost of Dropmore, to the splendid specimens that he raised in his younger days from the seed, and relating with great interest the various incidents or anecdotes connected with each tree. Looking at many of these giants it hardly seems credible that they could have attained so large a size within a space of fifty years. Mr. Barrett possesses an artistic eye, for not only in grouping and blending of colour, but in the happy arrangement of the planting and subsequent thinning, thus forming the most charming vistas, and opening up views in all directions for miles round, in all of which he has been particularly successful. The groves and avenues of Chestnuts, Oaks, and Purple Beech are indeed beautiful. In the pleasure grounds, too, Mr. Barrett planted the magnificent Conifer specimens, and other choice trees, which during the lapse of years have grown remarkably large. There is an exceptionally fine specimen of Abies Pinsapo, also of the Deodar, Atlantica, and Lebanon Cedars, Pinus excelsa, Cupressus Lawsoniana, and other Conifers; and I need hardly add that Mr. Barrett is not a little proud of his achievement in tree planting. The vast number of handsome specimens of Crataegus must form a lovely picture in May.

As an amateur horticulturist Mr. Barrett is equally successful. His gardens, both flower and vegetable, are models of neatness and good order, as well as examples of skilful culture. He is a great bulb fancier, and consequently grows these on a large scale in his beds and borders. The bulbs are planted in masses in rich well-prepared soil, and are not lifted after flowering, but allowed to ripen off thoroughly. No summer plants are planted over them, the soil having full exposure to sun and air. In this the Hyacinths, Tulips, Crocus, and Anemones thrive, flower abundantly, and the bulbs increase rapidly in size and number. Lillium auratum and Tigridia pavonia and grandiflora are grown by hundreds in large beds, and very successful they seem to be. The Pæony is another

favourite, and also the Christmas Rose, both being grown in quantity. Mr. Barrett's practice is to grow a few things, and those well, and whether he takes in hand Roses, Pæonies, bulbs, or what not, he will succeed in their culture somehow. In his vegetable garden not a weed is to be seen, and all the crops seem vigorous and healthy. Strawberry culture is a special feature with him, and no pains are spared to obtain fine fruit. He believes in abundance of cow manure and deeply trenched soil. In making new beds Mr. Barrett prefers not to plant in the autumn, but keep the runners in pots until spring and then plant, urging as a reason that the plants are not so much affected by the severe weather when in pots as they would be in the ground. He has a nice row of healthy young pyramidal Pear trees, most of which were bearing fruit. Mr. Barrett is particularly fond of Figs, consequently he has had the south sides of the farm buildings planted with these trees, and now they are commencing to yield a little fruit. In walled-in enclosures there are some fine Peach trees carrying good crops of fruit. During the spring months Mr. Barrett has had a canvas blind fixed similarly to those over shop windows, which can be let up or down as required whilst the Peaches are in bloom. Altogether Mr. Barrett is an excellent man, and heartily do I thank him for his courtesy and pleasant intercourse during the time he conducted me over the gardens, park, and farm, and with great regret I soon after concluded a hurried, but extremely pleasant visit, to not only Hardwick, but Newton too. My best thanks are due also to Mr. and Mrs. Luckhurst for their genial hospitality.—T. W. S.

HORTICULTURAL SHOWS.

SHREWSBURY.

If any evidence were required to prove that horticultural exhibitions can be rendered in every way highly successful, it was afforded most conclusively by the Show held at Shrewsbury on Wednesday and Thursday last week. The annual summer Exhibition of the Shropshire Floral and Horticultural Society has gained the reputation of being one of the best in the kingdom, and one the financial results of which have been almost phenomenal in recent years. The Society has been established about twelve years, and with but two exceptions the annual shows have improved wonderfully each season, with a proportionate increase in the receipts. Some idea will be gained of the progress made from the following list of takings at the gates from 1876 to 1885:—

	First day.	Second day.	Total.
	£ s. d.	£ s. d.	£ s. d.
1876.....	81 4 6	189 5 2	271 9 8
1877.....	92 1 10	381 3 8	473 5 6
1878.....	104 7 3	523 6 1	632 13 4
1879.....	65 8 2	398 8 10	463 17 0
1880.....	121 4 9	653 12 8	774 17 5
1881.....	104 17 10	725 2 0	829 19 10
1882.....	134 7 0	824 15 0	959 2 0
1883.....	136 1 0	1055 7 0	1211 8 0
1884.....	164 18 8	678 2 11	833 1 0
1885.....	218 10 0	1074 19 0	1293 9 0

This year the success was even more remarkable, the number of entries increased by 494, being 1870, as compared with 1376 last year. On the first day, Wednesday, the amount taken at the gates was £216 0s. 4d., being £148 7s. 7d. at half-crown, £51 4s. 6d. at one shilling, and £16 8s. 3d. afterwards. This was £2 9s. 8d. less than last year. On Thursday £1083 18s. 0d. was taken at the gates up to six o'clock, and a total up to night of £1151 9s. 8d., making £1367 9s. for the two days, as against £1293 9s. last year, giving an increase of £74. Over 35,000 persons were admitted to the Show grounds on Thursday, the greatest number that has ever attended this Exhibition. An excellent plan is adopted of selling as many tickets before the Show as possible, and this season the number is larger than usual, so that the income from all sources is likely to give an even larger balance than last year, which amounted to £532.

With such success the Society can well afford to be liberal, and they not only provide substantial prizes in all the leading classes, they engage two first-rate bands, the Grenadier Guards and the Royal Horse Guards, with numerous other attractions, including balloon ascents and display of fireworks, that though having no direct bearing on horticulture, serve to attract the shilling paying public. Beyond this, however, the Society has expended a portion of their surplus in beautifying the charming Quarry Grounds in which the Show is held, they have also conferred several other benefits on the town, so that besides greatly encouraging the horticulture of the district, they have provided an excellent holiday for the people and made a substantial use of their profits.

The Quarry Grounds is a most pleasant and appropriate site for a horticultural exhibition, forming a kind of natural amphitheatre, with the river Severn sweeping round at the base and skirted by avenues of grand old lofty Limes. The grounds are well kept, the lawns neat, and a central hollow termed the Dingle is laid out with flower beds and planted with shrubs, a small lake and fountain adding much to the beauty of the scene. It is, in fact, one of the most charming situations for a flower show that could be selected.

Much credit is due to the Hon. Secretaries, Messrs. Adnitt and Naunton, who have worked most assiduously in the interest of the Society, and have the satisfaction of seeing their efforts crowned by success. They have been also ably assisted by the President, W. Orme Foster, Esq., Apley Park, Bridgnorth, and the following Committee:—G. M. Salt, Esq. (Chairman), T. Southam, Esq. (the Mayor of Shrewsbury), Rev. J. H. E. Charter, Rev. J. R. Legh, Rev. R. E. Warren, Colonel Brandt, Messrs. J. Blockley, J. Blower, J. Brandt, W. L. Browne, C. Chandler, W. G. Cross, V. Crump, H. C. Clarke, J. Eutwistle, T. Groves, J. M. Harding, W. H. Harrison, J. Kent, W. E. Litt, J. A. Lea, G. Mitchell, T. Morris, H. J. Oldroyd, D. H. Owen, H. Owen, E. C. Peele, W. Pritchard, E. W. Pritchard, J. Robinson, J. Parsou Smith, R. Taylor, and H. H. Treasre, and the following professional gardeners—Messrs. Edwards, Hawkesworth, Lambert, Milner,

CUT FLOWERS.—One side of the long tent containing the fruit, vegetables, &c., was devoted to the cut flowers in competition, and a handsome display they produced. Roses for so late in the season were very bright and of good quality, especially so being the first twenty-four from Messrs. Perkins and Son, Coventry. Mr. E. Murrell, Sbrewsbury, also showed well in the same class, taking the second prize; while with eighteens Mr. W. Stubbs of Nantwich, Messrs. Burrell & Co., Cambridge, and E. Wright, Esq., Halston, were the prizetakers. Dahlias were capitally represented, Messrs. Heath and Son, Cheltenham, winning first honours for a superb stand of thirty-six blooms, the majority of which were in grand exhibition form, distinguished by their symmetry, clear bright colours, and good substance. As one of the first good stands yet shown we give the names of the best varieties included: J. Service, Mrs. Hobbs, Flag of Truce, John Downie, Mrs. Langtry, James Huntley, Mrs. Harris, James Vick, Henry Walters, John Bennett, Constance, Queen of York, Lady G. Herbert, Champion Rollo, Prince Bismarck, Harrison Weir, Henry Bond, Gaiety, Statesman, Mrs. Gladstone, Reporter, Mrs. Stancombe, G. Rawlings, Goldfinder, Royal Purple, Vice-President, James Cocker, Hugh Austen, J. C. Reade, Muriel, and W. H. Williams. Mr. W. Shaw, Blakebrooke, was second and third in the same class, and Messrs. Heath & Son were again first with twenty-four Dahlias, followed by the same exhibitor. The Rev. J. H. E. Charles, Severn Villa, also showed well. Asters were numerous and good, particularly those from Mr. A. Myers, Sbrewsbury. Gladioli were well represented by collections from Messrs. Burrell & Co., and W. Shaw; the prizes for hardy flowers being secured by Messrs. Burrell & Co., Pritchard & Son, Heath & Sons, in the order named. Messrs. Pearson & Sons had a beautiful collection of Zonal Pelargoniums for which

they were awarded the first prize, the stand comprising some of their finest varieties.

Bouquets were exhibited by several competitors, and some very tasteful arrangements were contributed. Mr. Hans Niemand, Harborne Road, Birmingham, had the best ball bouquet, and Messrs. Perkins & Son the best bridal bouquet, Messrs. Jones & Son and Messrs. Pearson & Sons following closely. With stands and displays of cut flowers Messrs. Jones & Son were the leading exhibitors, Messrs. Perkins & Sons being successful with button-holes.

FRUIT.—Excellent prizes were offered for Grapes and collections, and the result was the finest show of fruit that has been provided in the provinces this season. Indeed, the fruit section was one of the strongest in the Show, and this part of the Exhibition was a special success. It was notified in the prize list that "All fruit exhibited must be fit for table," and the whole of it was above the average in merit; in fact, inferior examples in the open classes were very few. Much attention was directed to the opening class in fruit, as this was one for six bunches of Grapes of three varieties, the Society's prize being £5, and to this was added £5 by the President, W. J. Foster, Esq. There were seven competitors, and many excellent bunches were staged. The Judges, after much consideration, finally awarded the first prize to Mr. Pratt, gardener to the Marquis of Bath, Longleat, Warminster, who showed two bunches of Black Hamburg, weighing 8½ lbs., large in berry and grand in colour; two bunches Alicante, 8½ lbs., quite ripe, finely coloured, and well shown; and two bunches of Mrs. Pince, 6½ lbs., but these, although good, were the weakest, as the berries in some instances were slightly deficient in colour near the footstalk; altogether these made a showy and meritorious stand. Mr. Stevenson, gardener to Colonel Pilkington, Liverpool, was second with Alicante, finely coloured, but the bunches were deficient in form; Madresfield Court was good in bunch and berry, but one of the bunches was unfortunately much rubbed; and Black Hamburgs of fine quality. Mr. Goodacre, gardener to the Earl of Harrington, Elvaston Castle, Derby, was third with Alnwick Seedling, beautifully coloured; Madresfield Court, green at the footstalk; and Muscat Hamburg too red. The other exhibits were so good that the Committee very generously added two good prizes, and the fourth was awarded to Mr. Gilman, gardener to the Earl of Shrewsbury, Ingestre Hall, Stafford, who had Madresfield Court, Lady Downe's, and Black Hamburg of great excellence so far as finish is concerned, but smallness of the bunches lowered them in the prize list.

Eighteen dishes of three bunches of black Grapes were staged. This was also a good class, and Mr. J. Barker, gardener to A. Baynes, Esq., Birkenhead, was placed first with magnificent bunches of Madresfield Court of fine form, berries very massive, and altogether superior. Second, Mr. J. Bennett, gardener to the Hon. C. H. Wynne-Corwin, with Alnwick Seedling of extraordinary merit, indeed perfect. Third, Mr. R. Brownhill, Ravenswood, Rockferry, with Black Hamburg of capital quality. Additional fourth, Mr. Ferguson, gardener to Mrs. Paterson, Rockferry, with the same variety; and additional fifth prize, Mr. Gilman, with small Black Hamburg. In the class for four bunches of white Grapes there were eleven competitors, the first prize going to Mr. J. Roberts, gardener to the Messrs. Rothschild, Gunnersbury House, Acton, who had excellent samples, comprising Muscat of Alexandria, fine in berry, very clean, and well coloured; and Foster's Seedling, large in bunch, fine in berry, and of a beautiful colour. Second, Mr. R. Pilkington, Rainford Hall, St. Helens, with Muscat of Alexandria, fine in berry, good in colour, but showing signs of having been too much syringed; and Foster's Seedling, not so grand in colour as in first stand. Third, Mr. J. Wilkes, gardener to J. Meakin, Esq., the Hares, Stone, Staffordshire, with Muscat of Alexandria, not well matched, but good, and Foster's Seedling, of fine size. Mr. J. Stevenson, was awarded an extra prize. In the class of three bunches of white Grapes fourteen lots were staged, the first prize going to Mr. Pratt for Muscat of Alexandria, the bunches being very large, finely formed, and moderately well coloured. Second, Mr. W. Weir, gardener to Sir R. A. Cunliffe, Acton Park, Wrexham, with Muscat of Alexandria, not so large, and of equal quality to the first. Third, Mr. R. Milner, gardener to the Rev. J. D. Corbett, Sundorne Castle, Shrewsbury, with Muscat of Alexandria, small in bunch but excellent in quality.

In the any other white variety class Mr. W. Leadbetter was placed first with Buckland Sweetwater, Mr. Milner second with the same variety, both first-rate, and Mrs. Darby, Adcott (gardener, Mr. R. Lawley) third with the same variety overthinned.

For a collection of fruit, twelve dishes, seven lots were staged, and Mr. J. Roberts, Gunnersbury, secured the first prize with an excellent collection. His dishes were Gros Maroo Grape, Muscat of Alexandria, Madresfield Court, and Buckland Sweetwater Grapes, a handsome Lady Beatrice Lambton Pine Apple, but poor in crown, Brown Turkey Fig, Sea Eagle Peach, Golden Perfection Melon, Lord Napier Nectarine, Hemskerk Apricot, Grosse Sucrée Strawberry, and Bigarreau Napoleon Cherries; a very fine collection. Second Mr. Gilman with Black Hamburg, Muscat of Alexandria, Black Alicante, and Foster's Seedling Grapes, not large in bunch, but of fine quality. A Smooth Cayenne Pine Apple, Royal George Peach, Brown Turkey Fig, Hero of Lockinge Melon, Morello Cherry, Violette Hâtive Nectarine, Early Favourite Plum, and Moor Park Apricot, all finely matured and only one or two points behind the first collection. Mr. Goodacre was third with fine Grapes, but small fruits, deficient in colour. Fourth Mr. R. Parker, gardener to John Corbett, Esq., Impney Hall, Droitwich, with fruit of excellent quality, but some of it was over-ripe. Fifth Mr. Edmonds, gardener to the Duke of St. Albans, Bestwood, Notts, also had a good collection, but Figs and other fruit were over-ripe.

For a collection of nine dishes Mr. Pratt won first honours, his Black Hamburg Grapes as well as the Muscat of Alexandria being the best two bunches, the former weighing 9½ lbs. and the latter 7 lbs. 14 ozs. The small fruits in this collection were of fair quality, but they were better in the collection from Mr. Lambert, gardener to Col. Wingfield, who was second, only the Grapes lost some points. Mrs. Paterson was third, and there were more local exhibits in this class than the larger one. Peaches were represented by eleven dishes, Nectarines by twelve, Apricots by fourteen, Plums fifteen, and Cherries eight. There were twenty green-fleshed Melons staged, and twenty-two scarlet-fleshed fruits. Mr. Lambert, Mr. Wallis (Keele Hall Gardens), Mr. Gilman, Mr. Milner, Mr. Goodacre, and Mr.

Meakin were the chief prizetakers in these classes. The collection of six dishes of hardy fruits was a very interesting feature, there being some fine Apples, Pears, Gooseberries, Cherries, Strawberries, Currants, Raspberries, &c., shown here, and the prizewinners were Mr. Goodacre, Mr. Purser (gardener to James Watson, Esq., M.P., Berwick House, Shrewsbury), Mr. Lambert, and Mr. G. Maylett. Amongst special exhibits of fruit Mr. Laxton, Bedford, had a fine dish of Mr. Gladstone Apple, and these were the ripest Apples in the Show.

VEGETABLES.—An important department in the Exhibition was that devoted to vegetables, the competition being remarkably keen in all the classes. With a collection of twelve varieties Mr. J. Lambert, a very successful exhibitor in other classes, was awarded premier honours for handsome, even, and well grown samples of Autumn Giant Cauliflower; Lyon Leeks, excellent; Snowball Turnips, good; Major Clarke's Celery, wonderfully large, heavy heads; Veitch's Improved Carrots, clean, even, and bright colour; Rowsham Park Hero Onions, Sutton's Seedling Potatoes, capital Beet, Canadian Wonder Beans, Trophy Tomatoes, Culverwell's Marrow Peas, and Purley Park Cucumbers. This collection attracted much admiration for the fine quality of the vegetables, which were, moreover, very tastefully set up on Moss and Parsley. Mr. R. Milner was second with a good collection, but several points behind the first; Mr. A. Purser, gardener to J. Wat-ou, Esq., Berwick, being third. The last-named exhibitor was, however, an excellent first with six dishes of Potatoes, clean even tubers of Beauty of Hebron, Webb's Surprise, Cosmopolitan, Reading Russet, Blanchard, and Vicar of Laleham. Mr. S. Bremnell, gardener to J. Beattie, Esq., Overley, was second, and Mr. J. Lambart third amongst nine competitors. There were several other classes for Potatoes, in which there were from eleven to twenty competitors; Messrs. Shepherd, Milner, Lambert, Bremnell, Withers, and Purser winning the principal prizes. Ten dishes of Tomatoes were staged. Mr. W. Shaw, Mr. E. Gilman, and Mr. M. Owen, gardener to Viscount Combermere, Combermere Abbey, were first, second, and third respectively, but in the opinions of some gardeners the second fruits were fully equal to those placed first. There were fifteen exhibitors of Peas, the same number of Onions, Carrots twenty-eight, Cucumbers fifteen, Cauliflowers twenty-one, Celery thirteen, Beans sixteen, Parsnips fourteen, and Turnips twenty-one, all open classes, and the exhibits were so nearly equal in many cases that this portion of the Exhibition occupied the Judges a considerable time.

MISCELLANEOUS EXHIBITS.

The non-competing exhibits did not form so large a portion of the Show as is usual at large exhibitions. Messrs. James Dickson & Sons and Messrs. F. & A. Dickson, Chester, had choice collections of stove and greenhouse plants and hardy flowers. Mr. E. Murrell had a group of select Conifers and healthy well-fruited Apple trees in pots. Mr. T. Laxton, Bedford, contributed a collection of novelties in vegetables and flowers, comprising some pretty Sweet Peas, a very bright scarlet hybrid Dianthus named Mrs. Laxton, which was certificated, miscellaneous hardy flowers, Girtford Giant Runner Beans of immense size, Evolution Peas, Sandy Prize White Spanish Onions, and a dish of Mr. Gladstone Apple of good flavour.

Messrs. Webb & Sons, Wordsley, Stourbridge, had a handsome stand of vegetables representing their improved varieties and arranged by their Shrewsbury agent, Mr. Goucher, of Shoplatch. Some of the most notable varieties staged were Early Six Weeks Turnips, Red Globe Tripoli Onions, Mammoth Red Celery, Selected Scarlet Runner Beans, Wordsley Wonder Peas, very fine; Defiance Intermediate Carrots, New Colossal Leeks, Golden Queen Beans, and a handsome fruit of Marquis of Bute Melon beautifully netted. Several local tradesmen also contributed collections of plants and flowers.

The cottagers' tent was well filled with exhibits, there being about 900 entries, and the general quality of vegetables and fruits was most satisfactory.

YEOVIL.—AUGUST 17TH.

THE county of Somerset can boast of having several good horticultural societies, who annually hold very successful exhibitions, and among these must be included Yeovil. Better prizes are given elsewhere, these naturally attracting the leading exhibitors; but although the Society under notice cannot attain to this, they yet, thanks to the energy and ability of the Hon. Secretary (Mr. W. T. Maynard) and Mr. B. R. Davis, on whom falls the onerous duty of arranging the exhibits, succeed in collecting a generally good and most interesting exhibition. It should be added the Society does not receive the support locally it deserves, or otherwise under its present management it would soon attain to the front rank.

Groups of miscellaneous plants are always the principal feature in the principal plant tent, and these are more remarkable for their brightness than for effective arrangement. Of the four in competition the Judges rightly preferred that by Mr. W. Appleby, gardener to T. W. Dampier Bide, Esq., who had larger central plants, including good Arecas and other Palms and Crotons, while interspersed among commoner plants were well-flowered specimens of Epidendron prismatocarpum, Odontoglossum Uro-Skinneri, and other Orchids. The second prize was awarded to Mr. T. Hannan, gardener to E. Whitby, Esq., who had a rather flat but very bright group, in which Tuberous Begonias largely figured; while the third prize was well won by Mr. C. Anthony, gardener to T. Moore, Esq. The best twelve stove and greenhouse plants were staged by Mr. T. Wilkins, gardener to T. Merthyr Guest, Esq., who had fine specimens of Paudanus Veitchi, Latania borbonica, Croton Johannis, Aclypha tricolor, Caladium Madame Fritz Kœchlin, Cissus discolor, Bougainvillea glabra, a handsome globular specimen of the pretty but nearly hardy Solanum jasminoides, Vinca rosea, Cassia corymbosa, and Begonia weltoniensis. Mr. W. Appleby was a good second, and Mr. J. Bowles, gardener to J. P. Godden, Esq., third. Mr. Wilkins was also easily first for nine Ferns, having among others large healthy specimens of Nephrolepis davallioides furcans, Gymnogramma chrysophylla, Microlepia hirta cristata, and Davallia Mooreana. Mr. Appleby was a creditable second, his group including an immense plant of Asplenium lucidum and a good Microlepia hirta cristata; and Mr. Giles Rendle, gardener to Mrs. Nicholson, third. Fuchsias on the whole were not well shown. Mr. C. Anthony was a creditable first for six specimens; Mr. T. Hannan second; and Mr. G. Gillingham, gardener to R. Phelps, Esq., third. The best six Coleus were

staged by Mr. S. Kidley, gardener to Mrs. Helyar, Coker Court, who had well-grown plants of *Triomphe de St. Andre* (one of the richest coloured varieties in commerce), Mr. Stoddart, *Butterfly*, *Crimson Velvet*, *Lovely*, and *Dickson's Gem*. Mr. Gillingham was second, and Mr. Hannan third. Tuberous Begonias were well represented, Mr. J. H. Copp, gardener to J. S. W. E. Drax, Esq., was a good first; Mr. W. Pollard, gardener to H. B. Batten, Esq., second; and Mr. Hannan third. Mr. Copp was also first for six remarkably well-grown Cockscombs—*Sutton's Dwarf*; the second prize going to Mr. Appleby, who had very good plants. Mr. Copp was first for Balsams, Mr. W. Raymond second, and Mr. C. Anthony third.

There were various classes for cut flowers, the majority being very well filled, the ladies' exhibits being especially praiseworthy. In the open class for twenty-four Dahlias Messrs. Keynes, Williams & Co., Salisbury, were easily first, their collection including grand blooms of *Victor*, *Muriel*, *Colonist*, *Polly Williams*, *Henry Bond*, *Crimson King*, *Joseph Ashby*, *H. Walton*, *Eric Fisher*, *Gloire de Lyon*, *Mrs. Gladstone*, and *James Cocker*. Mr. J. Nation, *Stapleford*, was a good second, and Mr. S. Tottle third. For single Dahlias Messrs. Keynes, Williams & Co. were placed equal first with Mr. J. Nation, both having very fine blooms, but the former had them set up in much the best style. In the local class for twelve Dahlias Mr. W. Taylor was first, and for singles Mr. T. Hilborne and Mr. H. Baker were respectively first and second, both staging creditably. Roses were not largely shown, Mr. J. Campbell, gardener to S. P. Budd, Esq., *Ba'h*, being the most successful exhibitor. Mr. Tottle had the best stands of *Gladioli*, taking a first prize and also an extra, and Mr. J. Nation was second. Mr. T. Hilborne was first for *Asters* and *Carnations*, and Mr. C. Anthony had a first for *Asters*. There were two classes for bunches of cut flowers, Mr. W. Iggulden, *Marston House*, *Frome*, being a good first in both the open and amateurs' classes, putting up a good lot of choice flowers in both instances, the names of the other prizewinners in these classes not being obtained. The vases of wild flowers by ladies was especially noteworthy, but, unfortunately, the best arrangement was disqualified on the grounds that the fine double White Water Lilies should not be admitted. Miss Mayo, *Yeovil*, was first, Mrs. W. Marsh and Miss J. Watts second, and Miss Bond third. Master F. B. Davies was first for a capital design of flower garden.

Fruits and vegetables were more largely and better shown than usual, one large tent being devoted to them, and independent of a capital display of cottagers' produce in another tent. The best collection of eight dishes of fruit, exclusive of a Pine Apple, was staged by Mr. S. Pulman, gardener to R. B. Sheridan, Esq., who had excellent stands of *Black Hamburgh* and *Muscat of Alexandria* Grapes, *Golden Perfection* Melon, *Bigarreau* Cherries, *Green Gage* Plums, *Rivers' Orange Nectarine*, *Moorpark Apricots*, and *Early Grosse Mignonne* Peaches, all in capital condition. Mr. Iggulden was a close second, but his good Grapes evidently had done service elsewhere. The third prize was awarded to Mr. A. Crossman, gardener to J. Bruton, Esq., who had a fine *Hero of Lockinge* Melon, and several other very good dishes. Mr. Appleby was first for four varieties of fruit; Mr. T. Horsey, gardener to H. B. Forbes, Esq., second, and Mr. T. Wilkins third. Mr. Iggulden was first for a Pine Apple, staging a good *Smooth Cayenne*. The same exhibitor was first for *Black Hamburgh* Grapes, having compact and fairly well finished bunches, Mr. Pulman was a good second. For any other black variety Mr. Crossman was first with large bunches of *Black Alicante*. Mr. Pulman was first for *Muscat of Alexandria*, and was closely followed by Mr. Iggulden, and Mr. Pulman was also first for any other white variety with good examples of *Buckland Sweetwater*, Mr. Crossman coming second with *Waltham Seedling*, but erroneously termed a *Frontignan*. Mr. Crossman was first for a Melon, having a good fruit of *Hero of Lockinge*, and Mr. J. Allen, gardener to W. S. Cotter, Esq., was second. The best indoor and also outdoor Peaches were shown by Mr. Pulman, who had *Early Grosse Mignonne* and *Hale's Early* respectively, both being handsome dishes. Mr. Crossman was second for indoor Peaches, staging a fine dish of *Waterloo*, and Captain R. Chaffey was second with outdoor Peaches, winning with *Hale's Early*, of which other exhibitors also had good examples. Mr. Crossman was the only exhibitor of outdoor Nectarines, and was also most successful with Plums and other hardy fruit. Apricots were very fine, and with these Mr. S. Kidley was a good first, and Mr. Crossman second, both having *Moorpark*. There were also a number of classes provided for amateurs not employing a regular gardener, and these made a creditable display.

The vegetables generally were remarkably fine, and would have been hard to beat anywhere. Mr. J. H. Copp had the best collection of eight varieties, these consisting of *Wright's Grove White Celery*, *Hackwood Park Tomatoes*, *Veitch's Autumn Giant Cauliflower*, *Telephone Peas*, *International Kidney Potatoes*, *Tender and True Cucumbers*, *Veitch's Mammoth Runner Beans*, and *Leeks*, all exceptionally good and well set up. Mr. C. Bowers was a good second; and several other good lots were staged, but it is not the fashion in these parts to offer third prizes. Mr. Hannan was first for Tomatoes, showing very fine fruit of *Reading Perfection*, the second prize going to Mr. Copp. Classes were provided for Carrots, Celery, Potatoes, Beans, and other vegetables, all of which are well and extensively shown.

Several non-competitive exhibits were noticeable, the most attractive being a very fine group of Tuberous Begonias, alternating with circles of Maidenhair Ferns. The strain of Begonias was equal to any we have seen elsewhere, many of the doubles being noteworthy, and Mr. B. R. Davis, nurseryman, *Yeovil*, is to be congratulated for this effective display. Mr. John Scott, *Merriott Nurseries*, also exhibited a number of flowering and fine foliaged plants, which were arranged through the centre of the tables in the fruit tent. Mr. Jarman, *Chard*, had a capital lot of *Carnations*, *Dahlias*, *Lilies*, *Roses*, *Begonias*, and other cut flowers; and in this department Mr. B. R. Davis had extensive exhibits.

TROWBRIDGE SHOW.—AUGUST 18TH.

THERE are few if any older societies than this in the West of England, thirty-seven annual exhibitions now having been held, and besides being the oldest yet might easily be made the best in this part of the country. There are no lack of funds and no signs of any falling off in the crowds, numbering probably 14,000 visitors, who flock to the ground, and all that is wanted is a revision of the prize list, so as to bring it up to the times. Further, if instead of about thirty judges they were content to engage the services of four

experienced exhibitors and growers, everyone would have confidence in them and there would be less of a lottery than is the case when round men are put into square holes, or, in other words, are judging in departments where they have little experience. The Trowbridge meeting is a most enjoyable one, and it is not the fault of the Hon. Secretary, Mr. J. Huntley (and who has filled that office for upwards of twenty years), and the gentlemen who assist him if there is any unpleasantness connected with the Exhibition.

Nowhere else are better Fuchsias seen than at Trowbridge; in fact, we have not seen any nearly so good this season. They are always massed at one end of the tent and completely dwarf all other plants near. The best six specimens were staged by Mr. J. Matthews, gardener to W. R. Brown, Esq., who had immense and perfect pyramids, each nearly 12 feet high and splendidly flowered, of *Doel's Favourite*, *Mrs. Hay*, *Beauty of Trowbridge*, *Rose of Castile*, *Charming*, and a seedling. Mr. Matthews was also first for four Fuchsias, these consisting of huge and very freely flowered pyramids of *Arabella*, *Ross of Castile*, *Doel's Favourite*, and the Hon. Mrs. Hay. Mr. G. Tucker, gardener to Major W. P. Clarke, was a creditable second with *Bountiful*, *Load-me-Well*, *Harriet Lye*, and *Charming*, all of good size and well flowered. There were several classes for stove and greenhouse plants, in all of which the competition was close and good. In the open class for nine distinct varieties, Mr. J. F. Mould, *Pewsey*, was a good first, his collection including capital specimens of *Erica Marnockiana*, *E. Austinana*, *E. Aitoni turgida*, *Dipladenia Brearleyana*, *Allamanda Hendersonii*, and *Clerodendron Balfourianum*. The second prize was awarded to Mr. J. Matthews, who had well-flowered plants of *Erica exquisita*, *E. Marnockiana*, and several other creditable specimens. Mr. Mould was also easily first for nine fine-foliaged plants, some of the best of these being *Crotons majesticum*, *C. Sunset*, *C. Andreanum*, *Cycas revoluta*, and *Cocos Weddelliana*. Mr. W. C. Drummond, *Bath*, was placed second for a fairly good collection, and he also took a prize for flowering plants. In the amateurs' classes the best six specimens were staged by Mr. J. Tucker, who had very creditably grown plants of *Anthurium Schertzerianum*, *Stephanotis floribunda*, with extra fine blooms; *Ixora Fraseri*, *Statice profusa*, *Rondeletia speciosa*, and *Bougainvillea glabra*. The second prize was won by Mr. H. Pocock, gardener to H. P. Haden, Esq., and the third by Mr. Matthews, each having several good specimens. The class devoted to a single specimen was very interesting, several good things being shown. The first prize was awarded to Mr. G. Pym, gardener to Mrs. Gouldsmith, who had a beautifully bloomed *Cattleya Loddigesi*, with eight strong spikes bearing about twenty-four blooms. Mr. F. Perry was second with *Pilumna nobilis*, this having twenty-seven well-developed blooms.

The class for new plants included several that were far from being novel, the comparatively well-known but very beautiful *Cattleya Dowiana*, staged by Mr. Richman, gardener to G. L. Palmer, Esq., taking second prize, Mr. Mould taking the first with a vigorous and well-coloured *Croton Bergmanni*. Messrs. Matthews and Mould were the winners with *Ericas*; J. Durbin, gardener to J. Tredwell, Esq., *A. A. Walters*, *Bath*, with single and double Tuberous Begonias; J. Matthews, G. Pym, and H. Pocock, with *Coleuses*; the exhibits being most praiseworthy in each instance, and there were well filled classes for *Gloxinias*, *Cockscombs*, *Balsams*, *Zonal Pelargoniums*, and *Achimenes*. The hanks of Ferns are always a feature in the Trowbridge shows, the prizes being usually won by local growers. Mr. G. Tucker was first for fifteen Ferns and Mosses, these including fine healthy specimens of *Gymnogrammas*, *Adiantums*, *Davallias*, *Aspleniums*, and other well-known kinds. He was very closely followed by Mr. Jas. Coke, gardener to A. P. Stancombe, Esq., and equal thirds were awarded to Mr. H. Clack, gardener to C. Colston, Esq., and Mr. H. Pocock. Both the amateurs and cottagers also exhibited plants in pots in goodly numbers and in a creditable condition.

About thirty classes for cut flowers were provided, and in nearly every instance the competition was very keen. Mr. J. Mattock, *Oxford*, took the first prize for twelve triplets of *Roses*, these including *Emile Hausburg*, *Duchess of Bedford*, *Horace Vernet*, *Perle des Jardins*, *Maurice Bernardin*, *Marie Van Houtte*, and *Niphetos*. Mr. J. Campbell, gardener to S. P. Budd, Esq., *Bath*, was second, and Messrs. J. Cooling & Son third, both exhibitors having many good blooms. Mr. Mattock was also first for twenty-four single blooms, among these being good blooms of *La France*, *Benoit Comte*, *C. Darwin*, *Baroness Rothschild*, *Marquise de Castellane*, and *Souvenir de Paul Neyron*. Messrs. G. Cooling & Son were second, and Mr. H. J. Gibbs third. The Dahlias generally were very fine. Messrs. Keynes, Williams and Co., *Salisbury*, were first for both twenty-four blooms and twelve fancies, having a grand lot of blooms in both instances, the names of which the crowds prevented our taking. They also received certificates for such fine new sorts as *Colonist*, *Illuminator*, *Victor*, and *Defiance*. Mr. T. Hobbs took a second prize in the big class, and Mr. T. Humphreys was first and Mr. H. Bush second with twelve blooms. Messrs. Keynes, Williams & Co. were also first for twelve Pompons in bunches, and this very attractive collection consisted of *Royalty*, *The Khedive*, *Lady Blanche*, *Golden Gem*, *Catherine*, *Darkness*, *White Aster*, *Favourite*, and *Dora*. Mr. Humphreys was a good second. Mr. A. A. Walters, *Bath*, had a very fine lot of single Dahlias, and was easily first, the second prize going to Mr. W. J. Jones. Mr. Walters exhibited quilled and other *Asters* successfully, as also did Mr. W. J. Jones, Mr. Salter, and several others. Mr. G. S. Walters, *Calne*, had a grand lot of *Gladioli*, and took the first prize, Mr. J. Mattock being second, and Mr. W. Narroway third. There were fewer vases, bouquets, and wreaths than usual, and the first named were very inferior. Mr. M. Hookings was first for a lovely bouquet, and Mr. G. Garraway, *Bath*, second, while the beautiful wreath made by Miss Durbin was easily first, Mr. Garraway being second, and Mr. Matthews third.

One tent was devoted to fruit, and here the Judges, four in number, and in one group, all had their knives at work, nothing but the solitary Pine Apple shown by Mr. Iggulden, *Frome*, and which took the first prize, escaping. Melons should be cut, but surely there are plenty of good men to be found who can estimate the merits of a dish of Peaches and other fruit without mutilating the best of them. Mr. A. Miller, gardener to W. H. Long, Esq., *Road Ashton*, was easily first for a collection of ten dishes of fruit, these consisting of *Black Hamburgh* and *Foster's Seedling* Grapes, *Blenheim Orange Melon*, *Hale's Early*, and *Violet Hative Peaches*, *Moorpark Apricots*, *Brown Turkey Figs*, *Early Orleans* and *Washington Plums*,

and Newington Nectarines, altogether a pretty lot. Mr. W. H. Prosser, gardener to H. Laverton, Esq., Westbury, was a creditable second. For two bunches of black Grapes Mr. C. Warden, Clarendon Park, Salisbury, was a good first, staging well-finished Black Hamburg, the second prize going to Messrs. D. Evry & Son, Bath, who had fairly good Alicante, and Mr. Kneo was third with Black Hamburg. For any black variety of Muscat flavour Mr. Clack, Devizes, was first, having Madresfield Court in very good condition, Mr. Warden being a good second with the same variety. Mr. Iggulden was first for white Muscats; Mr. T. Loosemore, gardener to W. Cooper, Esq., Clifton, second, and Mr. F. Smith, Palace Gardens, Salisbury, third, all having moderately good exhibits of Muscat of Alexandria. In the any other white class Mr. A. Young, Clifton, was first with Buckland Sweet-water that had evidently been cut for many days, Mr. Iggulden following with fine bunches of Foster's Seedling. Mr. H. Clack was first for a green-flesh Melon, and Mr. Prosser second, the former staging a good fruit of Favourite, and the latter a seedling. A handsome, but rather over-ripe fruit of Longleaf Perfection staged by Mr. G. Taylor, gardener to A. R. Baily, Esq., Frome, was disqualified as being white fleshed, a rather hard decision, seeing that a white-fleshed class is not yet officially formed, and a certificate of merit was but poor compensation. In the any other variety class, intended really for scarlet-fleshed sorts, Mr. H. Prosser was first for a very good Blenheim Orange, and Mr. J. Preston second with Best of All, which was really a green-flesh. Mr. T. King, Devizes Castle, had the best dish of Peaches, Dr. Hogg in good condition; and Mr. Iggulden was first for Nectarines, staging a good dish of Lord Napier, which happened to be of better flavour than a prettier lot of the same variety near it. Mr. J. Weston, gardener to the Rev. C. C. Layard, was first for Apricots, Mr. Iggulden for Cherries, Mr. Garraway for Green Gages, and Mr. Hall for Plums, the competition being good in each instance. Apples and Pears were also well shown, the dishes of Beauty of Bath being particularly handsome, and the dishes of Stirling Castle and Ecklinville Apples, which gained Mr. A. Miller the first prize in the class for two culinary varieties, were noteworthy.

A very good lot of vegetables were shown, the professionals from Bath being in good form as usual. However, Mr. A. Miller succeeded in taking the first prize for a collection of nine varieties, these consisting of very fine White Elephant Onions, spring sown, particularly good Green Glove Artichokes, and which one of the five Judges thought of little worth in a collection, good Snowball Turnips, Ne Plus Ultra Peas, Canadian Wonder Kidney Beans, Reading Russet Potatoes, Moore's Cream Vegetable Marrows, Old Red Tomatoes, and very fine Ne Plus Ultra Runner Beans. Mr. T. Evry, Bath, was a good second, and an extra third was awarded to Mr. G. Garraway. Messrs. Cooling & Son were first for a brace of Cucumbers, having a fairly good brace of Improved Telegraph. Mr. Smith, Bath, was first for kidney Potatoes, and Mr. Garraway with rounds, and Mr. Miller was first for Onions, having a fine dish of White Elephant.

FLOWER GARDENING IN THE LONDON ZOOLOGICAL GARDENS.

A VISIT to the "Zoo" is at all seasons interesting and instructive, the Zoological Society's large and varied collections of wild beasts, fowls, reptiles, &c. &c., containing specimens from widely different regions, brought within easy access to visitors. However, the major part of our attention was directed to the flower garden, on bedding out of which there is a large and varied quantity in different systems, and to all appearance greatly appreciated by the majority of visitors, who indulge in favourable encomiums as they ramble leisurely through the gardens.

Inside the south gate to the right an effective border of herbaceous plants attracts attention, and round the curve of the walk on the left is a glorious collection of East Lothian Stocks, some 3000 plants in a serpentine border which flanks this side of the flower garden. These Stocks at the time of our visit were a striking success; the strain appeared to be all that the fancier could desire, and includes a great variety of colours. Conspicuous amongst the collection was a purple Stock from Hawick. The white Wallflower-leaved Stock grew robust and dense, and the purity of its whiteness at once riveted attention. This border, backed with hardy climbers, has been a great feature of interest in the gardens this season.

The flower beds in front of the above border are laid out on grass, the prevailing shape being oblong and circular, or any form that appeared to commend itself for the working out of details at bedding out time. The following beds at the time of our visit looked very bright:—A circular bed, centre planted with Pelargonium Black Douglas (good bronze); next a band of Ageratum Her Majesty, edged with Tropæolum Vesuvius. A border flanking the south-western side of this garden was effectively planted with a permanent edging of Euonymus radicans variegata. Next a magnificent line of Amaranthus caudatus (Love-lies-bleeding), an effective line of Nicotiana affinis, and single Dahlias planted alternately. A back line of mixed Sweet Peas, in fine condition, contributed to the effectiveness of the border.

A pair of circular beds in the immediate vicinity had a bold agreeable appearance. The centre of one contained a fine group of Cannas, a line of Obilian Beet, edged with Pyrethrum aureum; the other bed a mass of Nicotiana affinis, a line of Pelargonium Robert Burns, an outer edging of white Lobelia Snowball and Echeveria secunda glauca. The air was impregnated with the fragrance of the Nicotiana affinis on the evening when we saw it, and to see it at its best it should be observed in the morning and evening, as the flowers close in the daytime.

Another brilliant bed contained a centre of Pelargonium Brutus (crimson), a line of P. Robert Fish, edged with Lobelia Blue King. In close proximity another large circle was planted with Pelargonium Mrs. Holden (probably the best pink bedding Pelargonium in cultivation), next a line of Veronica Andersoni variegata, edged with Lobelia Blue King.

We turn for relief to a large oblong bed filled with sub-tropical plants,

such as Phormium tenax, Monstera deliciosa, Aralia Sieboldi, Ficus elastica, Phoenix reclinata, Chamerops Fortunei, Dracæna congesta, and others. This bed was edged with Echeveria secunda glauca, carpeted with Tradescantia zebrina, and looked bold and effective. A very pleasing pair of beds were planted obliquely with Pelargonium Violet Hill, and P. Flower of Spring, a line of Tropæolum Vesuvius edged with Echeveria secunda glauca. A mass of Pelargonium Henry Jacoby, a band of Ageratum Her Majesty edged with Pyrethrums and Echeverias, made up a very showy bed. A bed of Pelargonium Golden Fleece and Viola Bluebell, an edging of Echeveria secunda, had a charming effect in this garden; a judicious introduction of tropical plants enhances the effect. A line of Thomson's Beet, considered to be an improvement on Dell's variety, is compact and brilliant.

Not the least feature of interest in the immediate vicinity of this portion of the grounds is what is known as the Three Island Pond planted with a variety of trees and shrubs and natural-looking Grasses, to afford protection to the wild fowls that are here kept. Returning to the main walk the great attraction is a magnificent carpet bed 45 by 8 feet. The design, an ornamental scroll, was worked out effectively with the following plants: The groundwork consisted of Antennaria tomentosa, Alternanthera paronychioides aurea, and A. paronychioides major, a line of Pyrethrum selaginoides, a marginal edging of Echeveria secunda, filled in between with Stonecrop, made up a very good edging. Kleinia repens was effectively used for panelling. Specimens of such plants as Semperivivum, Pachyphytum, and dwarf Agaves planted in advantageous positions tended to give variety and enhance the appearance of the whole. This bed finds many admirers, and in its way it would be difficult to surpass. There are other carpet and succulent beds, but do not call for special attention. As we proceed a geometrical flower garden comes in view, and in front of the monkey house the garden consists of three plots of rhombus-shaped figures or beds 100 yards in length. These beds were all brilliant masses of various colours, which looked dazzling in the sunshine when viewed from one end.

A border in front of the western aviary filled with single Dahlias, Gladiolus, and a fine collection of border Carnations, principally seedlings, &c, is enjoyable, and on nearing the main entrance we notice a pair of Eucalyptus globulus 25 feet high, one at each side of the gate. At each side of the main walk are what is known as the terrace borders, 300 feet long, planted ribbon fashion. Front line an edging of Dactylis glomerata variegata, next a line of Ageratum, succeeded by a line of Calceolaria Golden Gem, the latter backed with Pelargonium Vesuvius, next Calceolaria Bijou, and at the extreme flank a line of Pelargonium Mrs. Holden. A decided improvement is effected in those borders by the introduction of Cannas and Dracæna congesta, a line at each side about the central portion planted alternately some 10 feet apart, without the effects obtained by such plants as the latter named ribbon borders are stiff and formal.

As we ascend the steps of the promenade from the terrace walk, at the left in a recess stands a gigantic balloon-shaped basket, 8 feet high, filled to repletion with Fuchsias, Tropæolums, Pyrethrums, and Lobelias. The walls of this promenade are ornamented with ten vases along each side tastefully filled with a variety of plants. The promenade commands a fine view of the principal portions of these interesting gardens. There are several other phases of gardening carried out at the "Zoo" under the able directorship of Mr. J. Young, the Society's head gardener, but time and space forbids further details; suffice it to say that every part is kept in the highest possible condition.—D. S. W.

MORINA LONGIFOLIA.

FEW plants are better adapted for the smaller hardy flower gardens than this handsome and singular species. It is often considered tender, but this we believe is true only in cases where the soil is heavy and drainage very imperfect. It is a fact, however, that even in light well drained soils it will dwindle unless transplanted, or the soil immediately round the roots taken away and new supplied. It is a voracious feeder, and attention should be given to supplying it occasionally with a top-dressing or liquid manure. It belongs to the same order as the Scabiosas and Cephalaria, common garden plants, but it is singularly like a Thistle before the flowers open. There are half a dozen or more so-called species all inhabiting the Himalayas. The one in the annexed cut and that known in gardens as Wallichiana, the correct name of which is *M. persica*, are very near to each other indeed under ordinary circumstances; and after being cultivated for a short time in the gardens they are scarcely distinguishable. Another which is in cultivation, although not general, is *M. Coulteriana*, a species lately figured in the "Botanical Magazine" as having flowered on the new rockery at Kew, and which we believe was first introduced in quantity by Dr. Aitchison from Afghanistan, where it is also found plentifully. It grows from 2 to 3 feet in height, more or less hairy upwards; the leaves, which are spinous toothed, are about 6 inches long, narrow, and glabrous. The calyx lobes differ from the above two in being divided, mucronate or spinous. The flowers almost as large, of a pretty primrose yellow. It likes shade, and does best in a peaty soil. Subalpine Himalayas at elevations of 9000 to 13,000 feet, flowering in June and July.

M. betonicoides belongs to quite another section, in which the fertile stamens are four instead of two, as in the above. It also is nearly related to *M. nepalensis*, and of which it may be said to be a more fully developed state. The lower leaves are all spinous, not toothed, as in the others; the flowers small, few in a head, of a pretty purple colour. Flowers June. Native of Sikkim Himalayas, 10,000 to 13,000 feet. *M. longifolia*, which may be made to include *M. persica*, grows from 3 to 4 feet in height, covered with a fine pubescence. The leaves are 6 inches or more long, doubly toothed, and spinous, often covered with hairs. Flowers pink, about an inch in diameter. Flowers June and July. It may be increased

in other plants. There are also several other shades of colour in this plant, from white to red and pale blues, dark purple, &c., all of which I have grown from one packet of seed, and which look very pretty mixed.

Chrysanthemum segetum has lately been patronised by some people. This also well repays for cultivation, as its flowers come much larger than in the fields, and by a little selection in seeding the flowers may be had much more perfect in form. Both of these are very useful for cutting, as they afford a large supply of flowers from a small space and last well in water. The flowers of the *Chrysanthemum* also continue to develop after they are cut for several days. I lately saw a dinner-table which was decorated with a mixture of these two, and which was one of the best and most effective combinations I have ever seen. A quantity



Fig. 26.—*MORINA LONGIFOLIA*.

by division in spring, but seeds ripen freely, and these should be sown as soon as gathered in autumn. The plant is found at an elevation of 9000 to 14,000 feet in Temperate and Alpine Himalayas.—D.

BRITISH FLOWERS WORTH CULTIVATING.

MANY of these are far more telling and conspicuous than some of those introduced to this country, and would most likely improve greatly under cultivation; and yet they are passed over unnoticed by the majority of cultivators, possibly because they are easily obtained. But there are signs of increasing interest in our native plants, and deservedly so, for if only a portion of the care is expended which is, as a rule, bestowed on the natives of southern Europe, they will give better returns for the attention. Some of those I am about to mention are cultivated now in a limited sense.

Centaurea cyanus, the beautiful blue Cornflower. I wonder this is not grown by everyone. The colour of its flowers is seldom met with

of this *Chrysanthemum*, which I saw a few days since growing in a field with Poppies and ripe Barley amongst it, had a very pretty effect. Both the *Centaurea* and *Chrysanthemum* may be sown in September to flower early the following summer, and if another sowing is made early in the spring it will keep up the supply until late in the autumn.

Chlora perfoliata is another very pretty wild annual. This is so much sought after here when in flower, that I have hitherto failed to obtain any ripe seed to commence its cultivation. The flowers are a very soft yellow colour, and in habit the plant resembles very much the common Centaury (*Erythraea Centaurium*). Its flowers, however, are much larger.

Anchusa officinalis is a very showy biennial if planted in poor stony soil, which reduces its straggling habit. It is occasionally found in gardens.

Carduus eriophorus, one of the noblest of our native plants; also a biennial. It forms a very striking object where there is room for it to develop as a single specimen, and as it grows from 3 to 5 feet high it requires to be placed in the background. Its four rows of leaflets on each petiole are very curious and pretty.

Carduus tuerosus is a very pretty perennial which requires a moist position to grow in, and will well repay for a little care in cultivation.

Geranium pratense is sometimes found under cultivation. It is very striking when seen in a mass from a distance, and likes a moist position.

Malva moschata is sometimes offered for sale, and is worthy of a place in any herbaceous border.

Epilobium angustifolium is occasionally found in gardens, and requires a position where it will not be disturbed and not overrun other plants. A good mass of it with a background of shrubs is very effective. There is also a white variety. It is perennial, and easily increased by division.

Jasione montana, a plant averaging about 9 inches high. Its flowers are in small heads of a lavender colour, and are distinct and pretty. It is in most instances a biennial.

Lythrum Salicaria is one of the prettiest flowers that are natives of this country—a perennial, and naturally found growing near water. It is well worthy of a little extra care to get it in perfection; its long spikes of deep rose-coloured flowers are very effective.

Verhascum Blattaria is sometimes found under cultivation, and is worthy of a place in every collection of herbaceous plants, however select it may be. Whether it is an indigenous plant is disputed. I have found it in a position which is much in favour of that opinion. It should be raised from seed.

Vicia Cracca, a climbing plant about 2 feet to 4 feet high. It has very pretty flowers of a telling shade of purple, and produces them very freely.

Menyanthes trifoliata.—A bog plant, exceedingly delicate when in flower, and well worth cultivating where a suitable place can be found. It seeds very freely, but I have not succeeded in germinating the seed, although its natural habitat was imitated. Doubtless roots would soon establish themselves.

Valeriana officinalis.—This is occasionally found in gardens. It naturally grows in moist positions, but does not appear to be impartial to dry places. It grows about 3 feet high, and has very sweet-scented white flowers.

Anagallis tenella (the Bog Pimpernel).—Very small, but very distinct and pretty. Requires a moist situation.

Eriophorum polystachyum.—Very abundant in some parts of the kingdom, but quite unknown in most places. It is useful for mixing with dry flowers, its silky tasselled seeds giving it the name of Cotton Sedge. It is doubtful if this would thrive unless in a bog either natural or artificial.

Most of the rarer kinds of native Orchids are worthy of careful cultivation. *O. conopsea* is the sweetest-scented British plant I am acquainted with, and is not excelled by many of the cultivated hardy plants. It grows wild in a moist situation. A considerable number of this class, and possibly all except the parasitic ones, may be successfully removed when in flower. This is a great advantage, as they are comparatively insignificant at other times. We have growing here a specimen of the Bee Orchis (*Ophrys apifera*), which was dug up in flower in Germany, and brought home several years since.—W. H. DIVERS, *Ketton Hall*.

curious method of growth is occasionally seen, but is by no means common.

— THE third Exhibition of the HUDDERSFIELD CHRYSANTHEMUM SOCIETY will be held on November 12th and 13th. It is satisfactory to observe from the report that the Society is in a sound financial condition and is supported by a large number of subscribers. Very good prizes are offered in the schedule, the chief of these being £10, £7, and £4 respectively in the open class for forty-eight blooms in not less than thirty-six varieties, and £5, £3, and £2 for twenty-four varieties. A timepiece, value £5, is offered for a group of plants in the local class, and £5, £3, and £2 for twenty-four blooms in not less than eighteen varieties. Prizes are offered for other autumn decorative plants besides Chrysanthemums, also for fruit. Mr. John Bell, Luck Lane, Marsh, Huddersfield is the Hon. Secretary.

— POTATOES IN IRELAND.—Mr. J. H. Tuke has published his report of the distribution in Achill and the West of Ireland of the Seed Potato Fund during the spring of the present year, which amounted to £5205. The total number of families supplied with seed exceeded 6000, representing a population of 30,000 or 40,000 persons, and the most gratifying accounts have been received of the successful growth and prospects of the crops for the various parishes assisted. In this portion of Ireland, says Mr. Tuke, the evils which affect the people can alone be removed, if at all, by economic measures, and not by political changes, however wide their scope.

— THE collection of HOLLYHOCKS AT FOREST HILL, for which Messrs. J. Laing & Co. have long been noted, comprises some excellent named varieties, chiefly seedlings, showy in habit, with large well formed flowers of clear and bright colours. Some of the best of these are the following, which are selected from a hundred or more:—Alexander Kerr, white shaded rose; Alba superba, pure white; J. M. Lindsay, cherry red; Lord Jerviswood, white, suffused with rose; Lord Middleton, rosy peach; Hon. B. Hamilton, pale blush; John Bell, deep rose; Mrs. Laing, rosy lilac; Mrs. Boston, rosy peach; Memnon Improved, light red; Miss Dawson, pink; Nellie Grieve, purple; Purple Prince, dark purple; Rev. D. Paul, yellow, dark base; Rev. Jas. Robinson, pale orange; Tecoma, satiny rose; Primrose Model, primrose; Invincible, rosy salmon.

— THE YORKSHIRE NATURALISTS' UNION FUNGUS FORAY will take place on Thursday, September 30th. On the following day there will be an exhibition of the specimens in the Leeds Museum, kindly lent for the purpose; and in the evening the usual dinner. Several distinguished mycologists have promised to be present, and no effort is being spared on the part of the officials to make it a success.

— THE GUILDFORD CHRYSANTHEMUM SOCIETY will hold their annual exhibition in the Large Hall, Guildford, on Wednesday and Thursday, November 10th and 11th, this year. Prizes, chiefly of moderate amount, are offered in twenty-nine classes for Chrysanthemum plants and blooms, fruit and vegetables. The Secretary is Mr. A. Walker, The Beeches, Guildford.

— W. R. RAILLEM sends the following note on ROSE HER MAJESTY:—"There has been a good deal of mystery about this Rose ever since it first gained the gold medal at Kensington, but we have certainly been given to understand that it is H.P., or at least H.T. I think it was advertised as H.P. May I ask those who have purchased plants of it last spring whether they do not rather think it to be H.C.? It is rumoured so to be, and it certainly looks uncommonly like it. My plant grew quite 4 feet high, with stems as thick as my finger, and thorns of extraordinary stoutness, but showed no sign or promise of bloom. I have headed it back in order to breed from it, but if it be H.C. only I fear that we shall get no blooms from yearling plants. P.S.—If I had known that 'Horace Vernet' himself was going to write on the subject of 'Small Rose Growers,' I would have held my tongue. If I am not mistaken, his modesty (he is catalogued, I think, as a 'sby' bloomer) alone prevented him from making his letter, good as it is, absolutely decisive on the point in question."

— MR. W. EASTWOOD, Muncaster Hall, Rainford, St. Helens writes:—"The VARIEGATED TROPEOLUM AT ABERAMAN PARK that Mr. Smith referred to in the *Journal of Horticulture*, August 12th, 1886, was a sport cut from the green variety grown up the rafters in the greenhouse at Moorfield House, Withington, near Manchester, in 1872. Some half-dozen plants were propagated and grown in 6-inch pots, kept colour in foliage and flower as Mr. Smith states. In 1875 I went as foreman in



A CORRESPONDENT informs us that the DUKE OF BUCCLEUCH GRAPES AT DRUMLANRIG are finer than ever this year, or were a short time ago, for we learn the finest were sent to Holyrood for the Queen, and Her Majesty was astonished by their size and beauty. Perhaps Mr. David Thomson will wonder how this information has reached us; we think, however, it is accurate, and we congratulate him on his continued success.

— WE owe an apology to the Rev. J. A. Williams of Alderminster for not more promptly acknowledging the receipt of the finest truss of PERLE DES JARDINS ROSE that has ever brightened our sanctum. Mr. Williams, who had taken two good blooms from the truss, observes, "This Rose too often opens in a confused state, but I think you will say that not one of the five more or less expanded blooms is 'confused.'" We say that every bloom was smooth, solid, and symmetrical. Mr. Williams describes this Rose as "an exceedingly healthy and vigorous grower, and as a garden Tea Rose hardly to be surpassed." Each flower was borne on a peduncle so stout that the blooms were as upright as if wired or arranged in a first-prize stand at a show.

— MR. CUTHBERT JOHNSON sends us from Daventry an abnormal POTATO PLANT with the crop growing on the stems, the tubers, which are of medium size, proceeding from the axils of the leaves. This

the houses at Aberaman Park, and in the following year (1876) I went on a visit to Manchester and procured cuttings of the above-named *Tropæolum*, which both rooted, and I increased the stock to thirteen or fourteen good strong plants, but it was never bedded out in my time while there to June, 1877, Mr. Morgan then being head gardener."

— GARDENERS IN AUSTRALIA.—"D. J. A." will be glad if any of our readers can inform him what wages an under gardener receives in Australia.

— MR. THOMAS WOOD, as a competitor in the late BOILER CONTEST AT LIVERPOOL, thanks Mr. Bardney for "so lucidly placing the facts thereon before the public." Amongst other points referred to by Mr. Wood in favour of his own boiler, and consequently coming under the category of advertisements, "he thought at one time a competitor was to be one of the judges, seeing the active part he took in taking the temperatures and following the judges in their duties." The letters we have received from exhibitors on this subject will be preserved, and any suggestions in them noted that may be of service in any possible future contests.

— MR. A. CREWS desires us to state that his engagement as manager with Messrs. Viccars, Collyer & Co., Leicester, has terminated, and that he now occupies a similar position in the Chad Valley Nurseries, Edgbaston, Birmingham, that being his present address.

— MR. W. IGGULDEN sends the following note on a fine QUEEN PINE APPLE:—"Mr. J. Lock, gardener to B. W. Cleave, Esq., Crediton, Devon, the well-known plant exhibitor, is also equally as expert in fruit culture. I have seen several remarkably fine Smooth Cayenne Pine Apples that he has grown, but his greatest achievement in that direction is the production of a Queen Pine weighing 7 lbs. 14 ozs., this being only a trifle short of the weight of the grand Queen exhibited by Mr. Sandford of Underley Hall, Westmoreland, at the fruit show held at Manchester some years ago (I forget the date, but well remember the exhibit, which was considered worthy of a gold medal). I hope Mr. Lock, in addition to showing his fine fruit at Exeter on August 25th, will also send or take it, if it will keep, to the Crystal Palace and South Kensington meetings early next month."

— THE BRISTOL CHRYSANTHEMUM SOCIETY'S SHOW will be held in the Drill Hall, Queen's Road, Clifton, Bristol, on November 17th and 18th. We observe from the schedule a silver cup is offered as the first prize for six plants, and the silver medal of the National Chrysanthemum Society is added to the first prize for twenty-four blooms. The schedule embraces sixty-three classes, and the exhibition should be representative of garden produce in season at that period of the year.

— GARDENING APPOINTMENTS.—The following appointments have been made through Messrs. John Laing & Co., Nurseries, Forest Hill, London, E.C.:—Mr. Packman as gardener to C. P. Brachi, Esq., Brook House, Southgate. Mr. Bingham as gardener to L. White, Esq., Engadine, Bromley. Mr. R. Harman as gardener to W. P. Jeffrey, Esq., Llandovery, S. Wales. Mr. J. Heard as gardener to M. J. Freeman, Esq., The Grange, Exmouth. Mr. Young as gardener to A. G. Petty, Esq., Shooter's Hill, Woolwich; and Mr. J. Davis as gardener to E. A. Woolley, Esq., Manor House, Abbots Langley, Herts.

— REFERRING to the derivation of the name HOLLYHOCK, a correspondent remarks that Dr. R. C. Prior has said that "Hock is clearly from the Latin *alcea*, but the Holli is very difficult to explain. Somner's Dictionary gives a pretended Anglo-Saxon *Holihoc*, an improbable word, and one that, if it ever existed, could not have applied to a flower unknown to the Anglo-Saxons. Wedgwood understands it as meaning 'Holy-land-hock,' but a plant unassociated with any legend would scarcely have been called Holy from having been found in Palestine. It is questionable, however, whether it comes to us from that country. In old writers it is distinguished as the *Alcea hortulana*, or Garden-hock, and possibly Holly may be a corruption of the word *hortulana*. Another possible source of it is the Hock-tide, a festival of the Church, with which the name of the plant may have become confused, and from some association of ideas the Holy been thus attached to it. But upon the whole, the most probable origin of it is Latin *caulis*, with the meaning of a caule, cole, or Cabbage-hock, and referring, as in Cabbage-rose, to its well-filled double flowers; or used in the sense of stalk, and referring to its lofty habit. Cauli or Coley-hock would easily pass into Holly and Holy-hock." Some have thought the word is derived from the Welsh "*Holliach*,"

signifying quite well or whole, and, therefore, synonymous with the generic name *Althæa*.

— FOR several years, says *Nature*, attempts have been made in Sweden to extract tannic MATTER from the SWEDISH SPECIES OF PINE, similar in quality, &c., to that of the American Hemlock (*Pinus canadensis*), but without satisfactory results, chiefly on account of the manner in which this is done not being known. Now, however, the question has been solved by a chemist, Dr. Landin, who, having visited North America for this purpose, has, on his return to Sweden, succeeded in producing tannic matter by a chemical process, which has been found equal to the American, though the colour of the Swedish leather produced therewith is more yellow in colour than the American. It is hoped that this discovery will have the effect of causing a great tanning industry to spring up in Sweden.

A SPLENDID RHODODENDRON.

THE Vine at Hampton Court has long been reputed for its magnificence above others of its class. Here and there over the country striking specimens of plants crop up and call for special comment. Well, in "Ye ancient Kingdom o' Fife," and at Balbirnie, the residence of Colonel Balfour of Balbirnie, in the parish of Markinch, a very fine Rhododendron attracts attention. Few places in Fife are more inviting than Balbirnie for floral grandeur. There we can look back, and that pleasantly for a long series of years when Messrs. Thomson, France, Edwards, Temple, were in succession head gardeners there, and now with equal delight on beholding the achievements made by the present head gardener, Mr. Henderson. The gardens at Dysart House, also in Fife, have long been famed for Rhododendrons grown there, but not better than at Balbirnie. We have seen them well managed under Mr. Blair, Mr. Laing (Mr. John Laing of the firm of Messrs. John Laing & Co., Stanstead, London), Mr. Pierce, Mr. Thomson, and Mr. Clarke, and their efforts told effectively, but the plant we now refer to eclipses any we have seen in this part of the country. Rhododendrons at Balbirnie are well managed and grow beautifully. Here Rhododendrons are special favourites. They are well cared for and grow freely and luxuriantly in soil that suits them well. The particular plant under notice eclipses any we have ever seen for size, symmetry, and beauty. It is growing in a shady dell to the north-east of the mansion house, and by a burnside. So large has this plant grown that it has become a particular object in the scenery, and the admiration of all who have seen it. Surrounded by feathery Ferns and white and purple Foxgloves that stand forth amongst underwood beneath tall trees on the neighbouring banks, its situation is very snitable. It must have been planted fully fifty years ago. It is worth going miles to see. It is in perfect health, and this season it was completely covered with flowers. This remarkable specimen measures 39 feet in diameter, and 15 feet 6 inches in height. A photograph of this floral beauty has been taken, and is well worth preserving.—THOMAS NICOL.

OLD AND NEW ROSES.

[A paper by Mr. Joseph H. Bourn, read before the Massachusetts Horticultural Society.]
(Continued from page 160.)

THE Roses of all lands are with us, but changed in their constitution—some weakened, others strengthened by a change of diet, climate, and care. The rosery should be both exposed and sheltered, a place of sunshine and of shade; the centre clear and open, and the protecting screen around. The requisite conditions of a spot selected for Rose culture cannot always be judged by the mere texture, depth, or character of the soil, even in conjunction with climate and situation; for it is more a matter of actual experience than calculation. The Rose trees should be so arranged that the sun will shine upon them from its rise to meridian, and then leave them in shadow and repose. The bards may preferably be planted in the autumn, the tender in the spring. Set plants of one or two years' growth, and prune before planting, for the shortening of the shoots and roots reduces the number of buds which draw upon the sap, and a more vigorous growth follows. Choose a day when the earth is easily worked and friable, for planting. Place the roots 3 to 6 inches under the surface, and set deeper in light and dry than in strong and moist soils. Transplanting should occur once in five or six years, but budded and grafted varieties more frequently become impaired; the wood, annually weaker, does not attain that maturity and size necessary to the production of fine flowers. If we carefully remove a tree in this condition we shall find large, sucker-like roots, almost destitute of fibres, which have been burying themselves in the earth each succeeding year. Removed farther from the reach of nourishment, the bush dwindles and becomes debilitated, which is remedied by replanting in the autumn, cutting off the suckers and pruning the roots.

Roses may be grown to perfection in ordinary garden soil, but they must be cultivated, and the ground thoroughly drained, dug, and fertilised, and rendered as porous as possible. In clay loams the use of sand, lime, soot, burnt earth, and loose, light vegetable matter, like leaves decayed to mould, will alter the texture and improve the quality. At the time of planting strong fertilisers are not required, but when the trees have become established they like rich soil, which should be made light for the delicate rooting kinds, and more tenacious for the robust and hardy; and it would be reasonable that the classes and varieties differing in their nature should

have more than one soil, that each may receive that which is the most suitable. A knowledge of the several ingredients of the earth in which our hed of Roses is planted would afford desirable information, in order that we may apply at the right time the proper kind of fertilisers; and a renewal of the surface soil with old pasture loam every two or three years will supply important elements unattainable by any other method. The upper earth should be kept light and loose, in order to readily admit those constituents which cause growth, and the soil should be filled with such particles of food in the particular form necessary to unite with the air and water, avoiding the application of more fertilisers in a soluble state than the plants can consume. A critical observer and careful grower might say that the earth should be filled with stimulants in different stages of decomposition, that the tree may, in all conditions of growth, have plenty of food; to be applied often, in a weak, liquid form, when the plants are growing, and especially flowering. An application of bone and potash acts favourably when the earth is removed from the hedges in the spring. A frequent sprinkling of water at evening adds health to the foliage, and is a preventive of insect destruction; and it is best to imitate Nature, and wet the earth thoroughly only when dry, withholding water until again needed.

Pruning is the most important and difficult operation to perform with success, on account of the extent of the genus, made up of varieties differing so much from each other in habit and character; and as so much is dependent on circumstance, much must be left to the judgment of the operator. Autumn and spring pruning both have their helps and hindrances. An improved symmetrical form is obtained by disbudbing, or rubbing out some of the eyes when swelling, which method of pruning takes the place of thinning out the weaker branches, whereby the remaining buds produce stronger wood, and consequently there is a healthier and larger surface of foliage. The important results which arise from pruning are, the maintenance of the tree in health and vigour, giving a form agreeable to the eye and advantageous to the development and display of its blossoms, and securing an abundance of fine flowers. The most desirable and pleasing form for trimming is that of a pyramid, or half oval, where all of the shoots and branches receive a due portion of air and sunlight; and we should never forget to look to the name, to know the habit and character of the variety to be pruned, to ascertain if it is a strong or weakly grower, and whether or not the finest flowers are produced indiscriminately from the low, middle, or top germs.

There is no royal road to the elegant garden of Roses. Although a more generally diffused taste for the cultivation of this charming race of plants is manifest, few have a sufficient knowledge of their habits to know how to grow them intelligently. Besides, we must see these choicest gifts of Nature to be acquainted with their excellences. In most of our gardens there are no special attractions to the rosarian, but a happy, peaceful home to the entomologist. Yet there are pleasing spots which receive studious attention, where Nature seems to have expended all her wealth in rendering the earth blossomy beautiful with the simple loveliness of the Roses; most elegant at sunrise, when newly dilated by the breath of morn, and showing all that freshness in which consist peculiar charms, too soon vanishing before the radiance of a summer's sun. In their purity and splendour these souvenirs of love and friendship blush and gleam amid their glossy leaves.

I am often asked what varieties are to be most commended for garden culture. All of the several types have some peculiar and distinct characteristic which is valuable. I should therefore elect from the different families according to the number desired, regard being had to variety of shades, hardiness, and freedom of bloom, giving preference to those whose petals are abundant and regularly and gracefully disposed, and, usually, the thicker these are the richer the tints and the longer the flowers endure. Dark Roses, as a rule, are the first to fade; but Louis Van Houtte, Marie Baumann, and Alfred Colomb rank high for permanency of colour. The rose shades that are the most durable are illustrated in Marquise de Castellane, Rev. J. B. M. Camm, Marguerite de St. Amand, and Jules Margottin; and from the pink choose Eugénie Verdier, Baroness Rothschild, and Comtesse de Serenye. Jean Liabaud, Baron de Bonstetten, John Hopper, La Rosière, Madame Gabriel Luizet, Paul Neyron, Marchioness of Exeter, Thomas Mills, Anna de Diesbach, E. Y. Teas, Maurice Bernardin, Madame Hippolyte Jamain, Charles Darwin, Abel Carrière, Madame Victor Verdier, and Monsieur Boncenne are grand garden Roses; while Marie Verdier, Lady Sheffield, Duchess of Beauford, Madame Scipion Cochet, Alfred K. Williams, Duke of Teck, Pride of Waltham, Mrs. Jowitt, Harrison Weir, Merveille de Lyon, Ulrich Brunner, Earl of Beaconsfield, Helen Paul, and Countess of Rosebery are less known, but quite fine and estimable. Some of you are familiar with many of the new Roses—Antoine Mermet, Alexandre Dupont, Joseph Metral, Louise Cretien, Madame Delavaux, Souvenir Leon Gambetta, Violette Bouyer, Centenario de Camors, Fanny Giron, Marie Lagrange, and Ernest Prime. A few of the new French Remontants of 1884, which will soon be presented for your approbation are from Pernet, the Baronne Nathaniel de Rothschild, a large globular, delicate rose colour; from Levet, the Madame D. Wettstein, cherry red; from Gonod, the Etendard de Lyon, a large, fine shape, purplish crimson; also the Souvenir de Labruyère, vivid rose, centre darker; from Dubreuil, the Admiral Brisbet, a fine-scented, pinkish crimson; and from Liabaud, Docteur Dor, large, Tea-scented, dark cherry red, shaded darker; Madame Pitaval, light cherry red; Madame Stinouge, purplish red, and Monsieur Hoste, velvety crimson. From Guillot, the Gloire Lyonnaise, fine form, free and scented, creamy white, with yellow centre. Every season brings out novelties, but few real gems, mostly imitations of familiar acquaintance; and we must not expect to meet with the

improvement of former years, but must rest satisfied with the more gradual development usual among plants that have been long in cultivation.

(To be continued.)

ROYAL HORTICULTURAL SOCIETY.

THE two Exhibitions of cottagers' garden produce occupied the greater portion of the conservatory at South Kensington on Tuesday last, and very rarely is such an excellent display of vegetables seen at shows of this description. This especially applies to the cottagers' and artisans' show in connection with the Royal Horticultural Society, which was one of the most successful that has been held both in number of entries and quality of exhibits. The hardy flowers from Mr. T. S. Ware and Messrs. Paul & Son, the Gladioli from Messrs. Kelway & Son, the Roses from Messrs. W. Paul and Son, with the Hollyhocks from Mr. Blundell and Messrs. Webb & Brand, constituted the chief portion of the floral attraction, and rendered the conservatory very gay.

FRUIT COMMITTEE.—Present: T. Francis Rivers, Esq., in the chair, and Messrs. Harrison Weir, Philip Crowley, F. Rutland, J. Burnett, W. Warren, Wm. Paul, J. Ellam, and G. Bunyard.

The exhibits before this Committee were few, the most important being a collection of early Apples from Messrs. W. Paul & Son, Waltham Cross, for which a vote of thanks was awarded. They comprised fine fruits of Ecklinville Seedling, Stirling Castle, Yorkshire Beauty, Devonshire Quarrenden, Manks Codlin, Early Julian, New Hawthornden, Keswick Codlin, Small's Admirable, and Duchess of Oldenburg. Mr. Tayler, gardener to Sir John Lubbock, High Elms, Down, sent a good fruit of Melou Blenheim Orange; Mr. J. Blundell, Dulwich, showed a dish of Plums; Mr. R. Gilbert, Burghley, showed samples of a new selection called the Jubilee Sprouts; Mr. C. Noble had a dish of Red Astrachan Apples; Messrs. Grimsdick & Son, Hayward's Heath, exhibited a Melon named Grimsdick's Perfection, which was found to be over-ripe; and Mr. Griffin, Coombe Bank Gardens, Kingston-on-Thames, sent two seedling Melons, one of which was also found to be over-ripe.

FLORAL COMMITTEE.—Present: G. F. Wilson, Esq., F.R.S., in the chair, and Messrs. W. Bealby, T. Baines, H. Herbst, Amos Perry, H. Bennett, C. Noble, A. F. Lendy, G. Duffield, J. Dominy, H. M. Pollett, James O'Brien, E. Hill, Harry Turner, James Walker, and Dr. M. T. Masters. Messrs. J. Veitch & Sons, Chelsea, exhibited a collection of hybrid spotted Gladioli of the G. Lemoinei type, including several very pretty new varieties; one named Voltaire was certificated, and others of nearly equal merit were La Fayette, salmon red; M. Ch. Henry, scarlet; Mars, crimson; and Sceptre d'Or, pale yellow and red. Messrs. Cannell & Sons, Swanley, had stands of exceedingly fine double and single Tuberous Begonias, very large, of good shape, and bright varied colours. A selection of choice single Pompon and other Dahlias was also shown, and a bouquet of Salpiglossis of many tints. Mr. J. Blundell, Dulwich, had a stand of Hollyhock flowers, comprising some useful decorative varieties, as well as some named forms up to the florists' standard, the best of the latter being Mary Anderson, pale yellow; W. G. Head, dark red, with fine guard petals; Princess Victoria of Wales, pale salmon; and Miss Roupell, rosy salmon. Messrs. Webb & Brand, Saffron Walden, had a collection of fifty Hollyhock blooms, besides eight fine stems at the back. Very handsome was a pure white variety named Alba Superba, Vivian, dark red; Grace, rosy salmon; Octavius, rose; and Golden Drop, yellow. Mr. R. Dean, Ealing, showed some fine Mammoth African Marigolds, very large, bright lemon and orange colour (vote of thanks) also Chrysanthemum hybridum Sunbeam, a fine clear yellow, cross between coronarium and segetum, and it is said not to produce seeds. Mr. W. Bull, Chelsea, sent flowers of the neat and prettily marked Aristolochia elegans and the bright Impatiens Hawkeri, which have been previously noted. Mr. C. Turner, Slough, showed stands of forty-eight Dahlia blooms, large handsome examples of the best show and fancy varieties; a novelty named Bendigo, of a rich crimson self, being noteworthy for its excellent form.

G. Hardy, Esq., Timperley, Cheshire, was awarded a vote of thanks for flowers of *Cattleya gigas* Hardyana, remarkable for the intensely rich crimson colour of the lip. Similar recognitions were accorded to the New Plant and Bulb Company, Colchester, for a variety of *Cattleya superba* from Colombia with a raceme of four large crimson flowers, and samples of *Impatiens Jerdonia* and *I. concolor*; to H. J. Buchan, Esq., Wilton House, Southampton, for *Maxillaria setigera* with long narrow yellow-and-white sepals and petals; to Mr. C. Kershaw, Brighouse, for *Adiantum cuneatum* elegans, a dwarf compact useful variety; and to Mr. Eckford, Boreatton Park Gardens, Shrewsbury, for a charming collection of Sweet Peas and Pansies. A cultural commendation was adjudged to Mr. W. King, gardener to P. Crowley, Esq., Waddon House, Croydon, for *Chrysanthemum* Madame Desgranges with remarkably large pure white blooms. Mr. W. Roupell showed blooms of single white Dahlias, and Mr. T. Smallman, Kenilworth Road, Leamington, sent a double white Primula and seedling Coleuses of no special merit.

Of the groups and collections of flowers the most imposing was that from Messrs. Kelway & Son, Langport, Somerset, which comprised 250 spikes of Gladioli, representing some scores of new and recent varieties, four being selected for certificates. In addition to these, boxes of Antirrhinums, Phloxes, Gaillardias, and Pyrethrums were contributed, the silver-gilt medal awarded being amply deserved. Mr. T. S. Ware, Tottenham, had his usual handsome collection of hardy flowers, and it is astonishing that such a bright yet varied display could be maintained for such a long period. It convincingly proves the resources of a well-stocked garden of hardy flowers, and that those who complain of beds and borders devoted to such plants being dull have not a sufficiently large or well chosen selection. *Lilium superbum*, *tigrinum*, and *speciosum* were especially good, with the brilliant *Tritoma Uvaria*, single and Pompon Dahlias, tastefully arranged with Asparagus shoots, Lythrums, Phloxes, Gaillardias, and innumerable other flowers, a silver medal being awarded for the collection. Messrs. Paul & Son, Chesham, also had a magnificent collection of hardy flowers and ornamental shrubs, for which a medal of equal value was adjudged; and the same honours were accorded to Messrs. Wm. Paul & Son, Waltham Cross, for twelve boxes of Rose blooms, wonderfully fresh and bright for the time of year; to the New

Plant and Bulb Company, Colchester, for a group of *Lilium auratum*, *Gladiolus Lemoinei*, and Ferns tastefully arranged; and to Messrs. J. Carter and Co., High Holborn, for an admirable group of Asters in pots, representing some very fine strains of the Dwarf Bouquet, French Paeony, Pyramidal German, and Chrysanthemum-flowered types.

CERTIFICATED PLANTS.

Dahlia Eccentric (C. Turner).—A Pompon variety of neat form, strangely differing in colour from orange scarlet to creamy white; very distinct and curious.

Dahlia Yellow Constance (T. S. Ware).—A decorative variety of the Mrs. Hawkins type; true pure bright yellow.

Dahlia Amos Perry (T. S. Ware).—A single variety in the way of Paragon, beautifully formed; deep maroon, with a scarlet margin to the florets.

Dahlia Miss Limaker (T. S. Ware).—A single variety, bright rosy crimson, with a lighter margin to the florets.

Dahlia Mr. Rose (H. Cannell & Sons).—An extremely beautiful single variety with excellently formed blooms, white, streaked with crimson.

Gladiolus Lady Macfarren (Kelway).—A handsome flower, white, tinged with purple at the base. A fine massive spike.

Gladiolus Lord Ashbourne (Kelway).—Bright scarlet streaked with a darker shade. Very effective.

Gladiolus Empress of India (Kelway).—A charming variety, light purple with a few darker streaks. The flowers of great size and the spike massive.

Gladiolus Lady Salisbury (Kelway).—A delicately pretty variety, creamy white with dark streaks of rosy crimson.

Gladiolus Prince Edward of Saxe Weimar (Kelway).—Very distinct, large bold scarlet flowers in a dense spike, scarlet with deeper streaks and a purple centre.

Gladiolus Voltaire (J. Veitch & Sons).—One of the Lemoinei group, with rosy crimson flowers and a light central bar in each of the lower petals.

THE COTTAGERS' SHOWS.

Some reference has been made to the two Shows of cottagers' produce, and it is only necessary to add a few words in regard to the general character of the displays. That which formed a portion of the Royal Horticultural Society's series for the present year was much the more extensive of the two, the vegetables being of far better quality, and the competition surprisingly keen in most of the twenty-two classes provided. For instance, there were forty-three exhibitors in the class for one dish of Potatoes, thirty-five with Scarlet Runner Beans, the same number in the class for Carrots, which were mostly of great merit, thirty with Vegetable Marrows, twenty-four with Beet, twenty-six with Turnips, twenty-one with Onions, the same number with a dish of Peas, twenty-four with three varieties of Potatoes, eighteen with three Cabbages, and many other classes were nearly as well filled, especially in the small fruit section, Cherries being shown by twelve exhibitors, Currants by fourteen, and Gooseberries by twenty.

Some of the most successful competitors were the following—H. Gibbs, Church Green, Sevenoaks; J. Wellard, View Cottage, Eynsford; G. Kirtland, Bletchington, Oxon; J. Vennell, Manor Cottage, Maidstone; F. Hall, St. Lawrence, Ramsgate; G. Beckett, Amersham; R. Neal, Aston Clinton, Bucks; R. Timbs, Amersham; G. W. Kentish, Kempstead, Herts; R. Hall, Dartford; S. Richardson, Chase Green Avenue, Enfield; G. North, Buckingham; J. Venn, East Acton; H. Bruce, Tring; G. Castle, Nettlestead, Maidstone; and W. Jacobs, Petworth.

The Show altogether was highly satisfactory, and a large proportion of the vegetables would not have disgraced any gentleman's gardener.

The other Show was that in which the Agricultural and Horticultural Association (Limited) provided the prizes, the managing director being Mr. E. O. Greening. This was termed a "National Co-Operative Flower Show," and prizes varying from 42s. to 2s. 6d. were offered for vegetables and flowers. In some of the classes there were ten or twelve competitors, but in many others there were from two to six entries, and there was a roughness about some of the produce that was not satisfactory. The bouquets and cut flowers were, with a few exceptions, far from being as good as are generally seen at the leading cottagers' shows. Amongst the vegetables, however, there were specimens of considerable merit. In the afternoon a paper was read by Mr. E. O. Greening entitled "How Can our Co-Operative Organisation be best utilised to Promote a Love of Horticulture amongst our Working People?"

SUMMER AND AUTUMN EXHIBITIONS.

In the following list are given the dates of the principal shows to be held up to the end of October this year, and we shall be obliged if the Secretaries of Societies holding shows during the season named will forward us their schedules.

AUGUST.

27th, Friday.—Sandy (Beds).

27th, Friday.—Hinckley.

SEPTEMBER.

1st, Wednesday.—Bath.

1st, Wednesday.—Oxford.

3rd, Friday.—Crystal Palace, Fruit and Dablias.

7th, Tuesday.—Royal Horticultural Society, Committees; Fruit and Dahlia Show.

8th, Wednesday.—Edinburgh.

9th, Thursday.—National Chrysanthemum Society, Early Chrysanthemums, Westminster Aquarium.

21st, Tuesday.—Royal Horticultural Society, Committees.

OCTOBER.

6th, Wednesday.—Crystal Palace, Fruit Show.

12th, Tuesday.—Royal Horticultural Society, Committees and Hardy Fruits.

13th, Wednesday.—National Chrysanthemum Society, Floral Committee.

26th, Tuesday.—Royal Horticultural Society, Committees, and Chrysanthemum Show.



KITCHEN GARDEN.

AUTUMN ONIONS.—The autumn Onion crop is a very important one as in the spring and early summer, when all spring-sown Onions are over, these keep up a supply, and for both kitchen use and exhibition purposes they are most useful. We have still a few of those sown last August in the ground, but most of them have been lifted and used, and some of them have been exhibited successfully. It is now, however, past their season, and the sooner they are all drawn and used the better. Any which are perfectly firm may be kept for a time, but they will not keep long. Now is an excellent time to sow again for next year's supply. The Giant Rocca or some of the Tripoli varieties are the best. The white ones always bulb soonest in the spring, and a quantity of them should always be sown. Last year we sowed our autumn Onions on August 26th, and we did not lose a score of them through bolting in spring. When sown too early they are very liable to do this.

The soil in which they are to be sown should have a good dressing of lime or soot dug into it, then fork a quantity of manure into the surface, and there is no danger of failure from any cause. We always make the seed ground good, and then the bulbs which are allowed to mature in it become very large. The seed may be sown broadcast or in rows. We prefer the latter, and never put the seed more than 2 inches below the surface. The drill should be opened about 1 foot apart, and the seed sown moderately thick, as when a good quantity of young plants appear some of them may be drawn for use as salad in winter, and quantities should always be transplanted before they gain any great size in spring. Last autumn we opened the drills for some of our Onions 3 inches deep, strewed a quantity of artificial manure at the bottom of the drill, put some soil over this, then sowed the seed, and we have gathered bulbs lately from these rows weighing 20 ozs. They are finer than any we treated very liberally with manure and liquid in the spring and early summer, and we approve of placing plenty of manure close to them before sowing the seed.

CABBAGE.—Plants from the first-sown seed are now almost ready for placing out. If put into good soil and a favorable situation they will produce delicate heads about the new year should the weather prove mild until then, and in any case they will be ready for use very early in spring. Give them firm moderately rich soil, and plant about 18 inches apart. Those early-sown plants, however, are too early to keep over the winter for planting next spring, and where plants are wanted for this purpose a quantity of seed should be sown now. It may be sown broadcast in a small bed in a situation where they will not be drawn or pampered in any way.

WINTER RADISHES.—These are very acceptable, and a quantity of them should be grown in both large and small gardens. The China Rose is the best of all for winter. It is very hardy as well as tender and crisp during the whole of the winter. Much top growth is not an advantage, and to avoid this the seed should be sown in rather poor soil. It may be sown broadcast or in rows, and very thinly, as when sown thick the foliage soon becomes crowded, then the roots do not form. We always keep our winter Radishes in an open situation, and they never fail to do well. We have tried several of the summer sorts for winter use, but found them all too tender, and we only grow one variety now.

SOWING CAULIFLOWER.—The earliest spring Cauliflower heads are always cut from plants raised from seed sown at the present time, and wherever spring Cauliflowers are desired a quantity of seed of Early London should be sown at once. It may be put in alongside of the Cabbage seed, and the plants may be allowed to grow in the open until about the beginning of October, when they must be lifted and planted in frames under handlights, or in any place where they will be sheltered from very severe weather.

RIPE SEED.—Peas, Broad Beans, and some other vegetables which were left to ripen their surplus pods have now matured the seeds. All of these should be gathered as soon as possible, and if they can be taken in when it is quite dry or after a few dry days, it will save much labour in drying the seed. It also keeps better when taken in dry, and we should never attempt to do anything to it when wet. If left out, however, after it is quite ripe, and wet weather sets in, it will soon absorb the moisture, and much of the seed that is perfectly sound now will soon be attacked by mildew or decay. We generally pull up the straw and allow the pods to remain on it under cover until a wet day, when the pods are gathered by the garden women.

RED CABBAGE.—A few of these are acceptable in all gardens, but they do not form any great heads if the seed is sown in spring, and to have them really fine the seed should be sown in the autumn, the plants allowed to remain in the seed bed all winter and planted out in March or April. Now is the best time to sow, and will succeed if put in with the Cabbage seed spoken of above.

MUSHROOMS.—We are now getting abundance from the fields, but in

a month or two there will be none, and as a supply of them is very desirable throughout the late autumn, or indeed the whole winter, attention should now be given to produce them. Nothing can be done, however, until the materials with which to form the bed have been collected; and sufficient should be got together during the next fortnight to make one good bed at least. Horse droppings should form half or more of this material, and they must be spread out and dried before any attempt is made to form the bed. It is not beneficial to dry them too much, but they must never be used in very wet condition.

FRUIT FORCING.

FIGS.—Trees Unsatisfactory.—Fig trees planted out in houses not unfrequently grow rampantly, and consequently produce thin crops of fruit. In that case, root-pruning should be resorted to, and the roots confined to a narrow border of from 3 to 4 feet in width. A trench taken out at this distance from the stem after the fruit is gathered will check the tendency to a late growth, assist in the ripening of the wood, more particularly if the growths are disposed thinly, and the points of the shoots, instead of being very closely tied in, are allowed to grow up to the glass. If the drainage be defective, it will be necessary to lift the trees in the autumn as soon as the leaves commence falling, and replant in fresh soil. Place 9 to 12 inches of drainage of rather rough lime rubble, using the finer parts at top and for mixing with the compost in the proportion of a sixth to turfy loam, and a twentieth part of crushed bones, and in replanting ram the compost, thoroughly incorporated, well about the roots, for short-jointed cannot so well be secured by any other means than a solidified compost. The border should be 30 inches deep. Should the drainage be good it will only be necessary to confine the roots to the narrow border, removing some of the old soil from amongst the roots, replacing and top-dressing with the compost above stated.

Earliest Fig House.—In the earliest house the trees will now be ripening their wood, and watering may be discontinued, air being given very liberally. If, however, the second crop is not yet ripened, moderate moisture in the soil will be necessary, with a rather free circulation of warm air to insure high quality in the fruit. When the fruit is off take prompt measures to destroy insects. The early trees in pots we prefer to place outside if the wood be ripe, but if there is any doubt about this the trees must be continued under glass with a free circulation of air. These are matters on which the cultivator will need to exercise his judgment. In either case encourage surface roots by a dressing of manure, rough loam, and crushed bones. See that those in pots placed outdoors do not root from the base of the pots. Cut off all such roots, top-dress, after which afford a good watering, and they will need no more than to keep the foliage fresh.

Late Houses.—The value of the fruit of trees in cool houses so as to ripen in late August and September is considerable. The great point is to keep the growths thin, and the roots restricted so as to insure a thoroughly solidified, short-jointed, well-ripened wood. If the wood does not ripen kindly treat them as advised for "unsatisfactory trees" when the fruit is gathered, and lift when the foliage gives indications of falling. Keep up a free circulation of air, expose the fruit as much as possible to the sun; but if spider be troublesome syringe on a fine morning after a closely picking of the fruit, and afford no more water at the roots than sufficient to keep the foliage in health.

PINES.—Potting Rooted Suckers.—Suckers obtained from the summer-fruited plants will soon be ready to repot. It is well to divide the plants into two hatches; one, the strongest, should be shifted into their fruiting pots as soon as ready, employing 10 or 11-inch pots according to kind, affording them a position near the glass in a light airy house, keeping them gently growing through the winter. The plants so treated will be readily excited into fruit next May or June, and will afford a good successional supply of ripe fruit in late summer or early autumn. The other plants, suckers from the summer fruiters, not large enough to shift into fruiting pots, winter best in 7 or 8-inch pots, transferring them to larger ones as soon as ready in spring, which with suckers of Smooth-leaved Cayenne that were started last March will supply a successional supply of Pines through the winter months.

Re-arranging Pine Plants.—A re-arrangement of the plants should now be made in order to separate the fruiting from the non-fruited plants, as many of those that were started from suckers of last summer's fruits will have fruit swelling. Those plants not fruiting will have completed their growth, and should have air very liberally for the next six weeks when the temperature exceeds 80°, maintaining the bottom heat steady at 80°, and all plants well established—i.e., well rooted, should have a bottom heat of 80° to 85°; but recently potted suckers, or those not having roots well established in the fresh compost, should have a bottom heat of 90° maintained.

Fruiting Plants.—Those swelling off their fruit should have moderate atmospheric moisture, admitting a little air at the top of the house early in the morning, so as to allow of any superfluous moisture escaping before the sun's rays act powerfully or directly upon the fruit. Any fruit it is desired to retard should be moved to a rather cool or shady house, affording an abundance of air.

MELONS.—In pits and frames the last batch of plants will have set or be setting. Ours are set and swelling freely. In order to insure a good set the growths require to be kept rather thin, the atmosphere dry and warm by the aid of linings, so as to insure steady progress, and the free admission of air. Those in hot-water heated pits will be the better of a gentle warmth in the pipes on cold nights and dull wet days, a gentle heat affording facilities for ventilation, which should be given, if only a little, so as to insure evaporation, and the consequent elaboration and

assimilation of the sap, on which depends in a great measure the quality or otherwise of the fruit. The plants may be sprinkled, avoiding the collar or stems, early in the afternoon, and closing before or by the temperature has receded to 80° or 85°, and so as to raise the temperature to 90° or 95°. Admit a little air at 75°, or increase it from that with the advanced sun heat to 85° or 90°, at which keep it through the day from sun heat. Those in frames should be attended to as required with linings of sweetened fermenting materials as the nights become cold, so as to prevent the temperature falling below 65° in the morning, and if mats are placed over the lights after the sun leaves the frames, and removed shortly after the sun has risen, very much greater success will be had with late Melons than usually results from frames.

Melons in Houses.—Maintain a night temperature of 65° to 70°, and 75° artificially by day. As the days are shorter lessened supplies of water will be required, yet give sufficient to keep the soil in a moist state whilst the fruit is swelling, but after it is full-sized or ceases swelling afford no more water than to prevent the foliage flagging. Keep the laterals well stopped to one leaf or joint, and rub off all superfluous shoots as they show, allowing nothing to interfere with the principal leaves or to retard the swelling of the fruit. Plants with fruit advanced for ripening should be kept dry at the roots and have air very liberally with, if practicable, an advance of temperature, avoiding a close moist atmosphere, which invariably results in the fruit cracking or being of inferior flavour.

Latest Plants.—The hatch of these will have been planted in houses and growing freely. The leader must not be pinched until it reaches the trellis, when it may have its point taken out if more than one leader is wanted, or may be allowed to grow two-thirds of the distance up the trellis if only one leader is wanted, and then be stopped, removing every alternate lateral directly they can be handled. Maintain a moist atmosphere, a temperature of 70° to 75° by artificial means, falling 5° on cold nights, and keep the bottom heat steady at 80° to 85°. Keep a sharp look out for canker at the collar and upon the stem, rubbing quicklime well into the parts affected, striving to maintain a clean growth and healthy collars to the last.

PLANT HOUSES.

Amasonia punicea—This is unquestionably a very beautiful plant, and will become popular for stove decoration when well known. It is most striking amongst other plants with its rich vermilion-crimson bracts 1 foot or more in length. From the base of the bracts are produced creamy white pendulous tubular flowers, which afford a marked contrast to the richly coloured bracts. All who have not yet flowered this plant may allow the strongest of their stock to do so, while the other plants may be utilised for propagation, so that a brilliant display can be made another year. Cuttings of young wood strike freely if inserted singly in small pots in sandy soil, and kept close and shaded until rooted. This plant being of upright growth will be most effective for decoration in 5-inch pots if grown with one shoot only without being stopped. It must be grown exposed to a fair amount of light to ripen and solidify the wood as made.

Medinilla magnifica.—If this plant has made good growth and fully developed the whole of its foliage, it should be removed from the shady house in which it has been growing. Light and air are necessary to ripen the wood that has been made if this plant is to flower freely next May and June. If allowed to remain in a close, shaded, moist atmosphere it will soon commence to make fresh growth, which it will be impossible to thoroughly ripen before winter. Further growth can be prevented by exposure to light and a lower temperature. Thrips must be watched for; if once established on the foliage they quickly destroy its beautiful appearance.

Stephanotis floribunda.—Plants that were started early into growth will have ceased growing, and attention must be devoted to the thorough ripening of their wood. This can be accomplished by exposure to the sun with a good circulation of air daily. The temperature should also be kept lower than has been the case up to the present time, and the atmosphere drier. Supply water liberally at the roots, and syringe the foliage occasionally to keep insects in check. Plants still growing should be exposed to full light, for if grown in the shade they seldom flower satisfactorily.

Gardenias.—Young stock for spring flowering may be transferred into larger pots if those in which they are growing are full of roots. Grow these plants in a close moist house fully exposed to the sun, which will induce the formation of sturdy firm growth. Where these plants are grown from cuttings annually root some at once and winter them in 3-inch pots for a good start early in the year. By propagating now a whole season can be devoted to the young plants, and before the following autumn bushy compact specimens 2 feet or more through can be produced. It is impossible to accomplish this if cuttings are not rooted until the spring.

Ixoras.—Where a quantity of these plants is arranged for decoration in 4 to 6-inch pots cuttings should now be rooted. Insert these singly in 2-inch pots and place them in the propagating frame. When the small pots are full of roots place the plants into others 2 inches larger, in which they will do very well until the spring. Some can be allowed to flower in this size, while others early in the year should be cut back, and when they have started into growth can be placed into larger pots. This treatment will produce from three to six shoots to each plant, and if grown fully exposed to the sun as many trusses of flowers, the plants not exceeding 1 foot in height.

Tydas.—Those of the Madame Heine section will be bushy little plants in 3-inch pots; these may be transferred into 5-inch pots without further delay. They should be grown in a house or pit close to the glass, where they can be shaded from the sun. Care must be taken that they

are not syringed or watered over the foliage. The same remarks apply to Gesneras that are still in small pots. These plants thrive best when their pots are standing upon a moist base, such as that afforded by gravel, ashes, or cocoa-nut fibre refuse.

THE BEE-KEEPER.

PREPARATIONS FOR WINTER.

THE time has again arrived when those who desire to enlist themselves in the grand army of bee-keepers may do so most profitably and safely. The means of obtaining a good stock of bees at a small cost have before been pointed out, but many questions are continually asked upon this point, and therefore no further apology will be needed for again discussing a question of such great and far-reaching importance. Some have in the proper season obtained swarms, and these will in many cases prove good and profitable stocks in the coming year; but great attention must be paid to them, and pains be taken to ascertain the probable amount of food contained in the hive, to ascertain the presence of a queen and the strength of the stock, and if any defect in these three requisites is found, means must at once be taken to rectify the mischief.

It is well known that at this time of the year—the months of August and September—many bee-keepers who fail to advance with the times, and prefer their old-fashioned inhumanity to the (so-called) new-fangled sentimentalism, “put down” their stocks. In some cases this is done on account of an obstinate determination not to change old ways and old customs; in others simply because, knowing no better means of obtaining the honey than by destroying the bees, they are obliged by the supposed exigencies of their position to resort to the method practised by them and their forefathers for countless generations. Others, again, have seen bees driven, but fear to do the work for themselves; but whatever the cause may be, the effect is that in most neighbourhoods bees may still be obtained by those who will “drive” them—or, let me add, in deference to a method to which there seems no objection, “bump” them. There are some men who after once seeing bees driven at a show or in private will not fear to take a hive for themselves and perform the operation with success; while others who have also witnessed the same manipulation are no more able to perform it without assistance than they are competent to find a queen at the first attempt. The “sting” is, I believe, at the bottom of a great deal of this inaptitude, although it is recognised that there is a natural inaptitude in one man and a corresponding aptitude in his neighbour for some particular trade, profession, or industry. A man who is much affected by stings is naturally timid, while a man who can hardly experience any pain on being stung a score of times hardly appreciates the feeling of him who “swells” at each insertion of the poison. Only a week ago a child in an apiary not far from this locality was with his father amongst the bees and got severely stung without a sign of pain, and at last, to add insult to injury, one bee alighted on the end of his nose, when the little lad—only five years old—in brushing it off pushed it up his nostril, when the irritated bee immediately used its sting, but without any apparent effect except a very momentary pain. That lad will surely be a bee-keeper; the sting has no fear for him, and he goes when his father is away from home and stirs the bees up with a stick for amusement! But there is no necessity for any man who suffers from stings to be stung more than very occasionally. He must meet the insects clad in proper armour, and avoid by every means in his power irritating a single bee. Either the brave or the timid man is able then to drive a stock of bees, the one without any assistance beyond a puff of smoke, the other by the aid of veil, gloves, and smoker, carbolic acid being used when this quieter is preferred.

All that a man who in September wants to begin bee-

keeping has to do is to drive as many stocks as together will give 12 lbs. weight of bees; put them all in a large hive together, without troubling to find or choose the queen; feed them with 30 lbs. of best lump sugar made into syrup by the addition of an equal weight of water, and boil for a minute; cover them up warmly, and the stock is ready to pass the winter, to give early swarms or supers, if the weather is favourable and no untoward accident befalls the stock. The cost of such a stock, not reckoning the hive—where the bees are had for the trouble of driving them—does not exceed 10s. 6d., and its value in spring will be at least treble the outlay of the preceding autumn. These are facts, not theories, proved by long years of experience and given to the world as valuable suggestions by the late A. Pettigrew, who himself favoured the method here again suggested to those who have hitherto not attempted to practise it.

Those who already possess stocks must, unless the bees are taken to the moors, at once begin to prepare for winter; each stock must be fed up to a sufficient weight, and if need be strengthened by an addition of driven bees, in accordance with the instructions given in these columns, and then when every attention has been paid to these salient points the less the bees are disturbed until March next the better it will be for the stocks. If it is desired to ruin a stock late feeding and continued manipulation in the late autumn will soon do its deadly work; but if strong, prosperous colonies are desired they can be had with as little trouble and not much more expense than starveling stocks which, dragging on a weary existence through the winter, are a discredit to any bee-keeper, and a sign of lamentable slothfulness and neglect. Bees must be kept strong, and the fact can never be too often impressed upon bee-keepers in general and some in particular that one strong stock is of more value than three weak ones, and with less time expended on it in the way of manipulation will give greater results than the three weak ones put together. True, in exceptional cases a weak stock does in spring make a rapid advance, but this is only by way of exception owing to a young and vigorous queen; but even this rapid progress is not in the same ratio as that which a strong stock, headed by an equally good queen, would make under the same circumstances.

This subject has now occupied so much space that it must be left, and other matters discussed which are of great importance at this season, and must engage our attention now that the necessity for strong colonies, well supplied with food and having a fertile queen, has been brought prominently before those bee-keepers who are readers of this Journal. There is time now to make a fresh start and to remedy prior neglect, and may each one who has not in past years gained as much enjoyment and profit from the care of his bees as he expected try to lay a sure foundation upon which to build up a future harvest; and may each one who will this year for the first time possess a stock be enabled to have it—by using due care now before it is too late—strong and prosperous in spring and ready to reward his energy by a splendid harvest of lovely nectar gathered from the various flowers and blossoms that so gaily bedeck the land inviting the bees to enter, and while imbibing the honey carry the pollen grains from plant to plant, and thus ensure a crop of seed. The month is creeping on; no time must now be lost.

—FELIX.

TAKING BEES TO THE HEATHER.

As has been the custom for generations, and long practised by myself, I have had my bees successfully removed to the Heather, a distance of fifty miles from home. A few days before doing so I dismantled my hives and dressed them in the garb they were to retain at the moors. This little precaution saves many hives and thousands of bees, for immediately they are let loose they have no difficulty in recognising their own hive. How different it is when this precaution is not taken. The necessity for it was well illustrated with a Carniolian hive. Several days before removing them I stripped them of their outside cases, and temporarily covered them with their Heather coverings.

The bees of every hive were more or less bewildered, the Carniolians very much so on their return from the fields. The outside case of one of the last named I removed 12 feet, where two hives intervened; both bees and drones of that hive flew in great numbers to the case, and a considerable time elapsed before they entered their hive. The Carniolians are peculiar in that respect, and care should be exercised never to alter their site, aspect, nor surrounding appearances, especially during chilly weather. The Carniolians are shy to enter a strange hive, tenanted or untenanted, but not so with the Cyprian or Syrian races. These bees will not suffer those of other varieties to enter their hive, but will, without ceremony when occasion fits, enter other hives and join in their labours with little or no concern as if it were their own hive, and very often meet with no molestation from those they would have killed had they attempted to enter their hive.

There is a great difference in the nature of the different races of bees, both in their temper and in the mode of carrying on the internal economy of their hive. I was especially and forcibly struck with this in the case of some Syrians this year. It is well known that I am not favourable to placing empty supers between the stock hive and a partly filled super. With most bees it is a mistake, but with the Syrians it is a decided failure, so much so that I will not try it again with them nor any others. I did it this year simply to show other bee-keepers that more weight would be made by hives having the empty supers placed above, but I did not expect that storing would cease altogether as it did with those I experimented on. There are other peculiarities about these bees which I may explain again, but may say the hive best adapted for them is the Stewarton.

Bees as a rule all round here have not given much surplus honey. If we could only depend on having six weeks' fine weather during the year—three weeks in June and July, and three weeks in August and September, the flora of Great Britain is sufficient to yield honey, which would be profitable to bee-keepers although it were sold at 1d. per lb.

The Heather looks fairly well this year, although a little later than the average of years; and if winter would only be as late in appearing as the summer has been, and two weeks genial weather come now, we should have a fair harvest of Heather honey, but the weather keeps stormy and cold. The barometer has been low for nearly six weeks now, and the prospect is not very reassuring.

Many bee-keepers are this year taking advantage of the Heather by taking their bees to the moors that never did so before, and the practice is likely to become more common every year. The great drawback is the want of organisation amongst themselves, and not having hives adapted for the purpose. Hives nearly 3 feet long by 2 feet wide may please the inventors, but will never be in repute for bee keeping in general. Instead of occupying nearly 6 feet of space, as some do, my hives only occupy 1 foot 9 inches. The mouthpiece has only to be run in, the ventilator opened, and they are ready for the road. The divisions are held together with brass clasps, the supers by clasps of hoop iron, four screw nails being sufficient to make them rigid. An Archangel mat is sufficient to protect the body of the hive. Some woollen cloth or meadow hay to keep the supers warm, and a sheet of galvanised iron bent over the top keeps all dry, and affords desirable shade if the sun is hot. Thus equipped, which takes but a few minutes, the hives are safe. A few seconds more the alighting board, which is hinged, is folded down, and the ladder attached, a pull at the doorway, out stream the bees, and in five minutes more they are returning to the hive loaded with honey and pellets of pollen. After all are released I keep a watch over their movements to make sure nothing is wrong, thereafter I take a short stroll amongst the Heather and by the river side, its little tributaries affording the sweetest refreshment and a greater blessing than any that man ever invented. I return to my bees cooled and refreshed from Nature's fountain, and with double pleasure view the industrious bees flitting in the sunshine. A stone dyke separates my hives from a number of others, and I will give the results at the close of the season.—A LANARKSHIRE BEE-KEEPER.

BEES DYING IN SUPERS.

MANY thanks for your kind reply about my bees dying in the super. First, I keep my bees in a warm thatched bee-house, which I have used for many years. The glass in the boxes has a lid on hinges to fit over it flush with the frame of the wood hive, and is quite dark. The glass in the other boxes is always comfortably warm to the hand when touched. The comb in the box above which the bees died in the super, seen through the glass, is sealed, and looks clean, good, and healthy. Free communication existed between box and super by means of two slits 4 inches long. The door and window are kept closed in the bee-house. The

window is a square opening, fitted with a wood shutter, opened when required for light. The bees go out from the boxes through the wall by means of openings 4 inches wide, counter sunk in the floor-board so the boxes fit flush to wall. My other bees are healthy. I have only had one swarm this year from five stocks. One came to me from a hollow tree outside, and occupied a tree partially filled with comb, standing on the floor-board in house opposite an opening. The swarm left me last year, and went into the tree from which these came. I am feeding these swarms hard, having given them already 22 lbs. of sugar, and they look like taking as much more. It was to one of these I wanted to put the remainder of the bees left in the box when the bees died in the super. Will it be safe to do so?—H. T. H.

[If the combs are as you say perfectly clean, and contain no dead brood, it will be quite safe to put bees into them. If, on the other hand, they contain dead larvae it will not be advisable to put bees into them. If, as you say, no light can enter the super, then I conclude that the bees have died from the disease stated in my last answer. If there be no blood relation with the dead bees and those you wish to join it will be perfectly safe doing so; but if they are related there is a risk of their falling victims to the disease. Get rid of all the bees of that blood as soon as you can. Four inches wide for a doorway is by far too small an entrance to any hive, and it is quite likely that an expert, on examining the hive, might ascribe the calamity to that. I have witnessed strong hives nearly suffocated by the drones clustering close to the doorway where they had been driven by the bees.—A LANARKSHIRE BEE-KEEPER.]

TRADE CATALOGUES RECEIVED.

Edward Philip Dixon, Yorkshire Seed Establishment, Hull.—*Catalogue of Bulbs and Spring Flowering Plants.*

Euriel Liebig, Dresden.—*Catalogue of Azaleas, Camellias, Rhododendrons, &c.*

Ant Roozen, Overveen, Haarlem.—*Catalogue of Choice Dutch and Cape Bulbs.*



All correspondence should be directed either to "THE EDITOR" or to "THE PUBLISHER." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

Leeds Paxton Society (G. H.).—The report of the excursion to Welbeck on the 11th inst. reached us as we were preparing for press on the 25th, and quite too late for insertion.

Tomatoes (W. J. S.).—The truss of fruit is fine, but the variety is not distinct from others in cultivation. It is very similar to the Chiswick Red that was sent out by Messrs. Sutton & Sons, Reading, this year, and is an abundant bearer.

Reports of Shows (A. G. B.).—It is quite impossible for us to insert newspaper reports of shows that reach us on Wednesday morning, as the greater part of the Journal is ready for press then. This is equally an answer to "G. H." We prefer brief original reports to long newspaper "cuttings" at any time.

Saving Sunflower Seed (M., Croydon).—You may let the heads remain on the plants till the seeds are firm and fall out readily when rubbed with the finger; then cut the heads and spread them on a mat or sheet in a dry place, and in the course of a few days the seed can be easily shaken out. Fowls eat it greedily, and it is very nutritious.

Mixed Bedding in the Parks (Kittie).—The system you mention has become very popular in the last year or two, and has introduced a pleasing variety of style. There is no difficulty in cultivating plants suitable for the purpose, and you will have plenty of time to prepare for another season. In the course of a week or two we shall give an article upon the subject.

Grubs on Pear Trees (H. Williams).—The leaves you have sent are infested with the larva of the Pear sawfly (*Selandria æthiops*), often called the Pear tree slug. It may be destroyed by dusting well with freshly slaked lime or syringing with lime water, and no doubt with the petroleum mixture you are using—we hope not so strong as to injure the leaves. This pest is very injurious, and does not usually attack the under side of the foliage.

Dahlia Fanny Carey (T. P. C.).—The bloom of your new Dahlia is extremely rich in colour, deep purplish crimson, and the florets are of good substance, but scarcely sufficiently pointed to entitle the variety to be classed as a "Cactus" Dahlia. If the plant flowers freely it will be effective

for garden decoration, but, as you know, the bloom is deficient in the recognised properties of a florists' flower.

Moss Litter as a Manure (C. E. S.).—After this material has been used in stables it is excellent for use on land, and especially where the soil is of a heavy nature. It is, however, not perhaps so lasting in its effects as manure is from stables where straw is used for bedding. If we were purchasing manure we should prefer the latter; if it were more convenient for us to use the moss litter in stables we should use it, and chance its action in the land.

Manure for Mushroom Beds (T. N.).—As soon as the manure is in the condition described in "Mushrooms for the Million" it should be made up into mounds or ridges outdoors or in beds in the bins of Mushroom houses, and more should be collected for producing successional crops. The fourth edition, with supplement, of the work in question is by far the best of the series, and this you should have if you do not possess it.

Variegated Parsley (J. S.).—The Parsley you have sent is distinctly and beautifully variegated, and moreover appears to have grown vigorously. Such plants would form an attractive margin in ornamental gardening, and some persons might take a fancy to them for table garnishing. We submitted examples to an expert in the seed trade for his opinion thereon, and he has favoured with the following reply:—"The Variegated Parsley, although in itself somewhat of a novelty, the majority of persons would not think so, from the fact that the green variety when stale has a tendency to turn yellow, and we fear this feature will prevent its ever becoming popular, especially amongst cooks. Then again, twenty per cent. is not a sufficient return, and we should recommend the grower to get it to produce a larger per-centage than this; he might then get someone to take it up for him."

Insects on Chrysanthemum (H. M.).—We do not feel sure that the damage you describe is to be attributed to the insect forwarded. This proves to be one of the leaping Hemiptera, allied, though less in size, to the familiar and unpleasant species, the frog-hopper (*Cercopis spumaria*), the larva of which, in its frothy secretion, gets the name of cuckoo-spit. Your insect is called *Acocephalus pallidus*, and in the larval state it doubtless feeds upon the juices of plants, but in the early summer usually, and it is not a species that often occurs about gardens. That the kindred and larger insect, *C. spumaria*, often does harm to the stems of garden flowers as well as vegetables is a well-known fact; the mischief, however, appears to be solely confined to the larva. Further observations seem to be necessary in this instance. It would be interesting to know if the commencement of the injury can be dated exactly, and whether any frothy grubs were ever noticed on the Chrysanthemums.

Flowers for Shady Border (A New Subscriber).—Annuals are not suitable for a shaded border, but there is no reason, unless the soil be very poor and dry, that the border should not be attractive, and especially in the spring. Winter Aconites grow under trees and cover the ground with golden flowers; Snowdrops also grow and flower well for years under trees, as do Wood Hyacinths and Anemones, of which we have thousands. Dig the soil carefully over, and plant 3 or 4 inches deep in October. They will require no further care. The leaves must not be cut off until quite withered. Daffodils also grow very well under trees, and their bulbs should be planted 5 or 6 inches deep. Lilies of the Valley we have in good soil under trees, and they rarely fail to flower freely in May. Primroses and Polyanthus also grow and flower well, and in the summer large clumps of the blue German Iris are very beautiful. The common Honesty flowers well under trees, as do Foxgloves, stout plants of both being raised in the open and transplanted very early in the spring where they are desired to flower, and Wallflowers succeed in the same way. *Hypericum calycinum* is an excellent plant for growing under trees, producing large yellow flowers in summer; and the Lesser Periwinkle (*Vinca minor*) is equally good for flowering in the summer, and carpeting the ground with bright green foliage in the winter.

Red Spider in Vines (F. J.).—The leaves and shoots sent are devoured with red spider. Take off all the young laterals with curled leaves and burn them, and as you have cut the Grapes give the Vines two or three thorough washings, applying the water with force through a syringe or garden engine. A mere squirting will be of no use whatever. The water should be driven with all the force possible, short of injuring the foliage, against the under sides of every leaf, using four gallons to every Vine, or to that portion of one that may be trained up a rafter. Give two or three such washings in the course of a week, ventilating very freely afterwards. If you use soot water as clear as sherry wine all the better. It can be made by immersing soot tied up in a coarse bag in a tub of water, and two days afterwards throwing in some lumps of lime, then taking off the scum that forms on the surface of the water. The soot water should be mixed till of the colour of pale ale. The leaves are very thin, just such as invite the attacks of the enemy. This is the result mainly of overcropping and keeping the air of the house too hot and dry at some time. It is hopeless expecting good Grapes from such infested Vines, as the insects fatten on the nutriment that should support the fruit and foliage. Do not wait till you have soot water ready, but apply clear water at once and unstintingly, and do not be afraid of getting a wetting yourself in drenching the Vines.

The Windsor Pear (A Landowner).—The Pear you have sent, and about which you desire information, is the Windsor, and the following extract from Dr. Hogg's "Fruit Manual" gives the history of the variety as far as it can be traced. This Pear is now being sold in London, and one grower tells us he has received 7s. per bushel for the crop from his standard trees:—"Windsor (Bell Tongue; Bellissime; Figue; Figue Musquée; Green Windsor; Grosse Jargonelle; Konge; Madame; Madame de France; Summer Bell; Suprême).—Fruit large and handsome; pyriform, rounded at the eye. Skin smooth, green at first, and changing to yellow mixed with green, and with a faint tinge of orange and obscure streaks of red on the exposed side. Eye open, with stout, erect segments, not at all depressed. Stalk $1\frac{1}{2}$ inch long, inserted without depression, and with several fleshy folds at the base. Flesh white, tender, buttery, and melting, with a fine, brisk, vinous flavour, and nice perfume. A fine old Pear for orchard culture; ripe in August. It should be gathered before it becomes yellow. The tree is one of the strongest growers of any variety in cultivation; particularly in its early

growth, the shoots are very thick and succulent, but short. It forms an upright, tall, and handsome tree when grown in an alluvial soil, or in a deep sandy loam, with a cool subsoil; but if the soil is stiff, cold, and humid, it very soon cankers. It is a good bearer, and when grown in a soil favourable to it we have seen it produce an abundance of very large, handsome, and excellent fruit. It has the property in many seasons of producing sometimes a profusion of bloom at midsummer, and a second crop of fruit, which, however, is never of any value, from which circumstance it has been called Poire Figue, Figue Musquée, and Deux fois l'an. The only account of this ancient variety I have seen is by an English writer, who says, 'It was raised from seed of the Cuisse Madame, by a person of the name of Williamson, a relation of Williamson, whom Grimwood succeeded in the Kensington Nursery.' Grimwood succeeded to the Kensington Nursery about the middle or latter half of the last century, but the Windsor Pear is mentioned by Parkinson, in his 'Paradisus,' in 1629, a century before the Kensington Nursery was in existence, and was even then 'well known to most persons;' he says it 'is an excellent good Pear, will bear fruit sometimes twice in a year, and (as it is said) three times in some places.' There can be no doubt that the Windsor Pear is of foreign origin, and that it is the Bellissime and Suprême of the early French pomologists, but it must not be confounded with the Bellissime d'Été of these later writers, and of Duhamel, who has made a sad mess of many synonyms, and on whose authority in these particulars there is no reliance to be placed. It seems at a very early period to have been distributed over Europe. It is mentioned by J. Baptista Porta, in 1592, as being cultivated about Naples, under the name of Pero due volte l'anno; and even in our own country we find it flourishing earlier than this; for Sir Hugh Plat, in giving the authority of 'Master Hill,' who lived about 1563, 'Why trees transplanted do alter,' says, 'Trees that bears early, or often in the year, as Pear trees upon Windsor Hill, which bears thrice times in a year; these, though they be removed to as rich or richer soil, yet they do seldom bear so early, or so often, except the soil be of the same hot nature, and have the like advantages of situation, and other circumstances with those of Windsor. And, therefore, commonly the second fruit of that Pear tree being removed, doth seldom ripen in other places.' This is the first notice we have of the Windsor Pear in England; and it is, doubtless, from the circumstance of those growing on Windsor Hill that the variety received its name. Early in the season, and before the earliest varieties of our gardens are nearly ripe, there are considerable quantities of the Windsor exposed for sale in the Covent Garden Market, which are imported from Portugal, and which are said to be shipped at Oporto. We never could ascertain the name under which they were imported, but have not the slightest doubt about the identity of the variety."

Grapes Cracking (William H. Barker).—The Grapes sent exhibit a somewhat uncommon but by no means rare appearance, being cracked next the footstalk only. It is most prevalent in Vines that have thin foliage—i.e., thin in texture, the berries also having as yours have a thin skin. Vines with thick leathery foliage are less liable to scorch, and the berries have thicker and tougher skins. We once had a mixed house in which the Muscats and Frontignans showed a disposition to crack at the shank end of the berries; as they were young Vines it was attributed to over-luxuriance, and the Vines were kept dry at the roots after they commenced ripening. This only answered so long as the weather kept bright and air could be freely admitted, but on a period of dull weather succeeding the bright, and the house being kept closer, though there was warmth in the pipes and sufficient air to cause a circulation, the Grapes cracked exactly as in the examples you have forwarded to us, but the black Grapes remained sound. We remembered having Muscats, Frontignans, Hamburgs, &c., in one house before, and the berries of the two former did not crack. The difference in the houses was simply this. In the house in which the Muscats and Frontignans did not crack at the shank end of the berries, or anywhere, the Vine roots were entirely outside, whilst in that where the Muscats and Frontignans cracked the roots had the run of an outside as well of the inside border they were planted in. The outside border was composed of loam of a warpy or alluvial nature, being taken from land adjoining a tidal river, subject in rainy weather to overflow its banks and flood the low land. The top soil of this land with its turf was used for the Vine border, with the addition of one cartload in six of old mortar rubbish, and a few whole bones bruised were mixed with it. In the border where the Muscats and Frontignans cracked the loam was of a light nature, a little but not a tenth of lime rubbish being added, and a goodly admixture of half-inch bones. In effecting a cure we took a lesson from the outside border, and watered the inside border freely and regularly until the Grapes were well advanced in ripening; in fact, the Hamburgs and Frontignans were quite ripe when the last watering was given, the Muscats being about half ripe or colouring nicely. The early part of a likely fine day was chosen for the watering, and a mulching of dry material placed on the inside border. The Grapes did not crack, but were finer in berry, and the water at the roots did not injure the ripe Frontignans. To the border we had in the autumn previously given a bushel of freshly slaked lime per rod (30½ square yards), and mixed it with the surface soil as deeply as could be done without disturbing the roots, and it was repeated in March on the surface and only just pointed in. We were careful by attention to ventilation to have the leaves as stout in texture as possible. The result was a much finer crop of Grapes that did not crack, and the Hamburgs and Frontignans hung much longer without shrivelling, so that it was a clear gain all round. We mention this case in hope of its suggesting something that may help you in your difficulty, and be useful to others who have mixed houses of Grapes. Very many Grapes are ruined through an insufficiency of water to inside borders and the fear of continuing it too long. In your case we think the watering has been left off too soon, and that the cracking is due partly to the deposition of moisture on the berries, through want of a little warmth in the pipes, permitting of early and free ventilation, with air increased early in the day. We suspect also that the border is deficient in lime and phosphates. The skin of the black Grapes sent is much too thin to be considered satisfactory, and all the berries sent are smaller than they ought to be. Inside Vine borders should never get so dry as to crack, as in such a case you cannot have an abundance of roots working freely near the surface, and in the absence of these you cannot expect fine Grapes. The border should be moist but covered with dry mulching to prevent evaporation when the Grapes are ripening, especially if they show a tendency to split near the stalk.

Names of Plants.—We only undertake to name species of plants, not varieties that have originated from seed and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in firm boxes. Slightly damp moss or soft green leaves form the best packing, dry cotton wool the worst. Not more than six specimens can be named at once. (*Omega*).—1, *Senecio aquaticus*; 2, *Lythrum Salicaria* var. *roseum*; 3, *Linaria vulgaris*; 4, *Epilobium hirsutum*; 5, *Anglica sylvestris*; 6, *Arctium (Lappa) minor*. (*A Young Gardener*).—1, *Episcæa fulgida*; 2, *Begonia sinuata*; 3, *Mesembryanthemum*, species undeterminable; 4, *Doodia aspera* var.; 5, *Sedum sarmentosum variegatum*; 6, *Fuchsia procumbens*. (*C. W.*).—1, *Nymphæa pygmæa*; 2, *Nuphar lutea*.

Comb Containing Dead Larvæ (*R. C.*).—The comb sent, containing about two dozen larvæ and eggs, has a very pungent smell, as if tobacco smoke had been freely used. If that is the case, then it accounts fully for the dead bees in super. The larvæ has the appearance of having died from suffocation or starvation, the pupa being all surrounded with water. Some of the larvæ were inverted in the cells, and several were of a thick cheesy nature, not unlike a roasted Chestnut in appearance. All of them present a peculiar appearance. Only one cell at all like foul brood, but not it. We advise the destruction of the combs, but at the same time will be glad of as much information regarding the treatment of the hive previous to the appearance of dead bees as well as to its ultimate state. It is quite usual for more eggs than one to be in a cell, and where the queen was young and prolific we have seen the cells half filled with eggs, but whether these were fertilised or not we cannot say.

COVENT GARDEN MARKET.—AUGUST 25TH.

THE bulk of the soft fruit being over business is somewhat quieter. Hard fruit now making its appearance in large quantities at low prices.

FRUIT.

	s.	d.	s.	d.		s.	d.	s.	d.
Apples	½	sieve	1	6	to 4	0	0	0	0
Cherries	½	sieve	0	0	0	0	0	0	0
Currants, Black ..	½	sieve	2	3	2	6	0	0	0
" Red	½	sieve	2	6	0	0	0	0	0
Figs	dozen	1	0	1	6	0	0	0	0
Grapes	lb.	0	6	3	0	0	0	0	0
Lemons	case	10	0	15	0	0	0	0	0
Melon	each	1	0	2	0	0	0	0	0
Oranges	100	6	0	12	0	0	0	0	0
Peaches	per doz.	4	0	10	0	0	0	0	0
Pine Apples English ..	lb.	2	0	3	0	0	0	0	0
Plums	½ sieve	2	0	2	6	0	0	0	0
St. Michael Pines ..	each	4	0	6	0	0	0	0	0
Strawberries	per lb.	0	0	0	0	0	0	0	0

VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.
Artichokes	dozen	1	0	0	0	0	0	1	6
Asparagus	bundle	0	0	0	0	0	0	6	1
Beans, Kidney ..	per bushel	2	0	3	0	0	0	0	0
Beet, Red	dozen	1	0	2	0	0	0	3	0
Broccoli	bundle	0	0	0	0	0	0	3	0
Brussels Sprouts ..	½ sieve	0	0	0	0	0	0	2	0
Cabbage	dozen	1	6	0	0	0	0	5	0
Capsicums	100	1	6	2	0	0	0	5	0
Carrots	bunch	0	4	0	0	0	0	2	0
Cauliflowers	dozen	3	0	4	0	0	0	1	6
Celery	bundle	1	6	2	0	0	0	6	0
Coleworts	doz. bunches	2	0	4	0	0	0	0	0
Cucumbers	each	0	3	0	4	0	0	3	0
Endive	dozen	1	0	2	0	0	0	4	6
Heros	bunch	0	2	0	0	0	0	2	0
Leeks	bunch	0	3	0	4	0	0	4	0
Lettuce	dozen	1	0	1	6	0	0	1	6
Mushrooms	punnet	0	6	1	0	0	0	1	0
Mustard and Cress ..	punnet	0	2	0	0	0	0	0	0
Onions	bunch	0	3	0	0	0	0	0	0
Parsley	dozen bunches	2	0	3	0	0	0	3	0
Parsnips	dozen	1	0	2	0	0	0	2	0
Potatoes	cwt.	4	0	5	0	0	0	5	0
" Kidney ..	cwt.	4	0	5	0	0	0	5	0
Rhubarb	bundle	0	2	0	0	0	0	2	0
Salsafy	bundle	1	0	1	6	0	0	1	6
Scorzoneria	bundle	1	6	0	0	0	0	6	0
Soakale	per basket	0	0	0	0	0	0	0	0
Sballots	lb.	0	3	0	0	0	0	3	0
Spinach	bnsbel	8	0	4	6	0	0	4	6
Tomatoes	lb.	0	2	0	3	0	0	2	0
Turnips	bunch	0	4	0	6	0	0	4	0

PLANTS IN POTS.

	s.	d.	s.	d.		s.	d.	s.	d.
Aralia Sieboldi ..	dozen	9	0	18	0	0	0	1	6
Arbor vitæ (golden)	dozen	0	0	0	0	0	0	2	6
" (common)	dozen	6	0	12	0	0	0	2	6
Arum Lilies	dozen	0	0	0	0	0	0	4	0
Bedding Plants, var.	doz.	0	0	0	0	0	0	6	0
Begonias	dozen	4	0	9	0	0	0	0	0
Calceolaria	per dozen	3	0	6	0	0	0	0	0
Cineraria	dozen	0	0	0	0	0	0	0	0
Cockscombs	per dozen	3	0	6	0	0	0	0	0
Crassula	per dozen	0	0	0	0	0	0	0	0
Cyperus	dozen	4	0	12	0	0	0	0	0
Dracæna terminalis	dozen	30	0	60	0	0	0	0	0
" viridis ..	dozen	12	0	24	0	0	0	0	0
Erica, various ..	dozen	0	0	0	0	0	0	0	0
Euonymus, in var.	dozen	6	0	18	0	0	0	0	0
Evergreens, in var.	dozen	6	0	24	0	0	0	0	0
Ferns, in variety ..	dozen	4	0	18	0	0	0	0	0
Ficus elastica ..	each	1	6	7	0	0	0	6	0
Fuchsia	per dozen	2	6	6	0	0	0	10	0
Foliage Plants, var.	each	2	0	10	0	0	0	8	0
Heliotrope	per dozen	4	0	8	0	0	0	12	0
Hydrangea	per dozen	6	0	12	0	0	0	0	0
Ivy Geraniums ..	per dozen	0	0	0	0	0	0	0	0
Lilium anatum ..	per doz.	12	0	30	0	0	0	18	0
" lancifolium	per doz.	9	0	18	0	0	0	0	0
" longiflorum	per doz.	0	0	0	0	0	0	0	0
Lobelia	per dozen	3	0	4	0	0	0	0	0
Marguerite Daisy ..	dozen	6	0	9	0	0	0	0	0
Mignonette	per dozen	3	0	6	0	0	0	0	0
Musk	per dozen	0	0	0	0	0	0	0	0
Myrtles	dozen	6	0	12	0	0	0	21	0
Palms, in var. ..	each	2	6	21	0	0	0	6	0
Pelargoniums, scarlet	doz.	3	0	6	0	0	0	9	0
Pelargoniums	per dozen	4	0	9	0	0	0	0	0

CUT FLOWERS.

	s.	d.	s.	d.		s.	d.	s.	d.
Abutilons	12 bunches	2	0	4	0	0	0	0	0
Arm Lilies	12 blooms	4	0	6	0	0	0	6	0
Asters	12 blooms	0	3	0	6	0	0	4	0
Azalea	12 sprays	0	0	0	0	0	0	3	0
Bouvardias	per bunch	0	6	1	0	0	0	9	1
Camellias	12 blooms	0	0	0	0	0	0	0	0
" 12 blooms	1	0	3	0	0	0	0	2	0
" 12 bunches	3	0	6	0	0	0	0	2	0
Chrysanthemums 12 bchs.	3	0	6	0	0	0	0	1	0
" 12 blooms	1	0	3	0	0	0	0	0	0
Cornflower	12 bunches	1	6	3	0	0	0	0	0
Cowslips	doz. bunches	0	0	0	0	0	0	0	0
Daffodils	12 bunches	0	0	0	0	0	0	0	0
Epiphyllum	doz. blooms	0	0	0	0	0	0	0	0
Encharis	per dozen	2	0	4	0	0	0	0	0
Gardenias	12 blooms	2	0	4	0	0	0	0	0
Hellebore	doz. blooms	0	0	0	0	0	0	0	0
Hyacinths, Roman, 12 sprays	0	0	0	0	0	0	0	0	0
Iris	12 bunches	0	0	0	0	0	0	0	0
Lapageria, white, 12 blooms	0	0	0	0	0	0	0	0	0
Lapageria, red ..	12 blooms	1	0	2	0	0	0	0	0
Lavender	dozen bunches	4	0	8	0	0	0	4	1
Lilium candidum 12 blms.	0	0	0	0	0	0	0	1	0
" longiflorum, 12 blms.	3	0	6	0	0	0	0	0	0
Lily of the Valley, 12 sprays	0	0	0	0	0	0	0	0	0
Marguerites	12 bunches	3	0	6	0	0	0	0	0
Mignonette	12 bunches	1	0	4	0	0	0	0	0
Myosotis	12 bunches	2	0	3	0	0	0	0	0
Pelargoniums, per 12 trusses	0	9	1	0	0	0	0	0	0
" scarlet, 12 trusses	0	3	0	6	0	0	0	0	0
" 12 bunches	2	0	9	0	0	0	0	0	0
" (Gadoor), per dozen	0	6	2	0	0	0	0	0	0
" Tea	dozen	0	9	1	0	0	0	0	0
" red	dozen	0	8	1	0	0	0	0	0
" Moss	12 bunches	0	0	0	0	0	0	0	0
Primroses, Yellow, dozen	dozen bunches	0	0	0	0	0	0	0	0
Pyretbrum	12 bunches	4	0	6	0	0	0	0	0
Spiræa	12 sprays	9	0	0	0	0	0	0	0
Stephanotis	12 sprays	2	0	3	0	0	0	0	0
Stocks, various ..	12 bunches	3	0	5	0	0	0	0	0
Sunflowers	12 bunches	0	6	1	0	0	0	0	0
Sweet Pea	12 bunches	2	0	4	0	0	0	0	0
Sweet Sultan	12 bunches	3	0	4	0	0	0	0	0
Tropæolum	12 bunches	0	0	0	0	0	0	0	0
Tuberose	12 blooms	0	4	1	0	0	0	0	0
Violets	12 bunches	1	0	0	0	0	0	0	0
" Czar, Fr., ..	bunch	0	0	0	0	0	0	0	0



AMONG THE CROPS.

"EARS 6 inches in length, and with eighty grains to an ear," was the description of a sample ear of Webbs' Kinver Giant White Wheat, given recently in the agricultural article of a daily paper. Well, we copy the description as a remarkable one, and we doubt not that every farmer will agree with us that a field of such Wheat would not only be a sight of which any man might justly feel proud, but it might also be expected to prove a profitable crop. Then comes the question—Is it possible for the Wheat crop generally to equal or even approach this high standard of excellence? The best answer we can give is the fact that we are growing some of this Giant Wheat upon four of our farms this year, and that it is equally fine upon all of them. It is true that we cannot claim to have produced 6-inch ears yet, but then we can neither claim for any of our soil that it is in a high state of fertility. Having regard to its wet, foul, poor condition, when it came into our hands last year, we may reasonably hope for 6-inch ears another season. Sample ears of this year's crop lying upon our table measure close upon 5 inches in length, and there are seventy-six grains in one ear which we counted. Not bad work this for land which had been farmed out, and the result is important as showing what may be done in a year to reclaim poor land by thorough cultivation. Nor must the influence of carefully selected seed be forgotten. Glad indeed are we to find that much attention is now being given to the careful selection of seed corn by leading dealers. The superiority of home-grown to colonial seed corn was well exemplified at adjoining stands of Canadian corn and one of our leading corn merchants at the Norwich meeting of the Royal Agricultural Society. It is precisely by attention to this important point in conjunction with high culture, that we hope to produce crops so superior in quality and abundant in quantity as shall enable us to compete successfully with the markets of the world. To do this, however, no point of good culture must be neglected; to pay a high price for selected seed without careful preparation of the seed bed is a mere waste of money, the crop cannot be a full one. Yet we know this is sometimes done, and we also know how unsatisfactory it is. Only a few hours before writing this article we saw two examples of slovenly practice in Wheat culture. In one case the land was so foul with couch grass that quite two-thirds of the length of every Wheat sheaf was green with grass, to the growth of which the wet summer had at any rate proved favourable. In the other case a specially selected sample of White Wheat, for which a high price was paid, had been sown upon heavy, wet, undrained land. Much of the seed perished; the remainder had grown so well and the ears were so large that one could not but feel regret at the waste and loss involved by such ignorance or carelessness.

Plain, clear, and unmistakeable are the lessons to be learnt among the Wheat crops this year. They tell us to sow early in autumn upon clean land that is drained, well broken up, and stored with fertility; to take equal care in the selection of our seed and of our manures if we would do our best to ensure good crops. We hope to apply this teaching to practice, and in doing it we shall use no farmyard manure, and so avoid one of the heaviest items of expense in ordinary Wheat culture. Just think what the manufacture of such manure involves—cattle, straw, food, attendance, carting to heaps, turning the heaps, reloading, carting upon the land, and spreading. Think, too, of the waste of plant food which occurs when the volatile gases escaping from the heaps load the surrounding atmosphere with foul odours. Compare the

cost of all this with that of home-mixed chemical manures, and surely no man having ordinary intelligence can fail to understand how advantageous the use of chemical manures is. We know by analysis that a ton of farmyard manure contains from 9 to 15 lbs. of nitrogen, 4 to 9 lbs. of phosphoric acid, and 9 to 15 lbs. of potash. We know that these three manurial constituents are required more or less by all farm crops; we know also that we can obtain them in the form of chemical manures, and apply them to the soil at a cost that is absolutely trifling in comparison with that of farmyard manure. It is for these and similar cogent reasons that we so persistently advocate the general use of chemical manures, procured separately from reliable sources, and mixed at home under the supervision of the farmer.

Well is it now to give careful thought to these things, in view of making all possible improvement in our work next season. That work will be speedily upon us, for the harvest is so late that we shall have to turn from it to ploughing and sowing at once this year. Let us then carefully mature our plans now, and it will help us to do so all the better if we look closely into results, mark every blemish and fault, and strive to understand the reason of failure or success when we are among the crops.

(To be continued.)

WORK ON THE HOME FARM.

Since our last note harvest work has been much hindered by rain and frequent complaints of rust and mildew are heard. Root crops, Clover, and grass thrive wonderfully, and "keep" is not often so abundant at this time of year. More and more sheep are wanted to consume this superabundance of green food, and we have hardly ever left a market lately without having invested in one or more lots of sheep, which may always be purchased advantageously at the beginning of harvest. We much fear that crowded sheep markets just now are a sign of straitened means among farmers, many a man having to sell sheep to obtain means for harvest expenses. We hope that the very large quantity of Barley which was spoilt by late rain last year will act as an incentive to early mowing this year. Do not wait till corn is dead ripe before cutting. All corn should be cut as soon as the grain has fairly passed the milky stage, in order to avoid shattering of grain in the field. Spring Oats, Barley, Wheat, and Beans are all being cut as they become ready, but very little carting of corn has yet been done. Some caution will be necessary about carting and stacking, as the showery weather has caused Clover and mixed layers to grow so freely among the corn that it must be left out after the cutting longer than usual. Turnip and Tare seed is abundant good and well ripened. Late Peas prove a troublesome crop, and we hear complaints of much seed sprouting. In all such cases recourse must be had to pigs to turn the Peas to account. Far better is it to turn corn that has sprouted or become discoloured by rain into pork and so sell it than to accept ruinously low prices for it. Pigs and sheep also should be turned on the stubbles as the corn is carted, but care must be taken not to leave sheep there more than an hour or two at a time, especially upon the Barley stubbles, as they consume the fallen ears so greedily that there is risk of stoppage. Pigs sustain no such harm, and they improve in condition very fast with stubble feeding, and are subsequently soon finished and got ready for market in the yards. Be very cautious in the purchase of store pigs. For upwards of a year losses from swine fever have been frequent and serious. We have reason to fear that outbreaks of this dreadful disease are frequently concealed by unprincipled dealers, and then the germs of disease spread far and wide in an apparently mysterious manner.

NEW WHEATS AT PERRY HILL.

A HIGHLY interesting and carefully conducted series of experiments in the cross-fertilisation of Wheat has been conducted by Messrs. James Carter & Co. in their trial grounds in the above nursery during the last four or five years. During the present season apparently all the varieties of Wheat that could be collected in this and other countries have been brought together and grown side by side for proving their character; and further, those forms of English and foreign Wheat that have been selected for cross-fertilisation in previous seasons are grown in rows, the parents on each side of the allotted space to each little family, and the progeny between them. The whole forms what may be not inappropriately termed a museum of Wheat, such as has never been seen before on the face of the earth. The trials have been visited by numbers of persons interested in the improvement of the premier cereal, which is undeniably a subject of great moment, and the experiments in question may be fraught with very important results. Whatever of improvement has been effected in Wheats up to the present time has resulted mainly, if not entirely, from selection—that is, by choosing the best ears, or the best grains, and from these raising stocks. That the special merits of what may be called an accidental sport may be fixed and perpetuated, for a time at least, is proved in the case of various plants, including Peas; not a few of the varieties that have been famed in their generation, and some of which are still grown, having originated in that way, and not

from cross-fertilisation. Of late years this has been resorted to in raising new varieties, notably by Mr. Laxton, and now the same process has been adopted, and the object evidently accomplished, in the raising of Wheat. But granting the intercrossing, it may be asked, What proof is there that it has not happened in a natural manner through the transference of pollen by insect agency or dispersion by the wind, as in the case of numerous other plants? The proof is afforded by the fact that the fertilisation of Wheat in a natural way is effected before the florets open. It is thus necessarily self-fertilised. The pollen that is seen occasionally rising in clouds from a Wheat field during what is termed the blossoming period, is superfluous pollen, and the appendages called flowers that hang from the ears of Wheat at that time are simply the remains of the flowers, and fertilisation is completed before these and the pollen are visible. If Wheat could be crossed accidentally, instead of there being few varieties the number would be bewildering. But by an all-wise and beneficent provision its purity is preserved by sealing the flowers against external influences; otherwise pollen from the lower cereals, the grasses, might, and no doubt would have resulted in the deterioration of our most important food crop long ago. Under the peculiar structural conditions of the inflorescence it has remained the same from generation to generation, except where artificial fertilisation has been accomplished, or sports have been produced and perpetuated.

The cross-fertilisation of Wheat is really an operation of great delicacy, for the flowers have to be opened and the anthers removed while still in a green state or before the pollen cells burst, and yet when the pistil is nearly developed and within a day from being ready for the reception of pollen, that is then obtained from the anthers of another variety, and applied to what is intended to be the seed-bearing parent. This is what has been done in the experiments under notice.

It does not follow that in every case the progeny is superior to the parentage. Nothing of the kind could be expected, and in raising new varieties of whatever kinds of plants by cross-fertilisation a rigid selection is afterwards resorted to, only the best resulting forms being retained for further increase. This work of selection by Messrs. Carter with their new Wheats is of the utmost possible importance, and it is only fair to say that they appear fully alive to it, numbers of plants being passed, not because they are inferior to the parentage, for this can scarcely be said of one in a thousand, but because they do not present some clear and distinct feature that warrants their preservation. The mere question of "novelty" has very properly no weight, and a variety must give evidence of some substantial quality, such as great productiveness, earliness, inherent vigour or superiority of grain to entitle it to the honour of a further trial. In addition to the growing plants systematically arranged as described—that is, the progeny between the parents—dried grain of each saved last year is also presented for examination, and it is very observable that the effect of the crossing is stamped as clearly on the grain as on the habits of the plants, and, as a rule, with scarcely an exception, when a red and white variety has been intercrossed the ripe grain is intermediate in colour, so that instead of mixing the two colours in the mill they are mixed in the field. The object of these crosses has been to combine the vigour of the Red Wheats with the quality of the Whites, and no one can foretell what will be eventually accomplished in this respect. A brief record of what has been achieved is a significant foreshadowing, and the experience of another year will be awaited with interest by those who have had the pleasure of inspecting the trials, and by others to whom they will be made known through the agency of the press.

In the short notes following the varieties will be referred to under the numbers appended to each set, and in giving the parentage the seed-bearer will be named first, the male or pollen parent following in each case, that being the order in which the rows are arranged.

3. **FILL-MEASURE** × **SQUAREHEAD**.—*Progeny*: Plant sturdy, following in this respect the male parent, also in the full ears, which, however, are fully as long as those of the seed parent; grain superior to both, and partaking more of the white than the red variety or Squarehead.

4. **ROYAL PRIZE** × **ENOBLED RED**.—*Progeny*: Plant strong, and promisingly hountiful; earlier than either parent, and the grain less pointed and heavier. The influence of the pollen parent preponderates in this cross.

7. **ROYAL PRIZE** × **CHALLENGE**.—*Progeny*: Very distinct from both, and decidedly superior, also earlier; fine full head and a heavy crop. The plant follows the male in vigour; the ears and grain the seed parent.

8. **ROYAL PRIZE** × **CHIDHAM**.—*Progeny*: Shorter, and more sturdy than either parent, and the grain better than both; crop good.

9. **IMPERIAL WHITE** × **SQUAREHEAD**.—*Progeny*: A very distinct and well-marked cross; plant a little shorter than the seed parent, but taller than the male; grain good, and more like the former than the latter. One plant is carrying forty fine ears.

10. **SQUAREHEAD** × **HUNTER'S WHITE**.—*Progeny*: The male parent decidedly preponderates; growth strong, ears large, grain intermediate in colour between the two.

13. **TALAVERA** × **ROYAL PRIZE**.—*Progeny*: Follows the female parent in character, but with plumper and a shade darker grain; very early, in advance of even the Talavera, and ripe a fortnight sooner than Royal Prize. The earliest Wheat of all.

15. **APRIL** × **GOLDEN GRAIN**.—*Progeny*: Earlier than the April, and grain of larger size and otherwise superior.

19. **FILL-MEASURE** × **BEARDED MAMMOTH**.—*Progeny*: Plant sturdy, ears large and full, grain excellent. The cross is apparent in the

suppression of the horns, these being reduced to short bristles, which birds dislike, hence the name that has been applied, "Birdproof."

20. IMPERIAL WHITE × BEARDED MAMMOTH.—*Progeny*: Plant strong, with wonderfully fine ears; woolly, and semi-horned; grain distinctly better than that of either parent.

22. SQUAREHEAD × BEARDED MAMMOTH.—*Progeny*: Wonderfully dwarf and sturdy, with heavy heads of uniform height. A wonderful cross, and advised to be retained for trial as a fen Wheat, the crops in fen and marsh lands being prone to fall.

26. CLUB-HEADED × CHAMPION.—*Progeny*: Generally following the seed parent in habit of growth and length of ear, but fuller, some of the ears having six rows of grains; a heavy cropper and good grain.

32. TALAVERA × BIRDPROOF.—*Progeny*: A full-headed Talavera; just what was wanted, as combining earliness with productiveness, or the leading features of both parents.

The crosses alluded to indicate the diversified character of the varieties raised, and every one of them possesses qualities that it seems desirable to perpetuate in seeking for further excellence in the all-important crop on which the inhabitants of this and most other countries mainly depend for sustenance. In the conduct of these experiments Mr. C. H. Sharman and his assistant merit high commendation for their painstaking care and unwearied diligence, and their courtesy will be readily acknowledged by all visitors to the grounds.

A TOBACCO-GROWING EXPERIMENT.

IN consequence mainly of a speech by Lord Harris in the House of Lords in March of the present year, a relaxation in the law was permitted whereby, under certain stipulated and stringent conditions, the cultivation of Tobacco as a field crop might be tried experimentally in this country. Among others who have taken advantage of the opportunity thus afforded is the firm above named, and what may be termed the "Carter Experiment" is being carried out in a very systematic and thorough manner in a field in Kent. The crop is open to the inspection of all who are interested in the subject. The Tobacco, something under an acre, is grown on the farm of Mr. Phillips, and is, we believe, in the parish of Bromley, but the nearest station is Plaistow, on the South-Eastern railway, which, we understand, is not quite a mile distant, the station of Lower Sydenham being about a mile and a half from the fields. From this latter station conveyances can probably be obtained if required, and a "guide" at least is desirable, as a stranger might possibly experience some little difficulty in finding his way to "the Tobacco." Messrs. Carter, however, give instructions to intending visitors who apply to them by letter addressed to their head-quarters in High Holborn.

The site chosen for the experiment is sheltered from the north by rising ground, and from the east and south-east by trees; it is open to the full sweep of the wind from the south-west and west only, but a row of mats is stretched across for affording a little protection to the plants from that side. The desirability of some natural shelter is suggested by the large and more or less soft leaves, for it is easy to imagine that plants grown on a plain, or on level tracts near the sea, would be very liable to be "tattered and torn" by hoisterous winds, and the value of the leaves would then be materially impaired. The leaves should be free from split or perforation, or they would at the best be regarded as "damaged goods."

The site of the experiment has been well chosen, but very little that is good can be said of the soil. The field slopes to the north, the higher part being light, poor, and thin, resting on gravel; the lower part ill-drained and cold, yet containing a good deal of humus, the decayed vegetable matter giving the land a dark or peaty appearance. It is on this moister, richer, even if colder side that the plants have made by far the greater progress; indeed on the higher, drier, and poorer side the crop may be said to be a failure. This is solely the result of poverty, for on one plot where some rubbish had been burned and the ashes spread, the half a score of plants or so are among the finest in the field, and are more conspicuous by the stunted starvelings by which they are surrounded. The land was just taken as it was, and 30 tons of manure spread equally on the acre, as if manuring for any other farm crop, or, in other words, as it was desired to show the effects of the differing nature of the soil, no special endeavour was made to enrich the upper half of the plot with an extra quantity of manure. It would be very easy to make this portion as fertile as the other by a liberal dressing of suitable chemical manures, but had this been done the experiment would not be nearly so instructive. As it is, two things are made clear—namely, that Tobacco requires rich soil for inducing a quick strong growth, also that it likes potash. That the soil was inherently poor when "taken to" is evident by the appearance of the Potatoes that are growing in the same field, which cannot give more than "half a crop," and of some rows of Maize that were sown across the plot, the plants in the upper portion only ranging from 6 inches to a foot high, while those on the lower part are 4 feet high or more. There is much the same disparity in the Tobacco plants, for those on the best side would be 4 feet high if they had not been topped, while many of those on the other were not a foot high when examined on Monday in the present week. Here we have the effects of sterility and fertility side by side, and in that respect alone this Tobacco-growing experiment is suggestive, as both the road to ruin and the way to success are alike plain in the management of land. If under the conditions indicated the value of the Tobacco that is raised on this acre of ground equals, or nearly equals, the expenditure, a really well-grown crop must be profitable, and there can be little or no doubt that land that will grow a first-rate crop of Potatoes, or, say, 10 tons of marketable produce per acre, will produce a first-rate crop of Tobacco.

As an accurate record is being kept of the outlay incurred in growing the crop under notice, the returns from the sale of the produce will be awaited with interest.

Seventeen varieties of Tobacco such as are grown in the American plantations are represented in the trial, and at its close Messrs. Carter will be in a position to know which are the best adapted for cultivation in this country, and also able to form a very good estimate of the value of the crop from a given number of well grown plants, for it may be said there are 2000 that will represent a good average crop. The seed was sown in a frame in March, the seedlings transplanted about 2 inches apart in boxes 3 inches deep, and planted out on June 16th. They were earthed up on July 28th, topping commenced on August 9th, and they should be ready for harvesting by the middle of September. The ground was thrown into ridges 3 feet apart, and the plants inserted on these that distance asunder. Eventually the plough was run between the lines cross-ways of the ridges, the result being that each plant stands on a little mound and occupies a square yard of land, or 4840 plants to the acre. This distance is not too much where the land is good, as several of the plants just meet across the space, and care is necessary in passing amongst them not to break or bruise the leaves. These vary in size according to variety, but it may be said that they will average about 18 inches long by 9 inches across on the best part of the ground. Several were measured 20 by 10 inches, and one 22 by 11 inches, this variety being the "Island Broad Leaf." It does not follow, however, that the varieties with the largest leaves will be the best for our climate, as both the one named and the Can, or "Cann's Seed Leaf," also the "Glasner" are, though exceptionally broad in the leaf, dwarfier and later than some others, and earliness is a property not to be overlooked. There are only two varieties that can be called failures—the Kentucky and the White Burley—these evidently requiring a warmer soil, as, though small, they are the best coloured on the higher slope of the land. The point of earliness is determined by the time flower buds form, and which are pinched off immediately. It is almost certain that it would be advantageous to top many of the plants before the buds are visible, or as soon as eight leaves are formed, not counting two or three on the lower part of the stems and that are close to the ground, the grit that is dashed on these by heavy rains rendering them useless. From six to eight large perfect clean leaves are sufficient for each plant, as these can be fully exposed to the sun and become richer in the essential oil than a greater number could possibly be that must of necessity be more or less shaded and immature. All axillary growths are pinched from the stems, so that there is nothing to divert the sap from the principal leaves. The plants, at the least the tall growers and earlier sorts, are about 3 feet high after being topped. A variety named the Big Frederick, which is a form of the Havannah, is one of the most promising in the field, the Yellow Prior being also a stout yet tall grower with fine leaves. The Virginia is a tall good grower, holding its foliage well from the ground, being stronger than the Havannah; and the Yellow Orinoca, a variety of the Virginia, is evidently very good. It is not necessary to describe all the varieties, as their real merits can be only determined after curing; but those named are good growers, with the two exceptions alluded to, which are mentioned to be avoided.

Let the results of the trial be what they may, the experiment so well conducted will go far towards determining the point as to whether Tobacco can be profitably grown in this country or not, and the crop referred to is well worthy of inspection by owners of land, farmers, and gardeners alike.

OUR LETTER BOX.

Winter Oats (Camps).—Sow four bushels of seed Oats per acre of the Winter or Tawny Oat in September. This is the only sort that is suitable for autumn sowing, as it sustains no injury from severe cold, which often proves fatal to other Oats. You ought to be able to obtain good seed from any respectable corn factor in your neighbourhood, or you can apply either to Carters of London, Suttons of Reading, or Webbs of Wordsley, Stourbridge, who advertise farm seeds.

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON..

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude, 111 feet.

DATE.	9 A.M.					IN THE DAY.				
	Baromet- er at 329 and Sea Level	Hygrome- ter.		Direction of Wind.	Temp. of Soil at 1 foot.	Shade Tem- perature.		Radiation Temperature.		Rain
		Dry.	Wet.			Max.	Min.	In sun.	On grass	
1886.	Inches.	deg.	deg.		deg.	deg.	deg.	deg.	deg.	In.
Sunday 15	30.139	64.4	59.8	N.E.	60.2	73.4	54.5	115.5	48.0	0.128
Monday 16	29.832	63.5	58.2	W.	60.4	71.2	57.8	121.3	53.2	0.010
Tuesday 17	29.952	60.4	56.1	W.	60.3	66.7	52.2	119.2	47.1	—
Wednesday .. 18	30.223	59.1	54.4	N.	59.8	68.8	54.2	115.2	48.6	0.033
Thursday 19	30.175	59.2	53.7	W.	59.8	66.8	55.1	119.9	49.4	0.113
Friday 20	30.281	60.9	57.9	N.E.	59.4	72.4	50.1	114.2	43.4	—
Saturday 21	30.122	64.6	60.8	N.E.	59.2	76.5	49.1	118.7	43.2	—
	80.108	62.0	57.3		59.9	70.8	53.3	113.7	47.6	0.284

REMARKS.

15th.—Fine pleasant day.
16th.—Rain in the early hours of the morning; fine, bright, and pleasant day.
17th.—Dull and cloudy, with one or two slight showers.
18th.—Fine bright morning; cloudy afternoon.
19th.—Wet morning; dull damp afternoon; fair evening.
20th.—Fine, bright, and warm.
21st.—Fine and summerlike.
A week generally fine and pleasant, though not of typical August weather. Temperature very similar to that of the preceding week, and just above the average.
—G. J. SYMONS.

COMING EVENTS

2	TH	Crystal Palace Fruit and Dahl'a Shows (two days).	
3	F		
4	S		
5	SUN	11TH SUNDAY AFTER TRINITY.	
6	M		
7	TU	Royal Horticultural Society Committees at 11 A.M. Fruit and Dahlia	[Show.
8	W	Edinburgh Show.	

MIXED FLOWER BEDS.

DIFFERENT styles of bedding plants in the flower garden have gained public favour at successive periods, have been brought into great prominence, only to be subsequently neglected, and in some cases after the lapse of a few years have been revived and resumed their former position in popular estimation. A remarkable example of this is afforded by the beds or borders of hardy flowers, which in the last

century and early in this formed the principal portion of the floral attractions of the outdoor garden. The introduction of numerous exotics for bedding out in summer, and especially the rapid development of the Zonal Pelargoniums for such purposes, gradually displaced their hardy rivals, and the "mixed border" was relegated to some obscure position, or only received the attention it had previously enjoyed in some old gardens, the owners of which were not so readily affected by the changing fashion of the day, and who were reluctant to discard their old favourites for their more gaudy successors. As the massing system of bedding extended its advocates became proportionately opposed to the hardy plant beds which were stigmatised as weedy and ineffective, and it is quite probable that the unreasonable opposition thus offered to the former method of garden adornment, together with the undue patronage accorded to the tender plants, contributed in a great measure to the revival which commenced some years ago and has steadily proceeded ever since.

Pelargoniums, Calceolarias, Lobelias, and similar plants with brightly coloured flowers are valuable for some positions, and in moderation, but masses of beds furnished with such plants are very tiring, and, however the association of the colours may be varied, it is difficult to avoid monotony. The increasing number of Pelargonium beds led to the introduction of sub-tropical beds of foliage plants as a kind of foil to the brilliant colours of the others, but they are not usually adapted for the same positions as the flower beds, and from the taller habit of their occupants they require to be placed in the background unless they have a quarter specially devoted to them. For parks and large private gardens sub-tropical beds are admirable in suitable positions, but they are generally unfitted for the flower garden proper, except in wide expanses where there is plenty of space to isolate them and avoid close association with the others.

In addition to the monotony and glare of flower gardens planted exclusively with occupants of the Pelargonium type there is another consideration which has tended to decrease the number of their admirers—namely, the expense attending propagation and housing sufficient stock for the next season's display. This is a matter of great importance, and many gardeners are too well aware of the difficulties experienced in finding accommodation for the thousands of plants requisite to fill large flower gardens. Frames suitable for the purpose are never too numerous, and they are required in so many other ways in the spring that it is often a serious puzzle to provide for all. Where the demands for a summer display

of the ordinary bedding kind are urgent other plants too frequently have to suffer in order that space may be found for those that are being prepared to fill the beds.

Such facts as these have induced many persons to try other plants either in combination with those of the Pelargonium type or alone, so as to reduce the number of tender occupants needed and to vary the attractions of the flower garden. It has been found that hardy and half-hardy annuals and perennials of many kinds can be utilised in this way to excellent purpose, as they require much less time and attention in preparation, and a large number can be grown all the season out of doors, thus relieving the houses and frames of the winter crowding. Amateurs like the late Miss Frances Jane Hope, of Wardie Lodge, Edinburgh, were the first to set the fashion in this respect, and it has now been taken up and followed in many private gardens, while in the past season or two the London parks have also shown some good examples of what can be done in this direction. In large establishments it would be impossible to dispense with Pelargoniums altogether, nor would it be desirable, but by introducing effective hardy and other plants a compromise is effected between the advocates of the two styles of bedding, and the results have been so satisfactory that the mixed system is likely to extend considerably. Most readers of the Journal are no doubt well acquainted with the style of bedding under notice, but a few remarks upon some of the most pleasing "mixtures," or best hardy plants to be thus employed, will furnish a few hints to those who may intend devoting a few beds to them next year, or increasing the number of those already occupied.

The two principal ways in which the system is carried out is first to plant several distinct kinds together in one bed, either arranged in alternate diagonal lines or dotted over a groundwork of one kind, and second to devote beds to the seedling varieties of one species or strain like Phlox Drummondii, Zinnias, or Tuberous Begonias for example, the colours of which are greatly varied, and afford an agreeable mixture alone. In the first method Pelargoniums, Lobelias, Calceolarias—indeed all the ordinary tender bedding plants, are employed with hardy or half-hardy plants. For instance, a bed that early this season was very attractive had a groundwork of Fuchsia Golden Treasure pegged down, amongst which were scattered plants of Geum coccineum, Pansies of varied colours, and the variegated form of Carex riparia. Another bed with a mixture of Mignonette and purple Stocks margined with Iresine Herbsti and white Lobelias had been very satisfactory, though the dry hot weather has somewhat spoiled its beauty. Fuchsias of several varieties associated with Phlox Drummondii and Zonal Pelargoniums on a ground of dwarf white-leaved Centaureas or Cinerarias also have a good effect. A favourite combination, and one that has been employed for some time in the parks, is formed by planting Pelargonium Daybreak or Princess Alexandra in alternate lines with Iresine Lindeni and Viola cornuta, or any moderately tall blue-flowered variety, like Blue Bell, which is very useful for the purpose. The Violas have also been used with Pelargonium Mrs. Pollock or any of the bright tricolor and silver-edged varieties. Pelargonium Robert Fish and Iresine Herbsti or Lindeni has a distinct appearance, as also have Pel. Stella variegata and Iresine Lindeni, Pel. Manglesi variegatum and Verbena venosa, or the last-named with Centaureas or Cinerarias as a groundwork, and taller plants of Abutilon marmoratum. Lobelia fulgens is a handsome plant for mixed beds, and has a grand effect when rising from a ground of some white or grey-leaved plant, such as Centaureas, Cerastium tomentosum, or Mesembryanthemum cordifolium variegatum, with the addition perhaps of a few Violas of the Blue Bell type. Beds in which many kinds of plants are associated do not as a rule look so well as those with a few boldly contrasted or agreeably harmonised. Occasionally, however, an effective bed may be formed, and an example of this was one in which the foundation comprised

Violas, purple Verbenas, and Carnations, from which arose taller plants of the glaucous *Eucalyptus globulus* and the golden variegated *Abutilon marmoratum aureum*. Two plants that can be advantageously employed in mixed beds or alone for massing are *Spiræa Filipendula plena* and *Armeria cephalotes rubra*, both of which have been very beautiful in Hyde Park this season margined with Pansies.

In the second series of beds—namely, those containing seedling varieties of one species—numbers of suitable plants may be grouped. Some of the leading examples of these are Verbenas, Phlox Drummondii, Carnations, Dianthus of the Heddewigi type, Pansies, Stocks, Lantanas, Tuberous Begonias, Fuchsias, Canterbury Bells, Zinnias, and Helichrysums, but many more could be similarly used, and these are only named as examples. Zinnias make a handsome bed when well grown, and they last well, the colours being very rich when seed of a good strain is procured. Mixed Verbenas and Phlox Drummondii are very charming plants for beds, and now that such excellent strains can be obtained they should be much more generally grown. The Phlox in particular is represented by a number of forms or types that can be had true from seed, so that a most varied and beautiful bed can be readily composed.

As already mentioned, the late Miss Hope gave much attention to hardy plants for bedding out, and twelve or fifteen years ago she had some beds in her garden that delighted many visitors. A few examples of these will serve to indicate the method adopted, and those who wish for more information on the subject should consult her "Notes and Thoughts on Gardens and Woodlands" (Macmillan). In one bed the groundwork was "the little yellow *Oenothera prostrata*, thinly dotted with *Viola Perfection*, or any other purple, lilac, or blue *Viola* or *Pansy* of compact habit." In another the centre plant was "*Yucca gloriosa* set in a groundwork of dark blue *Ajuga purpurascens*, dotted with *Sedum spectabile* and edged with variegated Ivy." A third bed which gave great satisfaction consisted of a groundwork of *Mesembryanthemum tricolor* dotted with *Echeverias* and edged with *Antennaria tomentosa*, and it might be here added that *Portulacas* could be similarly used as a ground for many beds, especially in hot dry situations. Combinations of *Lobelia fulgens* with *Tussilago Farfara variegata*, and *Symphytum officinale variegatum* with *Dielytra spectabilis*, were tried with excellent results, while for a large bed the following were employed:—"Centre plant, *Phalaris arundinacea elegantissima*, surrounded with *Aster bessarabicus*; then scarlet *Pelargonium*, a band of *Helleborus niger major*, the edging being alternate plants of purple-leaved *Plantago rubescens* and *Funkia japonica cordata*." These examples might be considerably increased in numbers, but they will indicate to those who have paid little attention to the subject how much can be done to vary the beauty of the flower garden without depriving ourselves of the brightly coloured *Pelargoniums*.

The culture and propagation of the plants named are frequently described in the weekly calendars, and it is only necessary to remark that the hardy annuals can be raised from seed sown out of doors in the autumn; the half-hardy annuals can be similarly raised under glass early in spring, and transplanted as soon as the weather permits, the hardy perennials being divided either in autumn or spring, and the tender perennials increased by cuttings under glass in the usual way. Sometimes the seed of the annuals is sown in the beds where they are to remain, but this has not proved very satisfactory either as regards the hardy or half-hardy species, and it is preferable to select the seedlings for the beds, as they then have a more even appearance.—FLOWER GARDENER.

GROWING FRUIT FOR MARKET.

EARLY APPLES.

THESE always command a ready sale, whether it be the finer high-coloured varieties for dessert, or the class known as "boy"

Apples, but growers must have something that will take in the market—colour, brightness, size, and quality. It is the same whether the varieties are for dessert or culinary purposes.

EATING APPLES.

Mr. Gladstone.—The earliest Apple with colour; a bright scarlet cheek, a yellow flesh, and brisk flavour, very refreshing. It grows and fruits freely on the Crab stock, and will keep some time. It must supersede Joaneting: White, small and good from the tree; Red or Margaret, medium size, which takes better than the white and is good, only very soft in flesh. Both the Joanetings succeed on the Crab as standards and on the dwarf stock in gardens, especially the latter or Red Joaneting. Mr. Gladstone does well on the Paradise stock. I have it very good as oblique cordons against walls; it comes in a few days after the Joanetings.

Irish Peach.—The best of the early Apples, very juicy and brisk in flavour. A great bearer on the Crab as a standard, on which it succeeds best; at least, it does very indifferently with me on light soil on the Paradise, even with high culture, but on the Crab it is first-rate, not cankering to anything like the same extent on this stock even in adverse soils as on the Paradise. The fruit is bright in colour when ripe.

Early Harvest.—A fertile tree on the Crab as a standard. Fruit medium sized and, being yellow, slightly coloured on the sun side. It is not a taking sort. It is, however, excellent, having much juice, with a pleasing brisk flavour. It certainly ought to have a place in every garden, being very fruitful on the Paradise. Red Astrachan is the stamp of fruit we want in an early dessert Apple, being large, beautiful, and with a fine glow or bloom, but it requires the quality of the Irish Peach. The tree is also tender, cankering greatly.

Yellow Transparent.—This I have only had on the Paradise stock. It is a taking fruit, very clear in skin, the flavour sweet, brisk, and good. It bears freely and is very pretty for dessert, its clear yellow colour and transparent flesh telling in its favour. Mr. Laxton, Bedford, sent me three years ago a variety under the name of Reaper. I think it different from the American of that name. Anyway it was a fruit after the style of White Joaneting, larger, but not quite medium sized, round, slightly flattened, skin yellowish green, bright or coloured on the sun side, flesh rather firm, sweet and brisk in flavour. A very good Apple, ripe early in September and continuing some days. A first-rate grower and bearer, pyramid on the Paradise.

Devonshire Quarrenden.—Well known and one of the best market varieties, being very handsome and highly coloured, medium sized. Better on the Crab than Paradise, making a healthy very free-bearing standard. Some fan-trained trees I had on the Crab on an east wall gave very fine, large, brilliantly coloured fruit. Those that want telling fruit for dessert should grow Apples against walls, taking care to supply them with water passed through a mulching of manure in hot weather.

Kerry Pippin.—Small, but larger on the Crab than the Paradise stock; a free healthy grower and capital cropper as a standard. Very old and very good, alike in looks as it is unexceptional in quality.

The varieties I advise of the early dessert Apples are Mr. Gladstone, Irish Peach, Devonshire Quarrenden, and Kerry Pippin.

EARLY KITCHEN APPLES.

Keswick Codlin.—Still the best very early culinary Apple. Good either as a standard on the Crab or a dwarf on the Paradise.

Lord Suffield.—One of the best, but not a good grower as a standard on the Crab. Best on the Paradise, and not long healthy on that.

Yorkshire Beauty.—Large, bright yellow, bright red cheek. A telling sort and free on the Crab as a standard. It must become a great favourite; the flesh tender and brisk in flavour. It is a good grower and an excellent variety, sent out by Messrs. Smith, Worcester.

Duchess of Oldenburgh.—Good in size, beautiful in appearance, being handsomely striped, brisk pleasing flavour, good for eating as well as cooking, a great cropper, making a profitable standard.

Stirling Castle.—After the Hawthornden type. A great cropper, but not so good as a standard on the Crab as a dwarf on the Paradise stock. The fruit keeps some time. Like the Hawthornden, the fruit is much subject to "pit" in some soils.

Worcester Pearmain.—Very handsome, good size, and great cropper. Does well as a standard on Crab, and is very free as a dwarf on the Paradise. Keeps for weeks and is not a bad eating sort. Introduced by Messrs. Smith, Worcester.

Selection of early kitchen Apples.—Kewick Codlin, Yorkshire Beauty, Duchess of Oldenburgh, and Worcester Pearmain.

EARLY PLUMS.

A siliceous or calcareous soil is best for Plums. In deep loams they make strong and late growth, which does not ripen, and the trees are liable to attacks of gumming and die back. They are most profitable on the limestone or oolitic formations.

Early Rivers.—Very good, hardy, and a great bearer. Very heavy fruit, first-rate.

Czar (Rivers).—Large, an early Prince Englebert, great cropper, and never cracks. This is a valuable addition, one of the very best.

Sultan (Rivers).—Not so large as Czar and round, resembling an Orleans, but deeper coloured and very much earlier. A capital sort.

Gisborne's.—Smallish, yellow, a great bearer, and does well in the north.

Pershere.—Looks like a small Magnum Bonum, hardy, and good bearer; yellow, fine sub-acid flavour. Capital culinary and preserving sort.

Those are kitchen and preserving Plums of merit in the order of their placing.

DESSERT PLUMS.

Early Favourite (Rivers).—This is tender and requires a wall with a south aspect, on which it ripens from the middle of July to August.

Oullins Golden.—Large, greenish yellow, first rate. A strong grower, hardy and free cropper, doing well even in the north.

Perdrigon Violet Hatif.—Purple, medium sized, hardy, and very productive.

Early Blue.—Medium sized, a great bearer, and hardy.

De Montfort.—Purple, medium sized, a good Plum, but not over-hardy. Similar remarks apply to Early or July Green Gage.

Denniston's Superb.—Greenish yellow, large, and good bearer.

Early dessert market Plums are scarce. Oullins Golden, Perdrigon Violet Hatif, and Denniston's Superb are best for growing as standards.

Plums as standards are admirably adapted for garden as distinguished from orchard culture. They readily admit of cropping between, their roots not being so soon injured as those of the Pear and Apple. They appear to relish a certain amount of mutilation of the roots in digging for other crops, only it is not practised too near the stems of the trees, and evidently has the same beneficial effect as root-pruning, increasing the number of active feeders for transmitting the increased food supplies which generally accompanies root-pruning in the shape of mulching and digging in the manure supplied ostensibly for other crops, but actually mainly appropriated by the Plums.—UTILITARIAN.

CHRYSANTHEMUMS AND THEIR CULTURE.

(Continued from page 177.)

KEEPING THE BLOOMS.

ONE of the best qualities which Chrysanthemums possess is the long time the blooms remain fresh either growing on the plants or in a cut state; still, much to the disappointment of many growers for exhibition, they often fail to keep long enough. In most seasons a large number of fine blooms are rendered useless through the too early development of some of the varieties for a particular date; and unfortunately these usually include the finest examples. This is more often the case in the south of England than in the north. The greatest trouble growers situated in the northern counties have to contend against in most seasons is the non-development of the flowers in time for the shows. By judicious management blooms can be kept in good condition a considerable time. Those possessing the darkest shades of colour—namely, the chestnuts, bronzes, and the deepest lilacs—retain their freshness the shortest period, while the primrose shades, the whites and the yellows, continue the longest in good condition. Some growers cut the blooms when expanded, and strive to keep them a long time by placing them in dark closets in rooms, but I have found that in no case will they keep sufficiently fresh for exhibition longer than eight days, and this in only a very few instances. Peter the Great is one of the best varieties for keeping. To have blooms in the best possible condition on any given date four days previous is quite soon enough to cut them. If cut earlier the florets lose their necessary solidity, and in consequence are not so large as they otherwise would be: this is particularly noticeable in the Japanese section. When cut

the flowers should be perfectly developed just at the time they are quite at their best, and before they lose their freshness. The commencement of decay can best be ascertained by feeling the lower florets, which should be crisp and solid, not soft and flabby. When this occurs the white varieties will soon assume a pink tinge, and in some other varieties a faint brownness in the bottom florets points to waning beauty; therefore when the centre of a flower is fully developed and the lower florets fresh the blooms will be right, and should be cut with a long stem—say 9 or 12 inches, so that a small portion can be cut off every day; place it in a bottle previously filled with water, amongst which a little salt has been mixed—say, three-quarters of a teaspoonful to three half pints of water. It matters not whether the water be hard or soft. Place the blooms in a cool slightly darkened room having a dry atmosphere; this is the manner in which I have found them keep the best in a cut state, but I prefer to allow them to remain on the plants until required, or at least two days before, when they may be cut with safety and treated in the manner above described.

When it is seen that a flower is likely to be too early, growing as it is in the coolest house and protected from sun; the moment it is at its best remove the plant to some cool structure which can be partly darkened, and where air can be admitted freely. A potting shed having a northern aspect, Mushroom house not in use, a large air barn, coach house, in fact any place having the necessary requirements—viz., coolness, dry atmosphere, and partly excluded light, will be suitable. No more water must be given to the roots than is absolutely required to prevent the leaves and flowers flagging. Simply enough to retain freshness suffices, as at this period of the plant's existence the functions are torpid, and the work as regards the development of blooms completed. Sometimes a week and even more will elapse before the plant requires water, particularly if the soil is of a retentive character. The pot when sounded in the orthodox manner may ring clearly; still the soil may be moist enough. The best indication of water being required is by examining the leaves, and if they are in the least soft and devoid of freshness then apply clean enough water to soak the soil through, and give no more till the leaves again feel limp. The water which drains from the pot should be at once dried up to prevent damping. Should any signs of this occur at once remove such damaged florets, which only serve to contaminate others near them. Flowers managed in this manner will keep fresh and in good condition for ten or twelve days, sometimes longer.

PREPARING FOR SHOWS.

The old adage of "a good beginning making a good ending" is very applicable to this subject. A systematic method of preparation for a show greatly assists an exhibitor in having all ready by the appointed time to start, particularly if he has a long distance to travel. Some time previous to the date of the show he knows what classes to enter in, and makes his preparations accordingly as to the number of trays and boxes required. The first necessity in arranging the flowers is a light and perfectly clean room. It often happens that the potting shed is the best available place, the benches being the right height, and generally there is plenty of light coming in at the right place—the front windows. This materially assists in arranging the colours harmoniously. Thoroughly sweep the benches, and if at all dusty wash them down; remove any cobwebs hanging from the ceiling, or anything else which by accident might fall and do damage to any of the blooms that might unfortunately be underneath. A little forethought in this will be an advantage. Next spread out the trays on the tables; if for twenty-four blooms two trays, each one holding twelve, will be required; place them ready to receive the flowers allotted to them in their special classes, having small adhesive labels fastened on the front of the tray denoting which class each belongs to—as for example, "24 Incurved, Cup Class," or ditto Japanese, and so on till all the trays are ticketed. Any of the attendants can then see at a glance where to place or take from any individual bloom which it is necessary to remove, without running here and there asking questions and causing confusion at a time when that is least required. To some people all these details may appear trivial, but when something over 100 blooms have to be prepared for one show, and these by a certain time, allowing for a long journey by road and a much longer one by rail, and the time being necessarily cut as short as possible for having them quite fresh, small details must be attended to, method adopted, and forethought exercised, or the work cannot be done satisfactorily. The notices which were fastened on to each tray are taken off when the stands are staged at the show. When the blooms are all arranged in the stands packing should commence. This is often done in a careless manner, but I would impress upon young beginners the necessity and advantage gained by care in this matter. Never think a few minutes wasted which are spent in properly securing the blooms in safe quarters; more than once have I seen the first prize lost through

carelessness in this one point. It sometimes happens that as the blooms are arranged in their positions for exhibition they are not in the best possible manner for packing. Some of those in the back row are too deep to admit of the next tray passing over when placed in its position in the travelling box; such flowers then should change places with one in the front row, which are generally lower. This entails more labour when the show is reached in readjustment, but all this extra labour is soon forgotten when the first prize is gained; and the more times an exhibitor competes the more strongly is it impressed upon his mind that nothing is gained in exhibiting without pains.

The cups containing the blooms should be firmly fixed in the holes in the board to prevent their rocking to and fro. This is best done by wrapping narrow strips of brown paper, say 1 inch wide, around the cup, which is then pulled tightly down into the hole by placing one hand underneath the tray, and with the other hand steady the flower to prevent its being jarred in any way. While this is being done each cup should be examined to see that it contains sufficient water, yet be quite sure they are not too full, or through shaking on the journey the water from one cup will fall upon the flowers underneath. This must be avoided. If travelling boxes are used, like the one figured and described, the blooms will arrive safe at their destination, for little short of a railway accident could displace them.

CHRYSANTHEMUM BOX AND STAND.

The engravings (fig. 27) and specifications will enable exhibitors to provide themselves with the articles represented. The stands for twelve blooms are 2 feet long, 18 inches wide, 6 inches high at

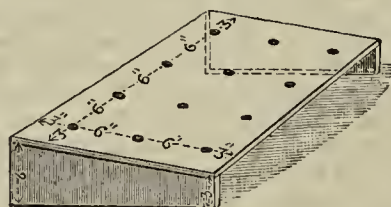
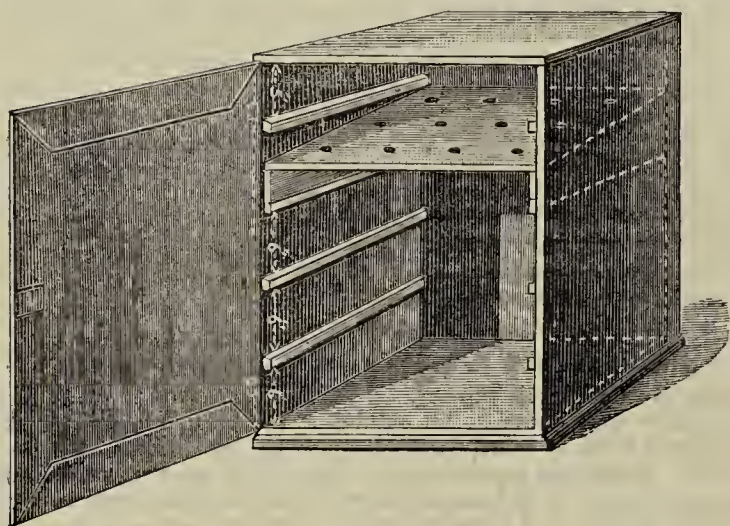


Fig. 27.—Chrysanthemum Box and Stand.

the back, and 3 inches in the front. This is mentioned here, as the figures on the stand are somewhat indistinct. It will be seen that there is sufficient height for the blooms when the stands containing them are placed in the box, the space being one-eighth of an inch wider and longer for their reception.

SPECIFICATIONS FOR CHRYSANTHEMUM BOX AND STAND.—The box to be made in cupboard-form of three-quarter-inch well-seasoned American pine, dove-tailed together at the angles, the sides, top, and bottom to be rebated for the back. Plant a rounded nosing as shown to the top of the box and a small chamfered plinth round the bottom.

The door to be clamped top and bottom, as shown on sketch, and to be hung to fall in flush with the sides of the box, the door to be hung with one pair of 2½-inch butt hinges, and to be fitted with a cupboard lock with, say, two keys. Fix a strong chest handle on each side of the box. It will be noticed that when the stands are placed in the box the door closes tightly against them, thus preventing any movement during transit.

The clear inside size of the box should be 2 feet 8½ inches high, 2 feet ½ inch wide, and 1 foot 6½ inch deep from back to front. The box is intended to hold four stands, each stand arranged to hold one dozen blooms. The stands are made with tops half an

inch thick, and the two sloping sides three-quarters of an inch thick, the holes to be spaced as shown on sketch. The runners for stands to be seven-eighths of an inch and half an inch, and screwed to the sides of the box as shown. It may be noted that the sizes of the stands as figured on the sketch are the regulation size insisted upon at the principal shows.

I have taken as many as 400 blooms in one season to various shows in boxes of this pattern, and never had even a single petal damaged, much less a whole flower, by transit, and this speaks volumes for the method of packing and the style of the box. When a long distance has to be travelled by road, which in my case has been fourteen miles many times, the roads freely covered with loose stones, the boxes should be securely packed in the conveyance; each one should wedge its neighbour tightly, and the outer one should be secured by means of blocks of wood such as are used to secure the pots of specimen plants when travelling. The blocks are simply pieces of wood cut in the shape of the letter L, 4 inches long, 2 inches broad, and 2 inches high at the thick end, which is butted up to the box, and the thin end is fastened to the floor of the cart by a nail driven through. This prevents the boxes shaking against each other. Should the floor of the cart be in any way uneven such hollow places must be filled up with pieces of paper or straw, thus providing a perfectly level foundation for the boxes to stand securely. When the station is reached a careful person will not consign them to the tender charge of railway porters, to be turned on their sides and wheeled and jolted over the stones, but will carefully assist to lift them in and out of the trains, keeping them in an upright position so that the water may not be upset from the cups.—E. MOLYNEUX.

(To be continued.)

MADRESFIELD COURT GRAPE CRACKING.

I THINK it was found out some years ago that one way to prevent this excellent midseason Grape from cracking was to keep it comparatively dry at the roots. Another very good plan is to crop freely—that is, to allow the Vine to carry as heavy a crop of fruit as it can properly mature without weakening the constitution of the Vine. I may be wrong, but I think that is the most natural way of preventing cracking. I have no recollection of cracking being very troublesome where full cropping has been carried out. It is a very good plan to plant Madresfield Court Grape by itself in a border or pit, when the roots may be almost as fully under the control of the cultivator as though it were in a pot; water may then be withheld at pleasure without detriment to Vines requiring or capable of withstanding more copious applications of water. If a Madresfield Court Vine be very lightly cropped it will be almost impossible to prevent cracking by any ordinary means, as they become fully ripe, unless the border be allowed to become so dry as to be actually injurious to the Vine. Generally, in my opinion, a cold and moist atmosphere is more conducive to cracking than a warm and dry one.—J. UDALE, *Elford, Tamworth.*

IN reference to the cracking of this fine Grape, I think it is partly due to not thinning sufficiently and atmospheric moisture combined. I think they should be as severely thinned as Lady Downe's, and then we should hear of less cracking. I have proved that where well thinned there was not a cracked berry in a bunch, but where they were rather close I have had five or six cracked ones to remove, as where they press closely against each other the air cannot circulate freely about the berries, and moisture is deposited on them through there not being sufficient warm air to dispel it. There seem to be more berries cracking this season than last; at least, we hear of more, which I think is partly due to the sunless season we are experiencing; but with inside borders, and due attention to atmospheric moisture, the difficulty, I think, may be overcome.—C. H. COOKE, *The Dell, Rock Ferry.*

HOW NOT TO GROW ROSES.

BEGIN by going to a public sale late in the season—the later the better, as the longer you defer Rose planting the worse for the plants and the less chance there is of them growing. The bundles of Rose trees I see at sales (I sometimes look in, not with any intention of buying, because I cannot afford to throw my money away, but just out of curiosity) are generally dry at the roots; this is as it should be, as most people who can think at all will reflect that as Nature placed the roots of plants in the moist ground, digging them up and drying them well for a few days is a capital way—to ensure their not growing.

When you have purchased your bundle of Roses (get standards if possible, as these always do worse than ground plants), do not be in any hurry to wet the roots in any way, but leave them at the auctioneer's office or any other convenient place until the evening or next day perhaps, then carry or send them home just as they are, without any straw or packing round their roots to keep the fresh air from them; dig a temporary hole in the garden, and force them in, throw a few shovelfuls of earth over

them, leave them so for about a week, and I feel certain you will succeed splendidly in—not growing Roses.

Now when you have decided when and where to plant your Roses, be careful to attend to the following instructions:—Dig a small hole, deep, and stick in the roots anyhow; if the plants are a few inches deeper in the soil than they appear to have been previously, no matter—all the better for your purpose, in fact. Do not mind cutting out any suckers or eyes in the stocks, as these may be the only growths you will get, and a good Briar is better than nothing. Besides, you may go in for budding some day, when they would come in useful. Replace the soil over the roots, tramping it down a little, but not too much, as it is generally believed that plants grow better when planted firmly. Do not tie the plants to stakes if they are tall, say standards (your amateur always begins with standards—and soon leaves off with them), as plants when blown about by the wind cannot make roots or attach themselves to the soil; otherwise they might grow, and so disappoint you in your endeavours not to grow Roses. If you have any hot manure, a little placed in the bottom of each hole for the roots to stand in will assist very much in killing the plants, and so crown your efforts.

Notwithstanding all your care and attention in carrying out these instructions some of the plants may grow, perhaps half of them, perhaps one only. This will probably be some poor Gloire de Dijon, the variety in question seeming to bear a charmed life, and blooming under the most depressing circumstances, under which any other variety would quickly succumb. Speaking of Gloire de Dijon reminds me that a friend told me that he on one occasion bought a dozen standard Roses (observe, always standards for beginners), all different, and warranted true to name. When the survivors flowered only seven of them turned out to be Gloire de Dijon.

Well, do not be disheartened if your plants do grow. I can promise you that you will not be troubled to carry home the first prize for Roses at your local flower show if the blooms are cut from these plants; and although they grow the following summer after being planted, in the winter that follows that summer "Death will close the painful scene," and you will begin again perhaps a sadder and wiser man—sadder, when thinking of the money and time you have lost; and wiser, if you resolve that in your next venture you will seek advice from those who are competent and willing to give it, remembering always that "Failure is the surest foundation of success."

I intended to stop here, but the thought struck me that I had said either too much or not enough. There are hundreds of struggling amateurs, good gardeners, who have not the time to go to nurseries to pick out the plants they want. There are hundreds of others who are not gardeners at all, who just want a dozen or so to plant in the garden for effect. Both these classes prefer to go to the sales and take their chance. Well, for the comfort of these people I will say that I have seen good plants sold at sales, and cheap too, and I believe that if properly treated and promptly (the treatment consists of wetting the roots at once and keeping them wet until planted) that they may be all got to grow and do well, providing the life is not quite extinct before they can be attended to.

The quicker transplanting is done the better, there can be no two opinions on that question, and delay in this, as in other matters, is dangerous.—D. GILMOUR, JUN.

WOOD RIPENING AND FRUIT TREE PRUNING.

"A THINKER" in his eighth, ninth, and tenth paragraphs, on page 153, states some practical truths of great importance to gardeners. In those three paragraphs lies the gist of successful fruit culture—successful in quantity, and successful in quality under glass or out of doors. There is little doubt that annually in this country there are tons of fruiting wood cut out of fruit trees wrongfully and unnecessarily. It is too frequently the case that the very best bearing wood is cut away, and the weakest and most immature retained. Then, again, as "Thinker" states, summer pruning is very often done too late. If the breastwood is shortened or removed in June, as it should be, so that the summer sun and air may have effect upon the wood to be left for next year, it will also require to be done again in August, when the autumn sun will complete its fructifying work. Only as much wood should be left in any fruit-bearing tree as will allow the free access of sun and air to every part of it. I take that to be the rule for pruning in successful fruit culture, and what is removed should be removed as early in the season as possible, and not in the winter.—J. UDALE, *Elford, Tamworth.*

NOTES ON THE EDINBURGH INTERNATIONAL EXHIBITION.

THERE is much to interest anyone connected with horticulture at the very successful Exhibition which Edinburgh has to boast of this year, and at the date of my visit (August 24th) there were some special attractions

to the horticulturist in the way of cut flowers and grasses, which were displayed in the Grand Hall.

The Directors have from time to time provided floral displays, and they have undoubtedly added to the attractions of the place. These displays are to be continued at intervals during the remaining months that the Exhibition is to be open. Messrs. J. Cocker & Sons, Aberdeen, sent a good collection of Roses, beautifully set up so as to form a bank of cut blooms mingled with Maidenhair Ferns, the general effect being extremely pleasing from a short distance, and a closer inspection was rewarded by a sight of splendid individual flowers of such varieties as Alfred Colomb, Merveille de Lyon, A. K. Williams, Baroness de Rothschild, &c. The Roses and Ferns filled one side of a long table, and the other side was occupied with a fine collection of herbaceous flowers, the whole table forming a display that gave evident pleasure to thousands of visitors. Messrs. Dobie & Co. (Rothsay) Laird & Sons, and John Lamont & Sons (Edinburgh) exhibited Pansies, Dahlias, Marigolds, Carnations, &c., and they contributed materially to the attractiveness of the Exhibition.

Messrs. William Thomson & Sons, Clovenfords, Galashiels, showed a basket containing about 12 lbs. of that fine Grape the Duke of Buccleuch, and the noble appearance presented by it was such as to attract crowds round it and to call forth expressions of wonder at the enormous size of the berries. This Grape, though not successfully grown by many people, is undoubtedly a grand variety and fit "to set before a king," or a queen either. I believe that such indeed was done with it lately, as most of your readers would notice in your issue of August 26th. Messrs. Thomson and Sons also appear among the general body of exhibitors, having a stall in the grand Central Court, on which they show samples of their improved Vine and plant manure—a composition founded on long experience and successful practice, and largely used by the gardening community.

A number of horticultural builders exhibited specimens of their workmanship in the grounds outside the Exhibition. Amongst these I noted a very light conservatory and some useful greenhouses by Messrs. McKenzie & Moncur; others by Messrs. D. Lowe & Sons, Edinburgh who also exhibit the Improved Wrought Welded Colonial Boiler, which, appears to be a very good one. A small conservatory shows Pennycook's patent glazing without putty. Various other exhibits connected with horticultural buildings and heating are shown, though it cannot be said that there is a very large display.

The grounds round the Exhibition buildings are well laid out and planted with a variety of beautiful shrubs, contributed by the various nurserymen in and around Edinburgh. A very pretty rockery is also to be seen, which was built and planted by Messrs. Ireland & Thomson, who have also a very large collection of fine shrubs in the grounds. They show Agave filifera with an enormous flower spike bearing about 2000 flowers. This plant seldom flowers, I believe. It is certainly more curious than beautiful. The general effect of the grounds when lit up is very beautiful, and as the evening of my visit was an especially fine one, sitting in the grounds listening to the band of the Seaforth Highlanders discoursing varied strains of music was extremely enjoyable, and a glance round in any direction was rewarded by a fairy scene of many coloured lights.

The Grand Central Court looks very fine when lit up, the whole roof being a mass of lights. A capital view can be obtained from the end next the Grand Hall, where, standing on the raised floor of the latter and looking down the great length of the Central Court, the effect is splendid. The visit of Her Majesty lately brought many thousands to the Exhibition, and no doubt if the Prince and Princess of Wales pay a visit later on there will be great numbers to see the Heir Apparent and his consort; but independently of the attractions of Royalty, the Exhibition has attained success, and there is sufficient to reward anyone for several days spent in its precincts.

The fine arts are well represented, some 1700 pictures, many of great value and beauty, being displayed in the handsome galleries devoted to them. Some splendid specimens of the art of carving are to be seen. Several sideboards most wonderfully carved, and representing various scenes of battle, &c., form conspicuous objects in one of the courts. Makers of the various tools used by foresters, gardeners, &c., are to the fore with specimens of their manufacture. Ornamental pottery is largely shown, and there need be no ugly pots in the dining-room, drawing-room, or hall when such beautiful ones can be had, and at very moderate prices. The Scottish Arboricultural Society exhibit forestry tools and implements, specimens of woods foreign and British, tree seeds, cones, insects injurious to trees, photographs of trees, &c. A very interesting display.

The growing importance of silos is exemplified by exhibits of models of ensilage stacks and Blunt's patent screw and lever press, by the Ensilage Press Company, Leicester. There can be no doubt that as time rolls on, and especially if our summers should continue damp and cold, silos will continue to increase in numbers and importance until they become indispensable adjuncts to most farms. Many samples of jams and jellies are shown, and the public are assured that excellence is the object aimed at in the making of the same. The culture of fruits for preserving is increasing. Proprietors and farmers alike are paying attention to them with the desire to counterbalance in some degree, however small, the low prices obtained for the grain crops of their lands. Properly attended to there seems little reason for doubting that many farmers might benefit themselves by cultivating fruits for preserving. Messrs. Sinton & Sons exhibit models of improved vegetables and roots, collections of vegetable and farm seeds, and specimens of Grasses and Clovers for laying down land in permanent pastures. They also show their method of packing seeds for export.

— There are endless interesting sights in the Exhibition which may be

noted as bearing directly or indirectly on horticulture and its kindred pursuits, but space forbids their detailment here. It may safely be said that no one can walk through the various courts and note the wonderful productions which science and man's ingenuity combine to evolve from the various members of the vegetable world, without being impressed with the idea of how little one individual knows of the capabilities and the values of thousands of objects around.

We have been told that there are "Books in the running brooks, sermons in stones, and good in everything." We may add that there are many sermons in such a display of the wonders of Nature, the divine endowments of mankind, the triumphs of science and art, and the evidences of inventive and constructive genius in the world—all these tending to lead up to the great Author of all. May peace and prosperity follow on such Exhibitions, and may we, as a people, more earnestly pursue those arts that tend to enoble and refine, to the neglect of those pursuits that tend only to keep alive in us feelings of race hatred, of emulation and strife.—VISITOR.



THE Editor of the "Horticultural Directory" will be much obliged if SECRETARIES OF HORTICULTURAL AND COTTAGERS' SHOWS will send on a post card to 171, Fleet Street, their addresses and the full title of their societies.

— THE remarkable hybrid Orchid (*Sophranitis grandiflora* crossed with *Cattleya intermedia*) in Messrs. J. Veitch & Sons' Chelsea nursery, which was described in this Journal, page 128, has been named by Professor Reichenbach, *LÆLIA BATEMANNIANA*, in honour of Mr. J. Bateman, the celebrated orchidist, whose "Monograph of *Odontoglossum*" and "Orchids of Guatemala and Mexico" are two of the finest works of their kind. It is an extraordinary result that crossing the species of two genera should produce a hybrid referable to a third genus, and it indicates that the relationship between *Cattleya*, *Lælia*, and *Sophranitis* is very close.

— THE FRUIT AND DAHLIA EXHIBITIONS AT THE CRYSTAL PALACE take place on Friday and Saturday this week (September 3rd and 4th), and it is expected that both Shows will be very satisfactory as liberal prizes are offered. On the following Thursday and Friday the National Chrysanthemum Society will hold an Exhibition of early Chrysanthemums and Dahlias in the Westminster Aquarium.

— WE are glad to hear that the recently formed LEEDS PAXTON SOCIETY is now fairly established. The rules that have been sent to us are excellent. Early in the month about seventy of the members visited Clumber and Welbeck, and the Society desires to publicly record "its high appreciation of the great courtesy and kindness of Messrs. Carr and Gleeson and their noble employers in permitting its members to have the privilege of visiting these noble places, and the treat thus afforded will not soon be forgotten." Mr. George Hemming, Allerton Hall Gardens, Gledhow, Leeds, is the Hon. Secretary.

— "S. C." writes, "What a useful decorative plant is *VALLOTA PURPUREA* for a sitting room or window. I have now a plant with two trusses, one with eight blooms the other with six, and the more I see it the better I like it. By turning the plant round to the light the flower spikes can be kept upright without sticks. I do not wonder at this being so popular as a cottage window plant, for the foliage alone is good. At cottagers' shows in this district it is exhibited largely. The culture is so very simple. Liquid manure at flowering time is very beneficial."

— WE are desired to state that at the recent SHREWSBURY SHOW Mr. J. Barker, gardener to J. F. Raynes, Esq. (not A. Baynes, as misprinted), Rock Park, Birkenhead, was awarded a second prize for two bunches of Black Hamburg Grapes; and at the Cheadle Show the same exhibitor was first with two bunches of Madresfield Court and the same number of Black Hamburg Grapes. Mr. C. Raffell, Low Hill Gardens, Bushbury, was also first with six stove and greenhouse plants at the Shrewsbury Show.

— DR. SCHOMBURGK, in his report for 1885 on the Adelaide Botanic Gardens, states that the RAINFALL IN SOUTH AUSTRALIA last year was only 15.887 inches, or 5.272 below the average for forty years. In five months, September to January, only 3 inches of rain fell. The heat was terrible, maxima being attained of 182° in the sun and 115° in the

shade! No wonder if crops failed and general depression existed. After the heat came a temperature of 29° and 30° in May and June, with frost.

— A SEVERE HAILSTORM in the neighbourhood of Paris has recently done enormous damage to the fruit crops, Peaches, it is said, being almost all destroyed, causing heavy losses to the growers. Around London the fruit trees are suffering from the heat and drought, Apples and Plums especially.

— GARDENING APPOINTMENTS.—We are informed that Mr. J. Buss, Parkside, Ewell, is engaged to be head gardener to A. Aston, Esq., West Hill, Epsom, Surrey; and that Mr. David Long is appointed gardener to Major the Hon. Robert Needham, Berry Hill, Maidenhead.

— "F. H. G." writes, "For W. R. Raillem's information I may say that I bought twelve plants of *ROSE HER MAJESTY* in pots in the spring, and planted them out in the open ground in May, six of them of extra size, in hope of blooms this summer. The plants have grown vigorously, but I have not had the faintest suspicion of a bloom. I have budded ten standard Briars with Her Majesty, but do not expect to see maiden blooms in 1887. Her Majesty will have to be classed with Paul Peiras and Paul Ricaut of former days, and I hope may prove as good."

— A CORRESPONDENT states that the "FALKIRK PLANT, FRUIT, FLOWER, AND BEE AND HONEY SOCIETY" held its 102nd annual Show in the Town Hall, Falkirk, on Friday and Saturday, the 27th and 28th August. The Show was a success. The competition was keen, and the exhibits mostly of a first-class order. The cut flowers were excellent, and Carnations superb, sufficient of themselves to form an interesting exhibition. The plants were very meritorious, and there was a tasteful display of bouquets. The vegetables were all excellent, and the Celery particularly fine, as were the Potatoes. The honey was not a large display, but was in some cases very fine. The principal winners were Mr. Baird of Carron Inn, and Messrs. Paterson and Sword, Falkirk. The exhibitors were allowed to stage their own exhibits, but after the awards were made the Directors arranged the whole anew, setting off everything to the best advantage.

— MR. H. MITCHELL, gardener to Sir G. Elliot, Bart., M.P., Aberaman Park, writes, "I wish to inform Mr. W. Eastwood that the *VARIEGATED TROPÆOLUM* mentioned by him was a sport taken from the old Ball of Fire *Tropæolum*. The parent plant was grown up the rafters of the conservatory at this place, and I have no doubt Mr. Eastwood did bring cuttings with him from Manchester, but I doubt that he brought the one in question, unless he brought the parent plant, and up to the present time I have claimed that the *Variiegated Tropæolum* was raised in these gardens. Perhaps Mr. Eastwood will through the Journal furnish us with the habit, &c., of the one he mentions, because there is more than one *Variiegated Tropæolum*, but I am under the impression the one referred to by Mr. Smith in the *Journal of Horticulture*, August 12th, 1886, is a distinct variety.

— NEW POTATOES AT CHRISTMAS.—A traveller remarks, "This is one of those things in gardening 'we sometimes may read about yet very seldom see,' excepting it may be at Covent Garden. How they get there or where they come from is often a subject of wonder. We are told they hail from Algeria or some other favoured clime, or that they are simply late Potatoes, not well ripened, or old ones made to appear as new! Be that as it may, it is no easy matter to get a crop of new Potatoes at Christmas. It is easy to plant, but quite another thing to make them grow thus out of season. Let anyone try it. The sets have to be specially ripened and prepared months in advance. We were not a little astonished on visiting the wondrous Grape and Tomato establishment of Mr. George Bashford, at St. Helier's, Jersey, to find a staff of men actually engaged in preparing the ground (the interior of a huge newly erected span-roofed house) to plant with Ashleaf Kidney Potatoes the following day, August 20th, for the Christmas market. These were, Mr. Bashford stated, to be planted 16 inches apart, and to be succeeded by another crop of Potatoes, to be dug in May, planted 3 feet apart between the rows to allow of the planting of Tomatoes in March and April. Fancy a substantial well-built span-roofed house, 480 feet long by 44 feet in width, covering an area of about half an acre of ground devoted to Potato culture!"

CARRON HOUSE, STIRLINGSHIRE.

WHILE we hear of so much agricultural depression and commercial inactivity, it is refreshing to notice that horticulture is not entirely forsaken or reduced to the level which the forebodings of many have pre-

dicted. In every county to which we have paid visits of late years, and they have been many, sad traces of demolition and pecuniary weakness are too visible. Many of the finest of old domains, once the glory of the districts in which they were situated, are either let or tenantless, and the gardens, which were once the pride of the proprietors and the joy of the gardeners, are now in great straits, it having been absolutely necessary to reduce labour power and curtail all other expenditure. Such examples are not of a solitary character, especially in the districts from which the following notes have been gathered. It is cheering, however, to find, on the other hand, that there are many examples of advancement by enterprising proprietors who are doing much to uphold the status of horticulture and stem the tide of retrogression; some establishments having undergone thorough renovation of late years, and other gardens we know are being remodelled and extended, especially in the glass department; but making an entire new place is often a very simple matter compared with transforming an old one.

It is with much pleasure that we lately visited the fine old seat known as Carron House, situated on the banks of the river Carron, where a complete reformation has taken place since we called there some years ago. At that time desolation and dilapidated property in its worst form was visible everywhere in the grounds. What had once been well appointed gardens, large mansion, well arranged offices, and good dwellings of employes at the time of our first visit were as ruinous as the hand of time—one might not be wrong in saying mischievous hands—and total neglect could make them. But now the change is becoming very complete on the right side. Liberal expenditure and skill have made a very radical change. Everything completed or in process of manipulation is done in the most substantial and elegant manner. The present proprietor, T. D. Brodie, Esq., of Gairdoch, became possessor of this property some years ago, and having extensive estates in the locality, as well as other vast interests in the county of another character, he resolved to renovate the old seat throughout, and being a gentleman so favourably known for liberality and refined taste and sound discernment, the work at Carron House, one may be sure, has not been done by halves. The grounds, park, and gardens are said to have been, during the early part of the present century, among the best for high keeping and usefulness in the county of Stirling. But for about half a century or so the place had been allowed to dwindle into insignificance. With no resident proprietor the fine old mansion became a dilapidated ruin covered with Ivy, or falling away piecemeal, but we have heard that plans for new additions to and renovations of the old residence have been submitted, and probably a residence worthy of the property and proprietors may yet be seen. The park is being arranged similar to its ancient character. Many fine old trees are still standing, and well placed they are; additional plantations are in contemplation, but much of this is not required. Where shelter is not necessary, and game not in request, we think it is wise to allow such excellent land to remain in the hands of the cultivators. Good fences have been erected for protection of trees and shrubs, which have suffered much from prowlers, who, for want of better employment, have used their knives freely in mutilating the bark of the old timber. It is singular how this propensity for mischief is so widely developed among certain classes.

Entering by the new substantial iron gates to the garden we observe large breadths of choice trees and shrubs planted in the spacious grounds, and judiciously where the remnants of the old shrubberies stood. These plantations were made evidently at liberal cost two years ago last May. All are growing in the greatest of luxuriance, none having failed. Numbers of old Hollies having been skilfully cut in, removing all dead and unhealthy portions, have sprouted out, and are now forming handsome bushes. In a triangular portion of the gardens at entrance was, when we visited the place for the first time, a jungle of Gooseberries, Apple trees, and offensive weeds of every description; but now replaced by an elegant flower garden laid out in beds on grass, and numbers of fine specimen shrubs are planted.

An arrangement to shut out a number of buildings by throwing up terraces and planting on a flat at the top level is very striking and beautifully executed, and the object of observation is very complete. Tall-stemmed Laburnums, with large heads to remove formality, are on the outer margin of the terrace; then dense lines of *Cypripedium Lawsoniana*, Hollies *Hodginsii*, *Maderiensis*, Golden Queen, and others, from 5 feet to 9 feet high, many fine specimens among them. Then there are *Retinosporas* and Myrtle-leaved Laurels forming a break at a lower level to the first named. Such a fine feature in a corner, which was at one time as offensive as neglected vegetation could make it, is specially worthy of note. At an opposite portion of this garden is placed the most handsome summer-house which we have seen, and fills up a large space where it would have been difficult for shrubs or other plants to have lived. The roof is rough plate glass, and the inside is ornamental wood stained and varnished. Blinds which can be used at pleasure and a set of ornamental rustic furniture completes a remarkably useful adjunct to a pleasure garden—elaborate, but thoroughly substantial, like all the new erections already completed.

Passing onwards we reach the fine old vegetable garden, along the borders of which are splendid collections of Roses, remarkable for clean healthy foliage and profusion of florescence. Across a walk some 100 yards or more long lines of Pansies are in full bloom, and beyond this an avenue through a wood gives an appearance of continuity of the most pleasing character. Every portion of the garden, at the time we took these notes, was closely cropped and a total absence of weeds. Many old dead and dying fruit trees have been removed, and others cut into form and manipulated at the roots are now a mass of fruit. Numbers of

young dwarfs have been planted with kinds suitable to the climate and district. Small fruits are an immense crop, especially old Gooseberries, which have been lifted and replanted. Much of the ground has been raised by means of ashes placed under 3 feet of the soil, a plan acting admirably for drainage of ground which is nearly on a level with the adjacent river. There are fine old walls, once heated, which have been planted with selections of Apricots, Plums, Cherries, and Pears, suitable to the district. The trees are in the finest of health, well trained, and many are already loaded with Plums and Cherries. Cordons fan, vertical, horizontal, and other forms are seen, all equally promising. Little pruning is done. The head gardener (Mr. M. Temple, who has been entrusted with the renovation of this place) is very painstaking with fruit tree management, and says that he has very little faith in mutilating branches while the roots are allowed to grow at random. Most of these young trees have been root-pruned twice, causing a short fruitful growth, with large dark green foliage. The trees are allowed to fruit the first or second year, and are expected to continue fruiting abundantly whether on the restricted cordon or the larger tree. A number of Morello Cherries and other varieties which were lifted and transplanted last winter were loaded with fine fruits. These trees are said to be placed in soil rammed firmly and manured over the surface with Thomson's Vine and plant manure. We now pass to finely kept lawn, studded at the outer boundary with fine old Cherries, Tulip Trees, Mountain Ashes, Hollies, Walnuts, and others with large trunks of great age. All small growth has been removed, leaving the clean trunks and gnarled roots standing on the clean grass unimpeded by any young plantation or the hiding up of what makes old trees peculiarly beautiful—viz., the large roots, which have monopolised much of the surface. Not long since this was reduced to a most obnoxious paddock, all traces of an ancient pleasure ground having been destroyed; an overgrown old orchard of some 6 acres, belted with some splendid Beeches and Oaks, has lately been added to the pleasure grounds. A few of the finest of the old Pear and Apple trees have been retained; much of this space is intended for specimen Conifers. We noticed large breadths of the finest kinds of *Rhododendrons*, in robust health, making excellent growth; also numbers of *Retinosporas* of all the best kinds, Lilacs, Golden *Spiræas*, round-leaved Laurels, specimen Hollies, Yews, and many others of the choicest of shrubs belting this lawn; but quite clear of the old trees, no cutting up or "dotting," as some mischievously do, on fine sward, and walks for use only are found here and kept as much out of sight as possible. We noticed thriving herbaceous borders some hundreds of feet long where we distinctly remember having seen a few years since the rubbish heaps and a luxuriant growth of Nettles and Dock. These had it all to themselves at one time, but collecting *Pæonies*, *Spiræas*, *Phloxes*, *Anemones*, *Pyrethrums*, and many of the most useful of hardy flowering plants now occupy this space.

From there we entered a range of very useful span-roofed houses, which are placed so that the ornamental ground is divided from the vegetable garden. This range may be about 300 feet long, erected for forcing fruits and vegetables, but these are now raised in other structures, and the span-roofed houses are mostly filled with plants. At one end a houseful of young healthy cool Orchids and Ferns mixed, a line of excellent *Gloxinias* along the margins alternated with *Davallias* of sorts was very striking. Other divisions were filled with plants in fine health for winter service. *Azaleas*, *Camellias*, *Epacris*, *Acacias*, also *Begonias*, *Libonias*, *Gardenias*, and *Bouvardias*, *Plumbago rosea*, &c., were well represented in the various compartments. In an Orchid house for a general collection were numbers of useful species for cutting, many fine *Dendrobiums* noble, *Wardianum*, *Jamesianum*, and others, a plant of *Cymbidium eburneum* *Dayanum*, about a yard across and very healthy, was doing well. Several dozen good sized *Cypripedium longifolium* and *Sedeni* were flowering very freely. Good plants of *C. Lowi* *insigne* *Maulei*, *Harrisianum*, *Stonei*, *villosum*, and others were in fine health, with stiff broad foliage. A good batch of *Cattleyas* of good size was in this house, among which we noticed *Trianae*, *Mendeli*, *Mossiae*, and *Eldorado*. A consignment of *Trianae* had lately been received from their native habitats, all starting freely into growth. A dozen or two were fastened to pieces of cork with a little moss attached. These were making growth ahead of those in pots, roots over 6 inches long were hanging down. Several fine plants of *Anthuriums* were prominent features in this house. A pair of *A. Scherzerianum* were about a yard across and flowering freely. A fine plant of the valuable *A. S. Knighti* was in fine condition; *Calanthes* on shelves, with fine foliage; *Ceologynes* are being increased; *cristata* and the *Chatsworth* variety are valued much for cut flowers. There seems to be a great demand for this most useful Orchid. A great grower for sale lately told us that this variety is increasing in value, the demand for it being very great. Numbers of small plants, such as *Dracænas*, *Asparagus*, *Lycopods*, Ferns, *Dieffenbachias*, *Pandanus*, &c., are mixed among the Orchids to give effect.

Another house, the gayest on the place, contained a mass of double *Petunias*, tuberous *Begonias* (double and single), *Pelargoniums* of all the classes, *Fuchsias*, &c. A band of *Harrison's Musk* along the edges was a very effective mass of yellow hanging down, almost overpowering with its perfume. This was erected as a Strawberry house, but now is most suitable a supply for the conservatory, an old building which was enlarged and had a rough plate glass roof put on. The inside walls were lined with beautifully stained and varnished wood. Tree Ferns, *Dracænas*, *Cordylines*, standard *Heliotropes*, *Hydrangeas*, *Coleus* in variety, *Pelargoniums*, *Vallotas*, &c., made a very lively show. Baskets hanging from the roof, and brackets of bronze colour, on which were drooping plants, were very effective.

The principal fruit range is at the north side of the vegetable garden,

and as fine houses as one rarely meets with, finished in substantial and elaborate form, heated admirably, with abundance of ventilation at command. This range is about 250 feet long, 17 feet high, and 18 feet wide. Peaches are on the eastern side, and vineries on the western ditto. The back walls of the Peach houses were loaded, in the earlier compartments, with fine crops of finely coloured fruit. Nectarines are valued much, and in numbers are nearly equal to the Peaches. Trellises about 4 feet from the glass are covered with very healthy trees, only planted three years ago. The soil in which these trees were planted was mostly taken from the vegetable garden, mixed with a quantity of lime rubbish, and a goodly portion of Thomson's Vine and plant manure rammed firmly, so we were told. The results are of the most satisfactory character. Figs of several kinds were a heavy crop on a portion of the back wall of each compartment. The back walls are cemented, painted, and wired, cleanliness being a speciality here. The Peaches valued most are Hale's Early, Early Crawford, Royal George, Bellegarde, Barrington, Dr. Hogg, Violette Hâtive, Belle Bauce, and Sea Eagle.

Nectarines are represented by Pitmaston Orange, Hardwicke Seedling, Victoria, Murray, Violette Hâtive, Elruge, and some others. Passing to the vineries, enormous crops of fine fruit presented themselves. For early use large bunches of Black Hamburg, Foster's Seedling, Muscat Hamburg, and Buckland Sweetwater are represented. The berries of the Hamburgs and a Vine of Madresfield Court, ripening a fine crop, were of large size, and most of them finely coloured. The soil for the Vines is much the same as for the Peaches, with less lime rubbish and more of the Vine manure in it. Other soil come-at-able was not used, but surface taken from the old kitchen garden, spread out and well frozen, is the chief portion of the substance. For succession crops, Muscats, Gros Maroc, Gros Colman, Gros Guillaume, &c., are grown, and such crops as called forth our censure; but we were shown that the heavy impost was on supernumerary Vines which have been cropped heavily for three years, and most of them are to be discarded next year, leaving the permanent rods to do the work. Latest crops to give supplies from February to May are represented by White Tokay, Gros Guillaume, Gros Colman, Alicante, and Lady Downe's, the latter being valued most of all, retaining its flavour, plumpness, and colour to the last. A portion of the gardener's office has been lately apportioned for late Grapes; this spacious room is heated by hot water, and can be used for the Grapes if desired, but during the late winter the heat was seldom turned on. There are good and spacious erections for storing fruit, Onions, &c., over the workmen's sheds. A capital Mushroom house with slate shelves, and spaces with iron sliding doors in which Seakale is forced, packing sheds, and other structures are in a range. There is also, for the benefit of visitors, ladies' and gentlemen's rooms elegantly fitted up and heated with hot water. A tall chimney at some distance takes the smoke from the furnaces, and around this is finely planted with specimen Scarlet, Crimson, and White Thorns, double Cherries, numbers of Brooms, Rhododendron boxes, &c., forming an undergrowth. Many large Thorns are in a line; they are very picturesque, and of great age. Several of the largest Willows which we have seen help to represent the antiquity of this very interesting place. There are shortly to be erected several other ranges of glass structures for plants and fruits, which will complete a garden establishment worthy of the proprietors, who very justly hold positions of the most estimable character throughout the district. The gardener's house, mostly new, is an excellent one, and already nearly covered with Ivy to match the ancient character of the surroundings.

This concludes our notes of a very interesting place where much has been done well, skilfully, and in good taste. Passing onward we were shown a small whitewashed red-tiled cottage, where one of Scotia's noblest sons spent nine years of his boyhood—we refer to the late Dr. Moffat, the famous African missionary, and father-in-law to the late Dr. Livingstone. These names will be held with loving admiration throughout all Christendom as long as the world lasts. This small obscure cottage added greatly to the interest of our very pleasant outing to Carron House, where we experienced the greatest kindness and courtesy.—J. R. D.

FRUIT VERSUS WOOD BUDS.

FRUIT "trees replanted in November blossomed more profusely the following April than others of the same kind, size, and age in the same row did that were not disturbed." This is "special information." In four months of winter wood buds, by some unknown process, were transformed into blossoms five times more in number than in the case of the undisturbed trees. Napoleonic! The metamorphosis is truly Herculean. Yet your erudite correspondent has "nothing to alter or withdraw, everything advanced being strictly accurate." His averment that wood buds change from November so as to blossom in April of the following year can only place him in the "conspicuous position of standing alone in opposition to most, if not all, scientific pomologists in Europe," and allow me to add the world. I am equally convinced of the contrary of my fertile friend's deductions. The buds of fruit trees when the leaves fall are either wood buds or fruit buds, and so they remain during the winter, undergoing no change whatever, and not even "when the conditions are favourable." The admission by me, that lifted trees sometimes blossomed more freely in spring than those that had not been lifted in autumn, admits of no such interpretation as that put upon it. The fruit buds were there present in embryo when the leaves fell, though not so prominent or developed as to mark their distinction from wood buds, and I mentioned the fact, as I thought, to aid your correspondent in accounting for his metamorphosis doctrine. Those buds, latent or otherwise, underwent no change, they were imperfectly developed fruit buds, the

wood bud not sufficiently arrested early enough in the summer to have concentrated upon it the elaborated and assimilated nutriment transmitted by the leaves. What is a fruit bud? Certainly something more definite than an "arrested" wood bud. A fruit bud is the embryonic leaves of a bud transformed into calyx, corolla, and staminate organs, the embryonic shoot changed into ovary and pistillate organs, a concentration of the vital forces on the organs of reproduction which otherwise are expended in growth. This, my "standing alone" critic avers is due to the check, the arresting of growth. Arresting the growth in November, when practically there is none, "causes the change"—the metamorphosis of wood buds in November to blossom in April. Quick work. Hannibal never excelled it, and we know what became of his big battalions, they perished beneath the snow. It is only when food is transmitted by the roots of fruit trees, elaborated and assimilated in the leaves, and concentrated on the buds during growth, that the change from a wood to a fruit bud occurs. But "let the check given be what may be termed violent," continues my ponderous critic, "and the trees will make scarcely any growth, but practically all the buds will become blossom buds." When? Between November and April. I submit the "violent" check will not cause a single blossom more to show in April than exists as a fruit bud in November. I thank your esteemed correspondent for the admission of some growth being necessary—i.e., leaves being present for the transformation of a wood into a fruit bud, sap elaborated and assimilated, and concentrated in the buds, which obviously cannot take place in the buds of a leafless tree, more especially a "replanted" one, in November during the winter.

In Nature it is "age" that "arrests growth," states my "analyst," "causes a cessation of extension." "Arrested growth" in Nature is more likely to be effected by heat and drought, a diminution of supplies. By the August restriction with filiage we get fruit buds prominent in November, and a good blossom the following March or April, and a corresponding crop of fruit twelve months, or soon after we made the restriction; and I have proved many times that by the November restriction we get no addition to the fruit buds of any value, latent or imperfectly developed fruit buds not giving perfect blossoms in the April following. This is a phase of the subject your able correspondent evidently seems "lacking in experience." It does not matter whether I am "an old hand" or "a youngish man," as we must all, or ought to, be measured by that infallible of standards—viz., "practice and results." Restrict early, lift, replant whilst the trees have foliage, the leaves will clench the argument, "settle the matter" as to the character of the buds at their base, or those they surround, as in a spur of a Pear, &c., with a certainty of getting active feeders—a full supply of nutriment to the blossom and fruit in the ensuing season.

As for "replanting" in November, I have only to say that it is most general, simply because most convenient, and with inexperienced cultivators most safe. It is sound, too, for carefully and judiciously performed the fruit of the ensuing season will be little prejudiced, and in twelve months from the November of replanting the bloom buds will assuredly be "five times" more than on the unlifted trees. Anybody can tell nine fruit buds out of ten that will not only blossom in April, but give an abundant crop of fine fruit in due season, contingent, of course, on the "conditions being favourable." If the "fruit" buds cannot be seen in November they are "good for nothing." Let that pass. "A Thinker" plays on the latent or imperfectly developed buds I admitted were not thought fruit buds in November developing blossoms in spring as admitting the fact of the change of a wood bud to a fruit bud by replanting in November. I admit nothing of the sort. I stated that if the blossoms were had from latent or imperfectly developed fruit buds not distinguishable from wood buds in November, they were practically of no fruiting value. To that I adhere. But your correspondent makes the astounding statement, "Whether they are fertile or sterile obviously does not invalidate the change that undoubtedly takes place in the character of the buds." How many owners of Apple, Pear, Plum, and Cherry trees have nothing beyond the sight of blossom to repay them, and not only this one year but many? Such, I fancy, see a difference between the value of blossom and fruit—between sterility and fertility. With reference to the "wood ripening" I have nothing more to add. On the question of Asparagus I have nothing further to place before your readers at present. I thank Mr. S. Castle for his courteous recognition, and though not having enlisted him fully, it is quite clear he leans to the side of the "big battalions."—G. ABBEY.

HEATING BY HOT WATER.

[Read before the Members of the Preston and Fulwood Floral and Horticultural Society, August 7th.]

(Continued from page 175.)

ARRANGEMENT OF THE PIPES IN THE HOUSES.—The pipes in the houses, if practicable, should all be on the same level or as nearly so as possible—that is, after they rise from the mains to the desired level. It would be very difficult to lay down any hard-and-fast rule as to the arrangement of the pipes inside the houses, because they are of such varied shapes and utilised for such a variety of purposes. The piping used should not be placed altogether, but disposed over the house as evenly as the internal arrangements will allow. If the pipes are fixed on the gradual rising principle, which is the one most generally practised, they may be allowed to rise about one-quarter of an inch in each 9 feet length of pipe. Some contend that twice or even three times this rise is necessary to insure or aid circulation. This is

not the case, for the water will circulate freely even when the pipes are all of the same level, and it is certain to do so with the rise indicated. The pipes in plant and fruit houses should be upon pillars that are built upon a firm foundation. If one of these pillars sink ever so little, and thus indicate a fall in the pipes, air is almost certain to find a lodgement, which in case of hard forcing will be the means of bursting the pipes if the boiler escapes damage. I have said that the pipes in the various houses to be heated should be on the same level if possible. Hot water will rush to the highest point first, and when the pipes are fixed on different levels considerable labour is occasioned in the regulation of the valves. When the houses, however, are on different levels, those on the lowest and nearest the boiler can be heated first, for the water will circulate and heat these before those on higher levels. After circulation has commenced on all the levels it is necessary to check the valves on the highest, or those on the lower ones will be robbed. In all such arrangements there is great difficulty in regulating the valves with any degree of certainty that the heat in all the houses will be as desired in the morning, for so much depends upon the force of the fire. The water may flow freely enough at times, and at others circulation may entirely cease, and the house, after banking the fire, become cold instead of warm; but when the heating pipes are arranged on the same level throughout, the regulation of the valves is a simple matter, and the requisite heat can be depended upon with certainty.

BOTTOM HEAT PIPES.—In garden structures for certain purposes it is often necessary to have what are known as top and bottom heat pipes. How frequently the pipes for these purposes are arranged on different levels! It often happens that the former are 18 inches or 2 feet higher than the latter. To heat the lower pipes satisfactorily the valves require regulation, and even with the utmost care in this respect the water often fails to circulate in the lower ones, especially if those at a higher level take the lead. When circulation once commences in the bottom heat pipes and this is continued there is but little difficulty, but when it ceases the top pipes have frequently to be shut off until circulation is renewed. This state of things can be avoided by a little forethought and the practice of a different method. The whole of the pipes in each structure should be on the same level, and they will answer the same purpose as if some are placed higher than the others. Circulation would be even and constant through the whole without much trouble in the regulation of the valves.

DIPS IN THE PIPES—These and awkward bends must be avoided, for they cause friction in the pipes and are often the cause of failure. When pipes dip, say to pass a door, seldom indeed does the water circulate freely, especially if they are in houses only heated occasionally to keep out frost or to maintain a winter temperature of 40° to 45° . There is generally some trouble every time the pipes are required warm. The flow will warm freely enough to the dip, but not beyond. Even when all the other houses are shut off, to force it into this particular one the task is by no means easy or safe. Air becomes deposited in the dip, and it is difficult to force it out. To avoid dips a few yards of extra piping may be needed, and perhaps a pair of extra valves, but the cost for these is in the end economy, and not only saves labour and anxiety, but consumption of fuel. When arrangements cannot be completed without objectionable dips a half-inch air tap should be fixed into the flow pipe beyond the dip, where it rises to the same level as the flow pipe on the opposite side. This is not all, for another of these taps must be inserted on the top of the syphon at the extreme end of the flow pipe, so that it can be turned on at will. In each of these positions open air pipes should also be provided to insure safety. With open air pipes it is often impossible to drive the air out of them. Particulars on this point will be given under the heading of Air Pipes. For the present, suffice it to say that the tap beyond the dip should be turned on until the warm water runs out. Circulation cannot always be effected by this method, but the difficulty can generally be overcome by allowing the tap at the extreme end of the pipes to run until the warm water commences its return journey in the pipe below if placed one under the other. When circulation has once commenced there is but little difficulty in maintaining it until the valve is again closed, and it may give no trouble for some weeks if the water is circulated in the pipes every evening.

QUANTITY OF PIPING REQUIRED.—How to arrive at the quantity of piping required in each individual structure is a very difficult matter for the inexperienced to determine. Many that should know better frequently over-estimate the heating surface of a given quantity of pipes, and only realise the mistake during severe weather and violent storms of wind. It must be borne in mind that a house fully exposed, say a span-roofed structure, will require a greater amount of piping to maintain a given temperature than one in a sheltered spot, a lean-to for instance on the south side of a wall. Even these structures with a building behind them are warmer and need less piping to maintain the requisite heat than one with the wall fully exposed to cooling influences. It also depends upon whether the pipes are exposed to the atmosphere of the house or placed in chambers covered with

grating. Less piping is needed in the former than would be the case if the latter was adopted. We are not helped much in this matter by working out the amount of heat lost per square foot through the walls and glass according to the difference between the external and internal atmosphere. To estimate the cubic feet of air a house contains and the amount of heat required per minute to heat it to a given temperature according to the variations of the external atmosphere, is not only bewildering to the inexperienced, but also to the practical gardener. It is necessary that we should have a simpler method of arriving at a reliable decision than the complicated formulæ presented to us in nearly all works on heating by hot water. To place in any structure only sufficient piping when heated to its full capacity to maintain the temperature required is a great mistake. This I term insufficient heating surface, for the pipes have to be overheated, and instead of economy, as may at first appear, proves a wasteful expenditure of fuel and injurious results to plant life, which can scarcely be estimated. In all structures, large or small, stove or greenhouse, double the quantity of piping actually required for the purpose should be provided. If two 4-inch pipes when made hot will insure the desired temperature no less than four 4-inch ones should be employed, which will warm the atmosphere sufficiently without that drying scorching influence that would be the case with half the number. The size of a house and the purpose for which it is required, after the position has been taken into consideration, will be sufficient guidance for all thoroughly practised men to decide how many feet or rows of 4-inch piping is really needed to regulate with certainty the temperature without having to unduly heat the pipes. But this is not sufficient for those who have no knowledge of the subject. If a temperature of 65° Fahr. at night during the winter is needed and the house (span-roofed) to be warmed is say 40 feet long, 21 feet wide, 5 feet 6 inches high at the eave, and 12 feet high to the ridge fully exposed, it must have no less than eight rows of 4-inch pipes—that is, four rows on each side and across the ends with the exception of the doorways. Half the number would have to be very highly heated to be certain of that temperature. At times it could not be kept up. A house of this description will contain 7350 cubic feet of air, the volume of which is found in the following manner:—

Find the area of A E D C, then the area of A B C; add the two areas together, and multiply the sum by the length of the house, and

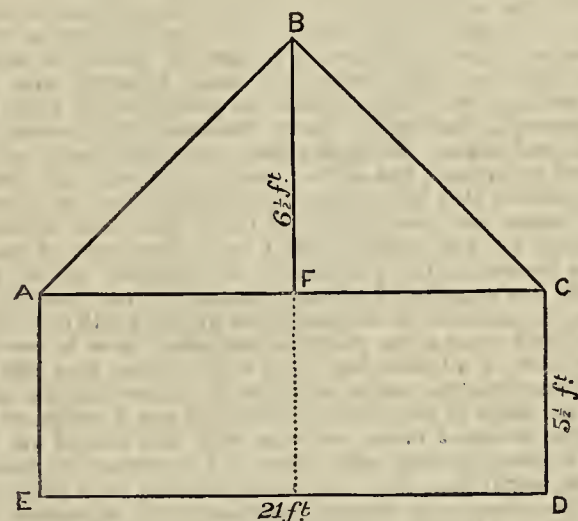


Fig. 28.

the product will be the number of cubic feet of air contained in the house. Area of A E D C = $21 \times 5\frac{1}{2} = 115\frac{1}{2}$. Area of A B C = $\frac{1}{2}$ of $6\frac{1}{2} \times 21 = 68\frac{1}{4}$. Therefore area of end A E D C = $115\frac{1}{2} + 68\frac{1}{4} = 183\frac{3}{4}$. The volume of air = $183\frac{3}{4} \times 40$ (length of the house) = 7350 cubic feet. A house of these dimensions will need eight rows, or 428 feet of 4-inch piping to heat it thoroughly. Divide 7350 by 428 and we obtain 17 one-fifth. Thus, if the required temperature be 65° Fahr. one foot of piping will heat 17 one-fifth cubic feet of air. But if an intermediate temperature be required, say 55° Fahr., 1 foot of piping will be necessary for every 20 cubic feet of air. Again, if a still lower temperature is required, for instance 45° Fahr., 1 foot of piping would be required for every 25 cubic feet of air. If the exclusion of frost merely is needed 1 foot will be sufficient for every 32 cubic feet of air.

PACKING THE JOINTS.—A difference of opinion exists about the best and most durable material for packing the joints of hot-water pipes. The old plan of making the joints with iron filings and sal ammoniac intermixed to insure the metal rusting has been condemned. The arguments used by the advocates of other methods are not strong, but

on the contrary they are feeble, their main point being that they are not durable, and that they are liable to burst through the expansion of the pipes. This can be overcome by placing on the mains where the greatest expansion takes place, or should do, an expansion valve or joint. Again, the rope with which they are first caulked will only last so long, and when this is gone the water, when the pipes are not worked, starts the metal to re-rust and expand, thus the sockets have to give way. This certainly proves that joints made of rope and the patent putty in the market is practically useless. Joints packed with this material will last six or seven years and no longer, therefore they must be condemned. Rope joints will do above ground, and with red lead will last a long time where there is not a great strain upon the pipes. Indiarubber rings will do well above ground, but they cannot be trusted underground on the mains or in close proximity to the boiler. The question arises, What are we to pack the joints with? Portland cement is used largely by some firms, and I should not object to use this above ground. What about expansion when used on the mains? for these expand more than the pipes above ground on account of the greater heat at which they are frequently kept. Under these circumstances, then, we must go back to the rust joints for underground work. My opinion is that they are the best and most durable joints of all when properly made. Other systems are quicker, and I can understand their being employed in contract work. This has something to do with rust joints getting into bad repute, combined with the careless manner in which the joints are made. The metal used for packing is frequently destroyed by the use of too much sal ammoniac. It not only destroys the properties of the metal used for caulking, but that of the pipes, and with any extra strain the sockets burst and the joints in consequence are condemned. The old method cannot be too strongly recommended, for it is the safest and most durable. Joints have been taken out that were made over fifty years ago, the pipes had corroded away, but the joints were perfectly sound. Some idea of the durability of rust joints can be gained from the fact that at Norris Green some were made fifty years ago, as well as many others of a more recent date, and during the past eleven years not one of them has failed, and there is no sign that such has been the case since they were first made.—WM. BARDNEY.

(To be continued.)

LATE GRAPES AT SUMMER SHOWS.

LAST autumn a very animated and interesting discussion took place in these pages respecting late Grapes being awarded prizes at August and September shows in preference to early or seasonable sorts. My contention then was, that perfectly finished Alicante, Gros Colman, Alnwick Seedling, and others should be placed before badly finished Black Hamburgh, Madresfield Court, Buckland Sweetwater, Muscat Hamburgh, and others. From this many dissented then, and I dare say they will do so now; but another year's experience and observation lead me to believe that my contention and that of others who were of the same opinion was quite right. Of late I have been making many notes bearing on this subject, and I have abundance of proof that late Grapes have again taken the lead in the prize list. So far, no show of this year has equalled, far less surpassed, the one recently held at Shrewsbury in its display of Grapes. When we find a £10 prize offered for six bunches, and many other prizes in proportion, there is sure to be a grand exhibition of all sorts, and there were no less than 290 bunches staged. Here, then, was a rare opportunity of observing the exhibition merits of the different varieties, and the result was a system of judging corresponding in almost every particular with that carried out the last few years, followed at many other shows, and condemned by some who, I rather think, would have done the same had they been judging. The Judges at Shrewsbury were men who are thoroughly acquainted with the qualities of fruit. One or two of them are well known as being especially fond of recognising quality apart from quantity, and on the eve of the Shrewsbury Show one of these was heard to observe, "I was told in London last autumn that the Grapes were badly judged at the Shrewsbury Show of 1885, as the late varieties were placed before the early and seasonable ones." Being slightly interested in that matter, but not wishing to make any unfair defence or partisan suggestion, I only replied, "All right; we will see how you get on to-morrow"—and I did. In the first or leading stand Alicante and Mrs. Pince were conspicuous; second to these, Alicante was a heavy dish; in the third, Alnwick Seedling was the best of all; in the fourth prize lot, Lady Downe's was excellent. In the three-bunch class, where eighteen lots were shown, including several of brown Muscat Hamburgh and partially green Madresfield Court, as well as various shades of Hamburgs, Madresfield Court was first, and Alnwick Seedling second. In the first prize collection of fruit, Gros Maroc was deservedly a weighty dish; in the second prize collection, Alicante was grandly shown, and in several other instances late varieties were included as prizewinners, and all this proves conclusively in my opinion that all those who are most anxious to recognise what they choose to term quality are, when they come to deal with such cases, conscientiously obliged to put their ideal impressions on one side, and be guided solely by the merits of the individual varieties. I do not for a moment find fault with the judging at Shrewsbury—

quite the reverse, as it only bears out what I have striven for, and what many Judges were censured for last year. It may not read well to be told that the Alicante was before Black Hamburgh, or Alnwick Seedling before Muscat Hamburgh in August, but so long as fine bunches, large berries, perfect colour, and a magnificent bloom, combined with a good flavour in each variety, are placed before judges, badly developed and poorly finished Hamburgs, Muscats, and such like, will occupy a subordinate position in the prize list. No one would, I think, however, place perfect Alicante or Lady Downe's before perfect Hamburgs, or other early Grapes, and I have rarely known this to be done; but in such cases as those cited above, those who sit in judgment would do well to reserve their opinions until they saw the fruit; or, better still, until they had an opportunity of adjudicating on them, which is the best of all ways of dispelling illusions, causing one to be guided entirely by the merits of the individual cases.—A KITCHEN GARDENER.

SMALL ROSE GROWERS' GRIEVANCES.

IF I venture to enter into the controversy which has been originated in the columns of this Journal on this subject, I do so simply as an observer, and not in any way in my capacity of Hon. Sec. of the National Rose Society, although that position gives me an opportunity of seeing more of these matters than most people. Much that I would say has been already said, but the observations I have to make will tend to confirm what has been said in vindication of Rose Societies, and also to show that small growers have really very little to complain of.

What is a small grower? "Ob," says one Rose lover, "I only grow 200 or 300 plants. I have to attend to them myself, and how can I expect to win against people who employ a gardener or gardeners, and grow their thousand plants?" Let me, in reply to this, give but one instance that occurs to me of many. Some years ago Mr. Geo. Mount of Harbledon, near Canterbury, grew, as I know from personal observation, 400 plants, and yet with that number, attending to them himself, he managed in one season to secure twenty-eight prizes—nineteen firsts, seven seconds, and one third. In commenting on this in the "Rosarian's Year Book for 1883," I used the following words, which are just as applicable now:—"It is always pleasant to have to record such successes, if only because persons have an idea that unless you grow thousands of Roses it is impossible to compete with any degree of success, and although in a general way we may say victory is on the side of big battalions, it is not always so." We must think that as a Leonidas with his 300 withstood the whole shock of the Persian army at Thermopylae, so "A Lady Rosarian" may take courage, and with her few Roses stand the shock of many a more numerous host; but then she must not venture to enter in forty-eights or big classes. This is a mistake many fall into. A neighbour of mine lamented his want of success in showing. I knew the extent of his rosery, and ventured to expostulate with him as to the classes in which he exhibited; told him that he was too ambitious, and that if he would moderate his desires he would be more successful. He took the advice, and the result has this year been as I anticipated.

But perhaps "A Lady Rosarian" may say, "Four hundred Roses I have not half that number." Well, let me give another instance. A gallant officer, a friend of mine, is settled in North Wales, where, like Cincinnatus, he has turned his sword, I will not say into a ploughshare, but into a pruning knife. His brother, who is an active member of our National Rose Society, persuaded him to try Roses. His garden is a small one, and he grows 168 plants, 121 H.P.'s and 47 Teas. Well, two years ago he began, and this year he carried off a first prize for twelve Roses at the National Meeting at Birmingham, beating two amateurs who had five Roses to his one, and who have been Rose growers for twenty years. He also took a third prize for Teas. Besides the two prizes at Birmingham he also won at Christleton first for six Teas and third for twelve H.P.'s, and at New Brighton first for six H.P.'s and first for six Teas; these are both good shows, where there is sharp competition. Indeed, I have very often found that when a grower has gone on increasing his stock until it becomes beyond his own immediate supervision he does not meet with the success that he did in a more restricted area, when he was always peddling about amongst his plants.

Not only does the National Rose Society, but many of its affiliated Societies who work on its lines adopt, as my friend, "F. H. G.," has shown, its principle of trying to give everyone a chance; but I do most sincerely hope it will never fall into the error of distinguishing between those who employ a regular gardener and those who do not. It lays the door open to much dishonesty, which, unhappily, many are too ready to practise, and, indeed, I may say that the district classes—i.e., classes where prizes are given for Roses grown within a certain distance of where the show is held—have caused the Society more trouble than any other classes in the schedule. Why were the classes for suburban Roses given up? Because of the want of competition in the Hybrid Perpetual class, and of the utter rubbish shown in Teas, Mr. Oliver's prize for these never having been awarded.

Nor has our experience in district-grown Roses at our provincial exhibitions been without its drawbacks. In one case where a handsome silver cup was given, the fact of the winner living within the prescribed distance was disputed, and the Ordnance Survey Office had to be appealed to to decide it. In another instance the most barefaced fraud was attempted. An exhibitor actually had the audacity to challenge the Committee to send out a deputation to his garden to show that he really did grow the Roses he exhibited, which, it was stated, had been supplied from a grower in a well-known Rose district, and though when he got them there, coolly remarked, "No; I did not grow them!" and the

whole affair very nearly involved the Society in a lawsuit. I mention these matters in order to show the difficulty which exists in restricted classes, and that we should be landed in never-ending squabbles if one made classes such as have been advocated in the Journal. I do not disparage the advantage of growing a good number of Roses, but I wish to show that small Rose growers are not so grievously handicapped as it has been endeavoured to make out. Where the larger numbers are grown it is, of course, likely that on the day before the exhibition there may be a large number of blooms to gather from; but it may also be otherwise, and I do not think (as the examples I have given indisputably show) that a small grower need despair of winning laurels in the Rose contests.—D., Deal.

THE CULTURE OF PRIMULA SINENSIS.

SINCE my success last March at the Preston Show I have had many letters asking me for information on growing Primulas, and such as I can give is embodied in the following notes.

Most gardeners have a good show of Primulas during four months of the year, but a display may be maintained for fully seven months, as was the case with us last year. First as to seed-sowing. Many persons fail to get a sufficient number of the seeds to germinate. They labour under the mistaken idea that the seeds require to be sown in a very fine soil, if not sand itself, and very often, I believe, Primula seeds are condemned as being bad while the fault might be traced to the above system of sowing.

The mode of treatment I have found most suitable is to prepare a small quantity of moderately fine loam and leaf mould in about equal parts, with just sufficient sand to keep the whole porous. Two or three 6-inch pots are cleaned and half filled with crocks; on these is placed a little rough soil or fibre, and the pots are then filled with the compost prepared in the usual way. Sow the seeds and lightly cover them, but do not add sand to the surface of the soil, as it is this which causes it to set close, and often a green scum will form, which in some degree prevents germination. We sow early in March and again by the end of April. From the first batch we have plenty in succession from the first week in October till the end of January; from the last sowing we get a good succession till the end of April or May.

As soon as the seedlings are large enough to handle they should be pricked off into 6-inch pots or small pans with good drainage. The latter is a very important point in all stages of growth. The Primula dislikes a close compost, and will never thrive in such; therefore good drainage and a rather rough soil should be strictly adhered to. Where Primulas "damp off" it may generally be traced to the stagnant moisture in the soil. After the young seedlings have been pricked off as advised return them to a stove temperature and slightly shaded, and very soon all will be growing again. In about a fortnight the seedlings are ready for another shift. My treatment from this stage onward is somewhat different from the ordinary course of procedure; for instead of giving them small thumb pots we again prepare boxes or pans—either are suitable. We then plant them in the boxes 2 inches apart, when each box will contain from thirty to fifty plants, according to the size, and after being supplied with tepid water an early vinery is a very suitable place for them until they are started, when they should be gradually hardened to a greenhouse temperature.

My reasons for placing the seedlings in boxes instead of using thumb pots are two. The first is, when Primulas are placed in such small pots we are compelled to use what the Primula dislikes—namely, very fine soil, and it is also difficult to keep them all in a moist and genial condition, and under the strictest attention there is generally a third of them dry, while the remainder are wet and often struggling between life and death; and it is in this stage when Primulas are lost by scores, or if not lost they receive a severe check, from which at the best they only partially recover. But when planted in boxes as advised they are much easier kept moist, and will make plants twice the size of others that are started in thumb pots.

After the plants have filled the space allotted to them in the boxes they will require potting in large 60's or small 48's, and in three or four weeks later they will be ready for their second or largest pots, which should not be less than 5 and 6 inches in diameter. After this potting cold frames are the most suitable structures, where they are at hand. Slight shading from very bright sun is beneficial, and a light dewing overhead with the syringe every evening after bright days will be found to suit them. During August a few flowering spikes will be pushing up, and these may with much advantage to the plants be removed as they appear until the middle of September, after which it is neither necessary nor of any advantage to remove flowers; and by October the cultivator will be rewarded by fine sturdy

plants worthy of the name, and these will continue flowering until the end of January or beginning of February.

I must now notice our second plants, as it is from these we get our supply through March and April. These are treated in every way the same as the first until the middle of September, when they should be placed in pots of various sizes, but not less than 7 and 8 inches in diameter, according to the strength of the plants, and it is very important to bear in mind that this last potting should be done just at the right time, or any delay is sure to be the cause of disappointment. There is a very general custom of removing all flowers as a means of retarding the flowering period; but this is a mistaken impression, and instead of retarding or checking the flowers it is certainly shortening the season by the succession of bloom spikes coming much sooner than they would otherwise have done where the first flowers were allowed to develop. The only means of checking the early flowering of Primulas is to repot them as advised directly the pots are filled with roots. They will then continue growing instead of sending up flowers. This is the secret of having late Primulas in first-rate condition, for if once they are allowed to become rootbound up come their flowers. A small quantity of soot added to the soil is very beneficial.—A. WATERS.

DIOSMA UNIFLORA.

THE *Diosmas* are a genus of beautiful Heath-like shrubs from the Cape of Good Hope. They are of easy culture, varying in height from



Fig. 29.—*Diosma uniflora*.

1 to 4 feet, are graceful, yet compact in habit, and are exceedingly floriferous. The colours of the flowers are mainly white, or white and pink; the plants afford nice sprays for cutting, which they endure without injury. Those who enjoy hardwooded greenhouse plants which do not require the nice attention and skilful management of Heaths would do well to turn to the *Diosmas*.

Besides being of elegant appearance by their Heath-like foliage and attractive by their multitude of star-like flowers, the plants, like other Rueworts, emit a powerful perfume. From this characteristic is their name derived—viz., from *dios*, divine, and *osme*, odour. These plants are not extensively cultivated, probably because they are less showy than the usual class of summer greenhouse plants which are now in repute, yet they possess a sober quiet beauty which should, irrespective of their perfume, entitle them to more general cultivation. They are readily propagated by cuttings in sand under a bellglass, and do not require much heat, or they will elongate instead of emit roots. When rooted they should be potted in peaty soil and be grown in a light intermediate house, duly pinching the shoots to keep the plants compact and bushy.

They should be repotted as required, not large shifts at a time, and be potted firmly, incorporating, as the plants become large, loam and charcoal with the peat. The shoots should not be pinched after this time, but the plants should then be stood in the full sun, shading the pots, to have the wood matured, and every shoot will bristle with bloom in the following spring and early summer. When the plants have flowered they should be pruned, top-dressed, and encouraged to make fresh growth, to be well matured before winter. The plants may be wintered in any light structure from which frost is excluded, but it is desirable the temperature do not fall below 40°.

COOL ORCHIDS.

It is doubtless a disappointment to many besides "A Subscriber," page 154, who makes the inquiry relative to successful culture of cool Orchids, that no one has given his experience in the matter. The announcement so frequently seen that Orchids can be grown in cool houses have induced many to become possessors of those varieties which are considered amenable to cool treatment, thinking that as they can grow Pelargoniums and such plants, they will be equally successful with the more aristocratic beauties, but, so far as I have seen, disappointment has been far more frequent than success. The lovely Fuchsias and brilliant Begonias look brighter than before, even though they have been somewhat neglected. Occasionally a solitary *Odontoglossum* sends up a spindly spike on which a few of the buds expand, while the topmost ones stubbornly refuse to do otherwise than fall.

That they can be grown in the most successful manner in houses where the temperature is kept up at a far lower figure than the roasting temperature to which they were subjected on their first introduction is well known, but what I have related is the result which most frequently attends the amateur. The cool treatment of Orchids is greatly misunderstood, and if some successful grower was to explain more fully how to succeed, the information would be greatly valued by many.—J. MACDONALD.

HORTICULTURAL SHOWS.

READING SHOW.—AUGUST 25TH.

THE annual autumn Show of the Reading Horticultural Society has for some years past been distinguished by the competition in the fruit and vegetables, and this season there was a similar preponderance in that department. Plants were not numerous shown, though at one time the autumn exhibition used to attract sufficient competition to well furnish the large marquee. The falling off in this respect is, however, partly due to the dispersal of some good local collections of plants, and to the fact that the prizes in the open classes are scarcely large enough to induce growers from a distance to enter. Still, it is necessary to have a good display of plants in a large exhibition, for however excellent fruit and vegetables may be, they produce little effect in a general arrangement, and a really first-rate show may often in consequence present a somewhat bare appearance at first sight. Efforts should be made to increase the number of plant exhibitors at this Show, and if it is found difficult to secure specimen plants more classes might be provided for groups, as these occupy considerable space, add greatly to the beauty of a Show, and many gardeners can enter such classes when they would be unable to compete with a certain number of specimen stove and greenhouse plants.

The Abbey Ruins is an admirable and most interesting position for a flower show, and being situated in the Forbury Gardens renders it still more attractive. The latter belonging to the town is very neatly kept and tastefully planted, affording a most agreeable promenade. The Abbey Ruins are extremely picturesque, and in few places can be seen such extensive remains of a similar character. The principal marquee devoted to the Show was erected in the central portion of the Ruins, supplementary tents being placed in what was once the banquetting hall when the Abbey had been converted into a Royal residence. In the larger one the plants, cut flowers, and fruits were arranged, the other being appropriated to vegetables, with which there was a remarkably good competition.

Two effective groups were entered in the class for the best arrangement of plants in a space of 12 feet by 10 feet. Mr. Phippen, nurseryman, Reading, secured the first prize for an informal group, in which Ferns and Clematises formed the background, with tall Crotons, Galtonias, Pandanus, Dracenas, and Palms. A few Pelargoniums and other flowering plants were employed as the groundwork, and a margin of Selaginellas. Mr. Sumner, gardener to J. H. Millard, Esq., Reading, was second with a brighter but rather more crowded group, varied, and containing a number of flowering plants, *Lilium auratum* being especially fine, with tall Fuchsias and dwarfed Balsams, Pelargoniums, Asters, and Lobelias. For one specimen stove or greenhouse plant, Mr. Mould, Pewsey, won first honours with *Erica Austriana*, 4 feet in diameter, globular in form, healthy, and well flowered. Equal second prizes were accorded to Mr. Jennings, gardener to J. Freeman, Esq., Farnborough, for *Allamanda Hendersoni*, 4 feet high by 4 feet in diameter, a vigorous, handsome, well flowered specimen; and to Mr. Goodman, gardener to C. Hammersley, Esq., Bourn End, for a wonderfully fine *Eucharis grandiflora* with over fifty scapes of four and six flowers each, an excellent specimen, thoroughly well grown. Mr. Bright, gardener, Whiteknights, Reading, had the best four Fuchsias, tall and well flowered plants; but those from Mr. Booker, gardener to T. Tompkins, Esq., Reading, and Mr. Mayne, gardener to Miss Moon, Reading, though larger and equally healthy, were not so profusely flowered. Mr. Mould had the premier specimen new or rare plant, a fine example of *Croton Bergmanni*. The same exhibitor was also first with foliage plants and stove and greenhouse plants, showing specimens which have been repeatedly noted at other exhibitions this season. The half-dozen well-grown *Liliums* from Mr. Hatch, gardener to S. B. Stevens, Esq., Reading, for which the first prize was awarded, were

capital plants of *L. speciosum* varieties, with six stems each, bearing ten or twelve flowers, or a total of between sixty and seventy to each pot. Mr. Lockie, gardener to the Hon. G. O. Fitzgerald, Windsor, was first with six table plants, neat examples of *Croton angustifolius*, *Pandanus Veitchii*, *Dracena superba*, and *Croton Weismanni* being especially notable.

Cut flowers were very fairly represented, particularly the Asters, Zinnias, and Dahlias, while Roses were unusually good for August. Messrs. J. Cheal & Sons, Crawley, secured several prizes, having choice collections of Dahlias in the different sections, the single varieties being uncommonly pretty. Mr. Walker of Thame and Mr. Tranter of Upper Assenden were also good exhibitors of Dahlias; Mr. C. Turner, Slough, contributing four stands of fine show, fancy, and single Dahlias not for competition. T. W. Girdlestone, Esq., Sunningdale, was very successful with cut Roses, showing some fresh and handsome blooms of the leading varieties. Mr. Benham of Newbury had some handsome double Zinnias placed on paper collars; Mr. Walker following with blooms cut with stems and foliage, a method of exhibiting which the Judges highly commended. Mr. Owen of Maidenhead was awarded first honours for twelve good spikes of *Gladioli*, Messrs. Walker, Tranter, Jones, and Hatch being the chief prize-takers for Asters. Bouquets and stands of flowers were well shown by Mr. Phippen, Reading, and Messrs. Perkins & Son, Coventry.

FRUIT.—The competition was keen in most of the fruit classes, and the quality of the exhibits generally satisfactory, some being exceptionally fine. For eight dishes of fruit, Mr. Goodman took the lead amongst four competitors, having Black Hamburg Grapes of medium size and fair colour, Muscat of Alexandria, rather small but good colour, Windsor Pears, Dr. Hogg Peaches, Brown Turkey Figs, Victory of Bristol Melon, Humboldt Nectarines, and Shipley Apricots, all well ripened. Mr. Ashby, gardener to W. Fanning, Esq., Whitechurch, was second, having fine bunches of Madresfield Court Grapes, but deficient in colour; the Muscat of Alexandria were also rather green; the Morello Cherries, Victory of Bristol Melon, Grosse Mignonne Peaches, and Prince of Wales Plums were, however, of good quality. Mr. Howe, gardener to Sir R. Sutton, Bart., Benham Park, Newbury, was third with a good Queen Pine and handsome Pine Apple Nectarines. With six dishes of fruit, Mr. Richards, gardener to the Earl of Normanton, Somerley, Ringwood, was first for an even and excellent collection, comprising well-coloured Black Hamburg Grapes, a beautifully netted Hero of Lockinge Melon, Moor Park Apricots, finely ripened Brunswick Figs from trees out of doors; A Bec Peaches, and Pitmaston Orange Nectarines. Mr. Lockie's best dishes in the second prize collection were Buckland Sweetwater and Black Hamburg Grapes, fine Negro Largo Figs, and Blenheim Orange Melon; Mr. Jennings following with Alicante Grapes and Crawford's Early Peach.

Grapes were well represented in point of numbers, and the quality also was, in the leading exhibits, satisfactory, though there were some examples sadly deficient in colour, and should have been allowed to remain on the Vines for a week or two longer. There were seven entries, with three bunches of black Grapes, Mr. Cakebread, gardener to Sir Philip Rose, Rayners, Penn, Bucks, being placed first with Madresfield Court, good bunches and berries, and capitally coloured. Mr. Wells, gardener to R. Ravenhill, Esq., Winkfield, followed with Cooper's Black, fine in bunch and berries, and bearing a dense bloom. Mr. Ashby was third, having Madresfield Court, grand in size of bunches and berries, but wanting colour. Black Prince, Muscat Hamburg, and Madresfield Court were shown by the unsuccessful competitors in this class. For three bunches of white Grapes, Mr. Kneller, gardener to W. S. Portal, Esq., Malshanger Park, took the lead, showing Buckland Sweetwater of exceptional size and beautifully ripened. Mr. Wells was second with the same variety, rather smaller, but of fine colour; Mr. Cakebread taking the third place with meritorious examples of Foster's Seedling, these being the only exhibitors. Four entered with three bunches of Muscat of Alexandria, Mr. Cakebread gaining first honours for well-ripened bunches, but one was severely rubbed at the base, which spoiled its appearance to some extent. The second prize Muscats from Mr. Maher, gardener to A. Waterhouse, Esq., Yattendon, were excellent in size, but rather green; and the same remarks apply to those from Mr. Robinson, gardener to Royal College, Englefield Green. Seven exhibitors entered with three bunches of Black Hamburg Grapes. Mr. Bowerman, gardener to C. Hoare, Esq., Hackwood Park, was accorded first honours for large handsome bunches and berries superbly coloured.

In the miscellaneous fruit classes, Figs, Apricots, Nectarines, Peaches, Plums, and Apples were abundantly shown. Mr. Lockie was first with fine Negro Largo Figs, well ripened. In the Apricot class, Messrs. Howe, Robinson, and Goodman were the prizetakers in that order, all showing Moorpark, ripe, and of high colour. There were fourteen dishes of Peaches staged, Mr. Ashby being first for Grosse Mignonne, large and ripe; Mr. Best second with Red Magdalen; and Mr. Jennings third with Crawford's Early. For Nectarines, Mr. Cox, gardener to Mrs. Alexander, Calcot, took the lead with large fruits of Victoria; and Mr. Howe was second. Amongst eight competitors with Plums, Mr. Goodman was first for Washington, Kirke's, and Jefferson's; followed by Messrs. Palmer and Howe. Mr. Turton was first with both dessert and culinary Apples, the former of good colour, especially Red Astrachan, and the latter large, notably Cellini and Peasgood's Nonsuch.

For a miscellaneous collection of fruits Mr. Mortimer of Farnham was awarded the first prize for twenty-four superb fruits of Suttons' Imperial Green Flesh Melon, finely netted and of excellent flavour. The Judges very highly commended this variety, and awarded a first-class certificate for it. Messrs. Sutton & Sons' prizes for Melons brought a dozen competitors, Mr. Lockie taking the first place with Oakley Court Seedling; Mr. Howe followed with Suttons' Masterpiece, and Mr. Booker was third with Lord Beaconsfield. Messrs. Carter & Co.'s prizes for a brace of Melons were awarded to Mr. Lockie and Mr. Goodman, both of whom showed Blenheim Orange in fine condition.

VEGETABLES.—The display of vegetables was an excellent one, and very seldom do we see such even collections staged. Messrs. Sutton & Sons offered prizes for Potatoes and collections of vegetables, which brought a number of competitors, seven entering with nine dishes of Potatoes, all being close in merit, and comprising some very handsome clean tubers. Mr. Allen, gardener to Sir Francis Burdett, Bart., Rainsbury Manor, was awarded first honours for excellent samples of Suttons' Early Regent,

Woodstock Kidney, Ruby, Prizetaker, Reading Russet, Abundance, Favourite, Filbasket, and Seedling. Mr. Pope, gardener to the Earl of Carnarvon, Highclere, was a close second; Mr. Elliott, gardener to J. Hibbert, Esq., Braywick, and Mr. Wells, Winkfield, following. The competition was still more keen with six kinds of vegetables, for which Messrs. Sutton & Sons also furnished the five prizes, ranging from three guineas to 5s. Eleven admirable collections were staged, which in general quality were the best that we have seen this season. Mr. Waite, gardener to Col. the Hon. W. P. Talbot, Esher, succeeded in obtaining the premier award with splendid samples of Veitch's Autumn Giant Cauliflower, Sutton's Perfection Tomatoes (extremely fine), Stratagem Peas, New Intermediate Carrots, and Anglo-Spanish Onions. Mr. Kneller, gardener to W. S. Portal, Esq., Malshanger Park, was second with fine Cauliflowers, Tomatoes, Onions, Carrots, and International Potatoes. Mr. Richards, gardener to the Earl of Normanton, Somerley, Ringwood, was a capital third, indeed there were very few points difference between these three exhibitors, Messrs. Lye and Lockie being fourth and fifth.

Messrs. Webb & Sons, Wordsley, also offered four prizes for collections of six vegetables, no less than twelve exhibitors entering. Mr. Lye took the lead with Autumn Giant Cauliflowers, New Intermediate Carrots, Rowsham Park Hero Onions, Ne Plus Ultra and Evolution Peas, remarkably fine; Messrs. Kneller, Richards, and Lockie following in the order named. Mr. C. Fidler's prizes for six varieties of Potatoes were gained by Mr. Allen, who was first with Prolific, Woodstock Kidney, Perfection, General Gordon, Reading Giant, and Sutton's Abundance; Messrs. Elliott & Paxton being second and third. Celery, Onions, Tomatoes, and Vegetable Marrows were numerous shown, Messrs. Lye, Cakehead, and Lockie securing the chief prizes; while for a brace of Cucumbers Mr. Hott, gardener to Major Allfrey, Wakefield Park, was first with fresh young handsome fruits of Tender and True, 2 feet long.

DEVON AND EXETER.—AUGUST 25TH.

A VERY successful Exhibition was held under the auspices of this Society on Northernhay, Exeter, a position very suitable for such a purpose, being alike convenient to the exhibitors and visitors, although the latter rarely appreciate the capital collection of plants, cut flowers, fruits and vegetables placed before them.

Being so near home Mr. B. W. Cleave (J. Lock, gardener) had matters much his own way, taking in all eleven first and two second prizes. But several other competitors exhibited in a very creditable manner. The best nine stove and greenhouse plants were staged by Mr. B. W. Cleave, these including fine plants of *Erica Eweriana*, *E. Marnockiana*, *Dipladenia amabilis*, and *Ixora Williamsi*, the latter bearing 170 good trusses of bloom. Mrs. Ensor took the second prize for a creditable group, which included well-flowered specimens of *Lapageria rosea*, *Allamanda grandiflora*, and *Eucharis amazonica*. In a corresponding class for six plants, Mr. W. Brock was the only exhibitor, and was awarded the first prize, having *Ixora Williamsi*, *Eucharis amazonica*, and *Bougainvillea glabra* in good condition. Mr. B. W. Cleave was easily first for nine fine-foliaged plants, these including grand specimens of *Croton Warreni*, *C. Williamsi*, *Encephalartos villosus amplius*, *Latania borbonica*, and *Kentia Belmoreana*. Mr. W. Brock was second, his most noteworthy plants being a good *Thrinax elegans* and *Croton princeps*. Included in the nine grand Ferns with which Mr. B. W. Cleave won the first prize were *Davallia fijiensis*, *Davallia polyantha*, *Gleichenia rupestris glaucescens*, *Gleichenia Mendeli*, and *Marrattia Cooperi*. Mr. W. Brock was second with much smaller plants. Groups of miscellaneous plants arranged for effect on a space not exceeding 100 square feet are always a great feature at Exeter, and nowhere else are they done in better style. Mr. B. W. Cleave was deservedly awarded first prize, a silver cup valued at £5 5s.; the second prize going to Mr. W. Brock, who won the cup last season. Mr. Cleave's groundwork consisted of Maidenhair Fern, tastefully interspersed with standard *Crotons Warreni*, *angustifolium*, and other drooping varieties, good specimen *Cocos Weddelliana*, *Eucharis amazonica* in small pots, *Dipladenias*, *Vallota purpurea*, and *Gloxinias*, an edging of *Dactylis* and *Isolepis* completing this charming arrangement. The competition was also very good in the class for smaller groups, and here Mrs. Ensor was a good first, and Mrs. Ponget second. Col. R. Courtenay had the best six *Fuchsias*; and Mrs. Ponget was second. Mr. B. W. Cleave was a good first for *Lycopods*, and Mrs. Ensor second; and Mrs. Ponget first for British Ferns, and Mr. Cleave second, both having fine plants of choice varieties. Lord Haldon was first for double *Begonias*, and Mr. W. Brock with single varieties, the varieties being very good in each instance. Col. R. Courtenay was first for both single and double *Zonal Pelargoniums*, and Mrs. Ponget for *Cockscombs*, their exhibits being most praiseworthy.

The competition with cut flowers was fairly good. Mr. J. Nation was first for forty-eight *Dahlias*, and Mrs. Hart second, and they occupied similar positions with twelve varieties. Mrs. Ensor was first for twenty-four *Gladioli*, and Mr. B. W. Cleave with eighteen bunches of choice cut flowers, Mr. W. Brock in this instance being a good second. The best twelve *Roses* were staged by Captain Christy, Mrs. Ensor being a good second; and in the local class for twelve *Gladioli* Mr. Dobree was easily first, and Mr. J. Nation second. Mrs. Hart was first for *Asters*, and Lady Bowring second, while the best single and double *Zonal Pelargoniums* were staged by Mr. A. Barnett and Mr. W. H. Dunsford.

There was a good display of fruit, but on this occasion there were no open classes for collections, though the Committee need not have been so conservative, as in all probability the premier prize would not have left the locality this year. The best collection of ten dishes was shown by Mr. B. W. Cleave, who had fine stands of *Black Hamburg* and *Muscat of Alexandria* Grapes, a grand *Queen Pine* weighing 7 lbs. 14 ozs., and which naturally attracted the admiration of the Judges and all who saw it; a good *Sutton's Imperial green-flesh Melon*, *Pine Apple*, *Nectarines*, *Grosse Mignonne* Peaches, and other small fruits in excellent condition; Mrs. Ensor was second. For a collection of six dishes Sir J. Walrond was first, and Sir J. Shelley second, both having creditable collections. General Buller was the only exhibitor of a *Pine Apple*, and received the first prize. Mr. C. D. Cave was first and Sir J. Walrond second for *Black Hamburg*, Mr. C. D. Cave first and Sir G. Stuckey second for *Muscat of Alexandria*, Mr. B. W. Cleave first for *Alicante*, Sir J. Shelley first for *Foster's Seedling*,

Mr. G. P. Penmore first for *Buckland Sweetwater*, and Mr. G. P. Penmore first and Mr. J. Drew second for *Madresfield Court Grapes*, the exhibits in each instance being highly meritorious. Sir Thos. Freake was first and Major W. Porter second for *Peaches*, Mr. T. C. Daniel first and Lord Poltimore second for *Nectarines*, the Rev. T. J. Yarde first and Mr. W. C. Sim second for *green-flesh Melons*, and Mr. Josiah Elliott and General Hamilton second for *scarlet-flesh Melons*, the competition being good throughout. In the other fruit classes the most successful exhibitors were Mr. W. Pope, Mr. B. C. Gidley, Lord Haldon, Mrs. Rowe, Sir J. Shelley, Rev. P. Williams, Colonel Walrond, M.P., Mrs. Harte, and Sir G. Stuckey.

The show of vegetables was remarkably good, the prizes including a Veitch Memorial gold medal and £5 for a collection of twelve kinds of vegetables. Some surprise has been expressed in different quarters that a prize of such a description should be localised, but so it was, the Devonshire men evidently not having sufficient confidence in themselves. The coveted prize was well won by Sir T. D. Acland (J. Garland gardener), whose collection included a good dish of Sutton's Seedling Potato, Intermediate Carrots, Beetroot, immense, we might say very coarse, Veitch's Autumn Giant Cauliflower, Sutton's White Gem Celery, Brussels Sprouts, Cucumbers, and Tomatoes. Mr. J. Drew was second and the Rev. P. L. D. Acland third, each having a fine lot of vegetables. Sir T. D. Acland also won a special prize of £3 offered for twelve kinds of vegetables by Messrs. Lucombe, Pince & Co., Mr. A. Burnett being a good second and Colonel C. A. Troyte third. Prizes were also offered for single dishes of various other kinds of vegetables, and the principal prizewinners were Sir T. D. Acland, Mr. B. W. Cleave, Colonel Courtney, Rev. P. L. D. Acland, Sir J. Shelley, Mr. C. T. D. Acland, Mr. T. C. Daniels, Lord Poltimore, Mr. E. A. Saunders, Rev. T. J. Yarde, and the Rev. H. Clerk.

Among the non-competitive exhibits the most noteworthy was a grand group of plants arranged by the Messrs. Lucombe, Pince & Co. These included large healthy specimens of *Latania borbonica*, *Cocos Weddelliana*, *Kentia Belmoreana*, *Croton Prince of Wales*, *Croton Warreni*, *Allamandas Hendersoni* and *nobilis*, several good *Ericas*, and a variety of other valuable plants. In addition they had several stands of *Dahlias*, *Asters*, and *Roses*. Messrs. Veitch & Son, Exeter, in addition to numerous stands of good *Tuberous Begonias*, *Dahlias*, *Roses*, and herbaceous flowers, had a very pleasing rockwork design very cleverly executed. This mixture of rockwork and plants being altogether new at a horticultural exhibition attracted more than ordinary attention, and we can only add that it was well done as these departures should be, or let alone.

BRIGHTON SHOW.—AUGUST 26TH.

THE Brighton Horticultural Society held their annual summer Show on Wednesday and Thursday last week in the Dome and Corn Exchange, adjoining the Pavilion, where the Show has usually been held on previous occasions. The entries were not quite so numerous as at some preceding shows, but the Exhibition was, nevertheless, a highly satisfactory one, the quality of the plants, flowers, fruits, and vegetables being well represented.

The Corn Exchange was very gay, the majority of the plants and flowers being arranged there either on a central table as end groups, or at the side of the building. Mr. W. Miles, West Brighton, had a particularly tasteful group near the entrance, *Musas*, tall *Palms*, *Ferns*, and *Crotons* being freely employed, with a groundwork of *Coleuses*, *Adiantums*, *Acalyphas*, and miscellaneous plants, chiefly those with ornamental foliage. At the opposite end of the Corn Exchange the group named was well matched by the first-prize collection of twelve fine-foliage plants from Mr. Rann, Handcross Park Gardens, Crawley, which comprised the gigantic and vigorous specimens of *Croton Warreni*, *Davallia Mooreana*, *Fritchardia pacifica*, *Kentia Belmoreana*, and others, for which that Handcross Park is celebrated. The stove and greenhouse plants were arranged on the central table, several classes being devoted to them, and though the plants were of moderate size they were mostly well grown and freely flowered. Mr. E. Meachen, gardener to Mrs. Armstrong, Patcham, had the best eight specimens, each 4 or 5 feet in diameter, even, globular, and bushy examples of *Allamanda nobilis*, *Pimelea decussata*, *Rondeletia speciosa*, *Bougainvillea glabra*, *Allamanda Hendersoni*, and *Erica Eweriana*. Mr. W. Hobden, Hastings, followed, a *Stalice* and *Allamanda* having the best of his half dozen. The same exhibitor was, however, first with four plants, followed by Mr. Rann and Mr. Jupp, gardener to G. Boulton, Esq., Eastbourne, the last named having a grand specimen of *Eucharis grandiflora* with thirty heads of flowers.

In a local class for four stove and greenhouse plants Mr. Jupp and Mr. Townshend, gardener to Capt. Thorapson, were the prize-takers. Messrs. Hobden, Meachen, and Townshend also exhibiting well in the *Pelargonium* classes. The various groups were decidedly interesting features, classes being set apart for *Begonias*, *Coleuses* with *Ferns*, *Ferns*, and miscellaneous plants of the usual type. The groups of *Ferns* were especially admired, owing to their fresh green graceful appearance. Mr. Townshend was a capital first, his group being mainly composed of *Adiantums*, such as *farleyense*, *cuneatum*, and *gracillimum*, very tastefully arranged. Messrs. Jupp and Meachen were second and third with a greater variety of *Ferns* informally disposed, but they did not have such an effective appearance as the first. Mr. J. Turner, gardener to Major Way, Wick Hall, contributed the most elegant group of *Coleuses* and *Ferns*, the surface undulated and very charming. Mr. Jupp had also a bright tasteful group. The *Begonias* were chiefly varieties of the tuberous type, and made a bright display. Mr. F. Rapley, Jevington, Polegate, Mr. Spottiswood, gardener to C. Duddell, Esq., Queen's Park, Mr. R. Pannell, and Mr. Jupp were the successful competitors. The leading group of miscellaneous plants, which was staged by Mr. Turner, consisted principally of *Palms*, yellow and red *Celosias*, *Liliums auratum* and *speciosum*, *Gloxinias*, *Fuchsias*, and small *Crotons*, very pleasingly arranged; Mr. Meachen being second with a rather crowded though bright group, and Mr. Townshend third, the leading feature of which were the plants of *Peristeria elata*.

Cut flowers were principally represented by *Dahlias*, *Asters*, *Roses*, and *Hollyhocks*. Messrs. Keynes & Williams, Salisbury, were the chief exhibitors of show and fancy *Dahlias*, Messrs. Cheal & Son, Crawley, having some handsome stands of single *Dahlia* blooms. A. Slaughter, Esq., Steyning, gained most of the prizes in the amateur classes for *Roses*; Mr. G. W. Piper, Uckfield, securing three first prizes in other classes for *Roses*, *Tea* varieties predominating. Messrs. Webb & Brand, Saffron Walden,

had some fine Hollyhocks, and Mr. Walker, Thame, some beautiful Asters. Mr. Chard of Clapham Common showed well in the bouquet and floral decoration classes, securing the chief prizes; Mr. F. Webber, Tonbridge, was also successful.

FRUIT.—There was good competition in the fruit classes, some excellent samples contributed. Mr. C. Goldsmith, gardener to Mrs. C. A. Hoare, Beckenham, was first for twelve varieties of fruits, Muscat of Alexandria and Black Hamburg, good in bunch and berry and well coloured; Noblesse Peaches, Brown Turkey Figs, Colston Basset Melon, Bellegarde Peaches, Williams' Bon Chrétien Pears, Moorpark Apricots, Plums, and Cherries, all very clean handsome fruits. Mr. Waterman, gardener to H. A. Brasse, Esq., Aylesford, was placed second with Black Hamburg Grapes, rather smaller but of fair colour; Muscat of Alexandria, of medium size; Hero of Lockinge Melon, good; Lord Napier Nectarines, Jefferson Plums, and Morello Cherries, handsome. Mr. Gore, gardener to Capt. Taylor, was third, his best dish being Alnwick Seedling Grapes, good in bunch and colour. Grapes were numerous and of fair quality. Mr. Gore was first with a collection of six varieties, three bunches of each, showing Alnwick Seedling, Mrs. Pearson, Gros Colman, large in berry; Black Hamburg, Muscat of Alexandria, rather green; and Lady Downe's. Mr. Chatfield, gardener to T. Holmesly, Esq., East Hoathly, was second with Buckland Sweetwater, extra fine; Alicante, large but not coloured; Gros Colman and Victoria Hamburg being also wanting in colour. Mr. Waterman was third, Foster's Seedling, Canon Hall Muscat, and Black Hamburg being the best. For six bunches of Muscat of Alexandria Messrs. Goldsmith, Spottiswood, and Chatfield were the prizetakers; Mr. Duncan, gardener to C. T. Lucas, Esq., Warnham Court, being first with three bunches, followed by the two first named exhibitors in the preceding class. Mr. Spottiswood, Mr. Godby, gardener to Dr. W. Moore, Burgess Hill, and Mr. Goldsmith, were prizetakers in that order for six Black Hamburgs; and for three of the same variety, Messrs. Spottiswood, Holston, gardener to R. H. Penney, Esq., Dyke Road, and Inglis, gardener to T. Cunliffe Lester, Esq., Cuckfield, were the successful exhibitors. Melons, Peaches, Nectarines, Plums, Cherries, Green Gages, Apples, and Pears were all shown in considerable numbers, the exhibitors already named taking some of the leading prizes. Vegetables were not quite so abundant, but the premier collection of six sorts from Mr. Waterman was excellent.

The arrangement of the Show was very satisfactory, the courteous secretary, Mr. Edward Carpenter, having had considerable experience in the management of this exhibition.

[Mr. A. J. Brown, The Finches, Lindfield, Sussex, desires us to state that a square wicker basket lent to him for the conveyance of his fruit to the above Show was taken by some exhibitor in mistake, and as it is of special value to the owner, he will be glad if it is returned to the above address.]

SANDY AND DISTRICT HORTICULTURAL SOCIETY.

The eighteenth annual Exhibition of this flourishing Society (which receives the support of 1000 subscribers) was held on Friday last in the beautiful and highly appropriate grounds of J. N. Foster, Esq., Sandy Place, and as the weather and the company were all that could be desired, the horticultural display, which is combined with a poultry show and a large number of allied subjects, such as farm produce, could not fail to command great success, as the well-filled tents testified. This, however, could not have been secured without the harmonious working of an energetic Committee had aided the untiring efforts of the courteous and well-trained Secretary, Mr. W. Green, who has for so many years contributed to the growth and development of the Sandy Show. If grumbling be recognised as part of the duty of a Press correspondent, his work at Sandy this year must be practically a sinecure, the only noticeable difficulty being the limited amount of tent accommodation for the large and greatly extended number of exhibits, which has much exceeded that of former years, and which increase it would not be easy to foresee or provide against. This applies especially to the provision made for plants and cut flowers, which were in consequence hardly seen to best advantage, and doubtless before another show the Committee will recognise the full importance of Sandy Show, and that the liberal prizes of £12, £8, £4, and £3 they offer for a collection of stove and greenhouse plants in the open class will naturally bring good competition and comparatively large plants, which can be more appropriately placed and seen to better advantage on a lower level than when mounted on a massive wooden stage many feet above the heads of the visitors. On this occasion five collections were staged in this class, the plants being generally well-flowered and fine specimens, the first prize falling to Mr. W. Finch, gardener to J. Marriott, Esq., Coventry, whose plants were somewhat larger and better flowered than those of the redoubtable Mr. James Cypher, of the Exotic Nurseries, Cheltenham, who had on this occasion to accept second honours. Mr. Finch had *Lapageria rosea*, *Bongainvillea glabra*, *Stephanotis floribunda*, *Dipladenia amabilis*, *Statice profusa*, *Allamandas nobilis* and *Hendersonii*, *Ixoras japonica*, *floribunda*, and *amabilis*, and *Erica Marnockiana*, all fine and in excellent health. Mr. Cypher had *Phenocoma prolifera* Barnesii, *Aitonia Thunbii*, the remaining plants being chiefly parallel varieties with those of Mr. Finch. Mr. F. Mould, Pewsey, Wilts, was third, and Mr. G. Redman, gardener to J. H. Goodgames, Esq., Eynesbury, Hunts, fourth, and extra Mr. W. Rabbitt, gardener to General Pearson, The Hasells, Sandy. For six foliage plants (open to all except nurserymen) Mr. Redman was first, and Mr. G. Claydon, gardener to J. H. Astell, Esq., Woodbury Hall, St. Neots, second. For twelve Zonal Geraniums (open) Mr. W. Rabbitt first with very brightly coloured and well-grown specimens, his best being *Eva* (soft rosy carmine) and Dr. Orton. Mr. Redman was second with smaller specimens. For six stove and greenhouse Ferns (nurserymen excluded) Mr. Claydon took the lead with very fine specimens of *Adiantum gracilimum*, *grandiceps*, *farleyense*, and *cuneatum*, *Blechnum brasiliense*, and *Gymnogramma chrysophylla*. Mr. Redman was an approximate second. For six Fuchsias in the same division Mr. Rabbitt had remarkably fine specimens, mostly of the older varieties, and was well to the front, and Mr. W. Bourne, Huntingdon Road, Cambridge, second. For six Coleus in the same division Mr. Rabbitt again took the lead with very brightly coloured and well grown plants.

Cut Flowers.—These were largely shown, but from want of adequate table room good stands had in many cases to be relegated to the green-

sward. For forty-eight Roses (open) not less than twenty-four distinct varieties, Messrs. Paul & Son, The Old Nurseries, Cheshunt, were first with blooms hardly so good as usual at this season, their best flowers being A. K. Williams, Nipheto, Madame Berard, Maréchal Niel, Duke of Teck, Madame V. Verdier, Jean Ducher, Ella Gordon (after the style of Mrs. Laxton), Star of Waltham, Marie Verdier, and Ulrich Brunner. Messrs. J. Burrell and Co., Howe House Nurseries, Cambridge, came second with rather smaller blooms of many of the same varieties, Charles Lefebvre and Alphonse Souper being good. For twenty-four Gladiolus (open) Messrs. Burrell, who appear to be assuming the position of successful specialists with these popular flowers, were greatly ahead with remarkably fine spikes and large blooms of the following varieties—viz., Baroness Burdett Coutts, L'Africaine, Rossini, Horace Vernet, L'Unique Violet, Colorado, Shakespeare, Addison, A. Broignart, Amalthée, Pepita, distinct yellow; Mount Etza, Ovid, Colbert, Leander, Condé, Le Perle, Celestine, Leda, Hesperide, and Neride. Mr. E. Atherton of Chatteris followed second with a stand of seedlings, some of which showed promise. Mr. P. Meyer, Orwell, was third. For twenty-four show Dahlias (open) the veteran and champion grower, Mr. H. Glasscock of Bishop's Stortford, had some grand blooms, which gave him the lead. The following were amongst his best—viz., Jas. Ashby, Mrs. Gladstone, Wm. Rawlings, Jas. Service, Ethel Britton, Jas. Green, and Mrs. W. Stack. Mr. R. Petfield, gardener to A. J. Thornhill, Esq., Diddington Grange, Hunts, was a good second, and Messrs. Heath & Son, Cheltenham, third. In the class (nurserymen excluded) for twenty-four Roses, not less than twelve distinct varieties, Mr. E. B. Lindsell, Bearton, Hitchin, was first, Marguerite Brassy, A. K. Williams, Alphonse Souper, and Madame P. Langier were noticeable blooms. The Rev. Dr. King, Madingley, Cambs, was second with a stand consisting chiefly of Teas.

In the same division for twelve show Dahlias, W. H. Apthorp, Esq., Cambridge, had a fine stand, with which he took first honours, his best blooms being Mrs. Gladstone, Bismarck, James Vick, W. Williams, and S. Hibberd; the Rev. E. L. Fellowes, Wimpole Rectory, Croydon, coming a close second.

For six fancy Dahlias, Mr. H. Glasscock was first and Mr. Petfield second. Asters and Marigolds were well and largely shown. For twelve Peony Asters Mr. Redman, for twelve Quilled Mr. Tillbrook, and for twelve Chrysanthemum-flowered Mr. Redman, and for twelve very fine African Marigolds, Mr. G. Taylor, Eynesbury, were respectively first.

Mr. T. S. Ware, of Hale Farm Nurseries, Tottenham, showed (not for competition) some very beautiful single Pompon and decorative Dahlias, set up in his usual tasteful style, including Mrs. Linaker and Amos Perry, recently certificated by the Royal Horticultural Society, and a good stiff-petalled white Duchess of Westminster, all singles, and the charming decorative variety Mrs. Hawkins, which, perhaps, next to Juarezii, is the most distinct and useful of all the doubles not recognised by the florists.

Table decorations have not advanced in recent years at Sandy, and the displays at this Show were singularly mediocre.

FRUIT was hardly up to the usual standard at Sandy, the Grapes with few exceptions not being up in colour and finish. For a collection of eight varieties, Pines excluded (open to all except nurserymen), Mr. Tillbrook, gardener to Bateman Brown, Esq., Houghton, Hunts, was first with good Black Hamburg and Muscat of Alexandria Grapes, Gros Mignonne Peaches, Lord Napier Nectarines, Moorpark Apricots, Jefferson Plums, and Lord Beaconsfield Melon. Mr. Allis, gardener to Jos. Shuttleworth, Esq., Old Warden, was second; and Mr. R. Carter, gardener to Colonel Duncombe, Waresley Park, St. Neots, third. For the collection of six varieties Mr. W. H. Murfin, Great Staughton, Hunts, took the first position. For two bunches Black Hamburg Grapes Mr. Murfin was first, Mr. Tillbrook second, and Mr. G. Warboys, gardener to Mrs. Medland, St. Neots, third. For two bunches any other variety of black Grapes Mr. Jos. Topham, Thorney Park, Peterborough, was first with fine and highly finished Gros Maroc, Mr. Tillbrook second with the same variety, and Mr. Allis third. For two bunches of Muscat of Alexandria Mr. P. D. White, gardener to Captain Stanley, Longstow Hall, Cambs, was first, and Mr. Tillbrook and Mr. Allis equal second. For two bunches of any other variety of white Grapes Mr. Allis was first with Buckland Sweetwater, and Mr. Tillbrook second. For six Peaches Mr. P. Meyer, Orwell, was first, and for six Nectarines Mr. Apthorp. For green-flesh Melon Mr. W. Bourn, Huntingdon Road, Cambridge; and for scarlet-flesh Mr. F. J. Malden, St. Neots.

VEGETABLES were good in quality and large in quantity, and always form one of the striking features at Sandy. For a basket of twelve varieties Mr. Bourn staged very good examples of all the useful sorts, and was fairly first. Mr. Ellis, gardener to — Nixon, Esq., Pemberley, Bedford, was second, and Mr. Vines, gardener to C. Franklin, Esq., Bedford, third. For a basket of six varieties Mr. H. Ridgewell, Cambridge, was first and Mr. G. Johnson, Bedford, a good second. For a collection of Potatoes, six varieties, Mr. Ridgewell was first with very sound and good-looking sorts, consisting of Chancellor (Dean), a fine rough-skinned flat white; Gladstone, flat round white, appearing to be a first-class useful new variety; Adirondack, solid and sound, but somewhat coarse; Beauty of Hebron, Vicar of Laleham, and Mr. Breese. In the market gardeners' class Mr. Ridgewell staged a splendid collection of nearly fifty varieties, all good-looking clean specimens of the most approved sorts, the most striking being Gladstone, Garfield, Champion, Fidler's Prolific, Jos. Riganlt, and Champion. Some very fine Peas were shown by Mr. Waller, gardener to Jas. Howard, Esq., Clapham Park, and others, but the Judges appear to have passed over all the large-podded varieties of the Telephone or Duke of Albany type for less striking sorts of younger growth. Mr. Tillbrook had some very fine white Spanish Onions of the Sandy Prize type, perhaps as good as have ever been shown at Sandy, and was deservedly awarded first in the amateurs' class. The Show appears to have been a most satisfactory one.

SHERBORNE SHOW.—AUGUST 25TH.

THIS popular Dorsetshire Society has been in existence ever since 1862, and it is a very pleasing duty to note that the Exhibition this year was generally considered the best yet held. A considerable improvement was manifested in both the number and quality of the plants exhibited, while the fruit and vegetables, for which the Sherborne meeting is noted throughout a wide tract of country, were also better than usual. Mr. G. F. Stokes is an experienced and very courteous Secretary, and he, with the active

assistance of Mr. W. G. Pragnell and others on the Committee, succeeds in rendering the Exhibition pleasing alike to the competitors and the numerous visitors who patronise it. In addition the beautiful pleasure grounds with a grand lake of water connected with Sherborne Castle, the seat of F. D. Wingfield Digby, Esq., as well as the ruins of the old Castle, near which the Show was held, all served to attract visitors, and in spite of the harvest operations, now going on briskly in this part of the country, the attendance must have been highly satisfactory.

The premier prize in the plant section was offered for an ornamental collection of twelve stove and greenhouse plants in or out of flower, and of these there were only two lots staged. Mr. T. Wilkins, gardener to T. M. Guest, Esq., was easily first, having among others healthy medium sized specimens of *Cycas revoluta*, *Latania borbonica*, *Croton undulatus*, *Acalypha mniscaea*, *Alocasia metallica*, *Pandanus Veitchii*, *Anthurium crystallinum*, and *Phormium tenax variegatum*. Mr. W. Appleby, gardener to T. W. Dampier Bide, Esq., was second, his group including a good *Latania borbonica*, *Croton Weismanni*, and *C. majesticus*. There were three entries in the next class, that for a miscellaneous collection of stove and greenhouse plants, to occupy a space not exceeding 15 feet. Here again Mr. Wilkins was first, having *Croton Weismannii*, *Allamanda Hendersonii*, *Dipladenia boliviensis*, *Caladium*, *Odontoglossums*, *Tuberose*, and various other plants in good condition. Mr. W. Appleby was a good second, his group including several good Palms, *Crotons*, *Dracenas*, and *Orchids*. Mr. Runnacles, Leweston, was placed third with much the evenest and brightest group, but in which there were no large specimen plants; his *Adiantum farleyense* and other Ferns, *Gloriosa superba*, *Dracenas*, *Crotons*, and *Gloxinias* were very creditably shown. Four competed with groups arranged for effect in a half circle occupying a space measuring 12 feet the longest way, and in each instance the display was very creditable to the exhibitors. Mr. Witherington, gardener to Major M'Adam, Greenhill House, was deservedly awarded the first prize, very good taste being displayed in the arrangement of Palms, *Crotons*, *Dracenas*, and other choice plants, interspersed with Maidenhair Fern, and further relieved by a judicious addition of well flowered *Gladioli* in pots. Mr. W. G. Pragnell, Sherborne Castle gardens, took the second prize for a very tasteful arrangement, the front being neatly fringed with pot plants of *Selaginella Kraussiana*, in this respect far excelling the other groups; but gaining here he yet lost with his background, which was both too low and too formal. Mr. Runnacles was third, and an extra was given to Mr. C. Anthony, gardener to T. Moore, Esq., Yeovil. The last named was fortunate in winning the first prize for nine *Fuchsias*, in which class Mr. T. Hannan, gardener to J. E. Whitby, Esq., Yeovil, was third.

The class for twelve Ferns was a very good one, and added much to the beauty of the large tent where the plants generally were staged. Mr. J. Crump, gardener to W. Neal, Esq., Kingsdon, was a good first, his group including fine healthy specimens of *Gymnogramma tartarea*, *G. Laucheana gigantea*, *Neottopteris nidus*, *Microlepia hirta cristata*, *Adiantum cuneatum*, *Asplenium flaccidum*, and *Davallia Mooreana*. Mr. W. Appleby was second, and Mr. Wilkins third, both having several well grown specimens of popular known sorts. Tuberous *Begonias* were staged by several growers, but Mr. G. H. Copp, gardener to J. S. W. E. Drax, Esq., was easily first with fine fresh plants of a good strain. Mr. T. Wilkins was second. There were also classes provided for Balsams, Cockscombs, Coleus, and other plants, in all of which the competition was close and good.

Cut flowers were largely shown by nurserymen, gardeners, and amateurs not employing a regular gardener. Mr. J. Smith, Bristol, was first for twenty-four triplets of Roses, and Mr. G. Campbell, gardener to S. P. Budd, Esq., Bath, second. The best represented sorts were A. K. Williams, Ulrich Brunner, Brightness of Cheshunt, Général Jacqueminot, A. Colomb, Gloire de Dijon, and Charles Lefebvre. Messrs. Keynes, Williams & Co. were easily first with twenty-four Dahlias, some of the best of these being Mrs. Saunders, Mrs. Seaman, Mrs. Langtry, Royal Queen, Illuminator, Mr. Spoforth, Henry Walton, and Shirley Hibberd. Mr. J. Nation was second. Messrs. Keynes, Williams & Co. were also awarded an extra prize for a lovely stand of single Dahlias, among which the most noteworthy were Velvet Mantle, Queen of Whites (one of the best of its class), John Cowan, Beauty of Cambridge, and Negress. Mr. Runnacles had the best twenty-four Asters, and Mr. J. Wheeler was a good second. Only two growers entered *Gladioli*, Mr. S. Tottle, Taunton, taking the first prize, and Mr. J. Nation second. Mr. W. Iggulden, Marston Gardens, Frome, had the choicest cut flowers, and Mr. S. Kidley, gardener to Mrs. Helyar, Coker Court, also exhibited cut flowers successfully.

For the Digby cup, value £5 5s., offered for eight dishes of fruit, there were five competitors. Mr. W. S. Pullman, gardener to R. B. Sheridan, Esq., was well first, having large and well finished Muscat of Alexandria and Black Hamburgh Grapes, good Dymond Peaches, Pine Apple Nectarine, Golden Perfection Melon, and rather poor Green Gage Plums, and Williams' Bon Chrétien Pears. Mr. A. Crossman, gardener to J. Brntton, Esq., Yeovil, was placed second for a generally good lot, the Black Hamburgh Grapes, however, being wanting in finish. Mr. C. H. Perkins, gardener to C. Hambro, Esq., Milton Abbey, took the third prize, his most noteworthy dishes being Buckland Sweetwater Grapes, Crimson Galande Peaches, and Victoria Nectarines; and Mr. J. Lloyd, gardener to Vincent Stuckey, Esq., Langport, had the remaining prize for a creditable all-round collection. Mr. W. G. Pragnell was first for a Pine Apple, and Mr. Brooks second, both having fairly good Smooth Cayennes. Mr. Pullman was easily first in the class for Black Hamburgh Grapes, Mr. T. Horsey, gardener to Colonel Forbes, being second with large, imperfectly finished bunches. In the any other black class Mr. Davidson, gardener to Lord Wolverton, Iwerne Minster, was first with Alicante in good condition; and Mr. Crossman followed with large bunches of the same variety. Mr. Pullman was again first in the class for Muscat of Alexandria, of which he had fine fairly well-coloured bunches; and Mr. W. G. Pragnell was a good second. In the any other white class Mr. Iggulden was first with well-coloured Foster's Seedling, the second prize going to Mr. Davidson for the same variety. T. Paul, Esq., had the best Melon, a small and luscious Hero of Lockinge, and Mr. Crossman was second with a good fruit of the same variety. Mr. Iggulden was first for indoor Peaches, winning with a handsome dish of Crimson Galande, Mr. Pullman being a good second with Early Grosse Mignonne, and first for open-air Peaches, and Mr. C. Perkins second, both having fine

dishes of Hales' Early. Mr. G. R. Daley had the best indoor Nectarines, staging a good dish of Pitmaston Orange, and Mr. Pullman was second with Pine Apple. Mr. C. Perkins was first, and Mr. W. S. Ridley second for Pears, both having good dishes of Jargonelle. There were a fine lot of Plums shown. Mr. Clarke was first in the white class, and Mr. Wilkins second, both having good dishes of Jefferson. Mr. J. Crump was first for Green Gages, and Mr. Pragnell second. The last named took the first prize for dessert and also kitchen Apples, staging respectively Benoni and Lord Suffield in fine condition. Cherries and Currants were also very fine.

Collections of vegetables were very good indeed, not only in the gardeners', but also in the cottagers' tent, the latter having some kinds wonderfully fine. In the gardeners' class for twelve sorts of vegetables, the redoubtable vegetable exhibitor, Mr. W. G. Pragnell, was placed with a collection almost equal to what he has often shown at the autumn shows near London. The varieties were Autumn Giant Cauliflower, Matchless Carrots, Sberborne's Improved Spanish Onion, Veitch's Prodigy Peas, Hathaway's Excelsior Tomato, White Dutch Runner Beans, Snowball Turnips, Manchester Red Celery, Long White Marrows, Lyon Leeks, Reading Russet Potatoes, and Tender and True Cucumbers. Mr. J. H. Copp was a close second, his Grove White Celery, Covent Garden Perfection Potatoes, and Hackwood Park Tomatoes being remarkably fine. Mr. T. Wilkins was a good third. The best eight sorts of vegetables were shown by Mr. A. Philpot, gardener to W. Parsons, Esq., who had very good examples of Ne Plus Ultra Pea, Lady Paget Kidney Potato, Pragnell's Exhibition Beet, Ellacombe's Parsnip, Hathaway's Excelsior Tomato, Autumn Giant Cauliflower, and Williams' Matchless Celery. Mr. C. Bowers, gardener to T. Holford, Esq., was a good second, his dishes of Lyon Leek, Globe Artichokes, and Scarlet Intermediate being very fine. Mr. A. W. Clark, Digby Hotel, was third. Mr. Runnacles was first for a very fine brace of Tender and True Cucumber, and Mr. Copp second with the same variety. There were also classes for Onions, Potatoes, Peas, Beans, and Celery, in all of which the samples numerous shown were very good indeed. The most noteworthy non-competitive exhibit was the bank of Tuberous *Begonias* interspersed with Maidenhair Fern arranged by Mr. B. R. Davis, Yeovil. The strain is a good one, and they were shown in creditable style. Mr. Scott, Merriott, Yeovil, sent a collection of Plums, consisting of twenty-five varieties; of these the best were Red Gage Nectarine, Syston, Washington, Red Magnum Bonum, Black Diamond, Golden Gage, Prince of Wales, and Victoria.

BUTE.

THE annual Show of this Society was held at Rothesay on the 20th August. In the open-to-all class Mr. M. Campbell, nurseryman, High Blantyre, took the first prize for twenty-four Carnations and Picotees (at least twelve varieties). The blooms were very fine, and were—Carnations: H. Matthews, Mrs. Gorton, Mercury, Tim Bobbin, Master Fred, Rose of Stapleford, E. S. Dodwell, Mayor of Nottingham, Ivanhoe, A. Curzon, Tom Chapman, Edward Adams. Picotees—Her Majesty, Louisa, Master Norman, Mrs. Alcroft, Daisy, Nympha, Clara Penson, Miss Wood, Thos. Williams, Morning Star, Beauty of Cheltenham, Thos. Hastier. Second Mr. W. Stewart, Shawlands; third Messrs. J. Cocker & Sons, Aberdeen. Twenty-four Roses, distinct varieties, Messrs. J. Cocker & Sons were first with a very fine stand considering the time of year. The blooms were—Gloire Lyonnaise, Alfred Colomb, A. K. Williams, Baroness Rothschild, La France, Charles Lefebvre, Comte Raimbaud, Duc de Rohan, Duke of Albany, Emilie Hausberg, Etienne Levet, Heinrich Schultheis, Lælia, Charles Crapelet, Gabriel Luizet, Hippolyte Jamain, Isaac Perière, Marie Baumann, Marie Finger, Marguerite De St. Amand, Merveille De Lyon, Pride of Waltham, Senator Vaise, Lady Mary Fitzwilliam. Second Mr. W. Parlane, Row. Twenty-four fancy Pansies.—Mr. M. Campbell took first honours in this class with a splendid stand of blooms—namely, John Gold, Mrs. G. P. Frame, E. Bruce, A. Ashcroft, Mrs. J. Downie, Pilgrim, Catherine Agnes, Wm. Cuthbertson, Princess Beatrice, Mrs. Findlay, May Tate, Miss Bliss, Lord Rosebery, Mrs. S. Sword, Mrs. Goodwin, Endymion, Miss Gladstone, D. Smith, F. M. Bertram, Craigforth, Em. Dalglish, Mrs. S. Wright. Second Mr. W. Stewart; third Mr. A. Irvine, Tighnabruigh. Twelve table prize.—The first prize was won by Mr. D. Waddell, Southpark. Twelve tubers single Dahlia.—Mr. M. Campbell was the only competitor for this prize. In the gardeners' and amateurs' classes the articles do not require special mention. Some of the plants are very fine. Fruit was a very fair show. The vegetables were superior, as mostly all outside vegetables are late this year.

SPECIAL EXHIBITS.—Mr. Wm. Spencer, Montford, arranged a fine table of plants. Mr. M. Campbell three stands of Carnations and Picotees, and one of Pansies, also a very fine stand of twenty-four double Dahlias; the blooms were large and of fine form, the names of them were Champion Rollo, Criterion, Rev. J. B. M. Camm, Gaiety, Mrs. Saunders, Marquis of Lorne, Julia Wyatt, Henry Walton, Henry Bond, Ovid, W. P. Laird, Thos. Hobbs, W. Rawlings, Mrs. Dobbs, Flora Wyatt, Rosetta, Ethel Britten, Miss Annie Melsome, Queen Mab, Mrs. Carter, Mrs. J. Downie, Dewdrop, Lord Chelmsford. This lot was very much admired. Mr. J. G. Paul one stand of twenty-four blooms Fancy Pansies, and forty-eight blooms Show Pansies. Mr. Peter Lyle, Kilbarchan, exhibited six seedling Pansies for the opinion of the Judges; three of them were certificated. Royal Visit, white ground Show Pansy; this was the best bloom Show Pansy at Glasgow Show. Mr. J. Bolton, white ground Show; this was the first-prize seedling white ground Show at Glasgow. The other was a very fine primrose self Show Pansy called Miss E. D. McLaren. Mr. M. Cuthbertson, Rothesay, exhibited a table of plants and cut flowers grown at his nursery at the public park —ALBERT, Glasgow.

OLD AND NEW ROSES.

[A paper by Mr. Joseph H. Bourn, read before the Massachusetts Horticultural Society.]

(Continued from page 188.)

WITH all the beauty which the Rose possesses, we cannot speak of perfection in any one variety, and the fine qualities that are manifest in one season are not likely to be obtained in another; while hindrances to good culture are constantly presenting themselves to the most experienced and best informed. Some varieties will flower only in June; others are

handsome but not fragrant, like Charles Lefebvre and Etienne Levet; the petals of some fade as soon as exposed to a shower, or a strong mid-day sun, like Madame Nachury, and Gloire de Bourg-la-Reine; others do not open well, like Pierre Notting, Empress of India, and La France. Some are slow growers, others have delicate stems. A few are subject to mildew, which spreads and affects others, and should not have a place in the garden, like the Countess of Oxford, Sir Garnet Wolseley, and Caroline de Sansal. Nearly every best Rose that is grown has some defects, and many are somewhat tender, like Marquise de Castellane, Baroness Rothschild, and Eugénie Verdier. The best and most certain means for preservation of Rose trees that have a delicate habit is to give plenty of air and sunshine, the influence of which agents hardens the texture of the wood and renders it impenetrable to insects. The largest intelligence, united with constant vigilance, will reward us annually with only a few flowers which have the requisite qualities of richness and permanency of colours combined with fulness and gracietulness of form and sweet odour.

Autumn flowers, I am inclined to believe, are improved when grown on trees raised from cuttings rather than from the bud or graft; for those that are worked are in an artificial condition, and less able to contend throughout the season with adverse influences than such as carry their sap in continuous currents. The luxuriantly growing wood should be allowed to bear moderately until the time for the late blooms. François Michelin, Fisher Holmes, Monsieur Noman, Marguerite de St. Amand, Victor Verdier, Boieldieu, Annie Wood, and Alfred Colomb are esteemed for large, handsome, late flowers.

When blooming in native wildness and simplicity the Rose is universally admired by the botanist, while it has many attractions to the casual observer; and the wild Roses of our woods and hedges, though of a simple type, are the impersonations of elegance and beauty. They adorn the solitude where they grow; and glancing, half concealed, from their green bowers, must have reminded the pilgrim in the wilderness of home. In connection with the delightful study of botany, our lovers of scientific explorations and of beauty in the field could add attractive graces to our highways and byways by adopting the customs of the Hungarians, among whom the finest kinds of Roses are found blooming in unfrequented places, produced by budding the wild varieties, which the ladies of rank and fashion do in their rambles.

We cannot but decide that the Remontants are of a most heterogeneous character, and that the varieties are so different in their nature as to require varied culture and treatment. Our remarks have had special reference to outdoor growth; but there are some of this class that do not expand their flowers freely in the open air, though beautiful when forced; while others, of rare excellence in the garden, are of little worth for the greenhouse. The Baroness Rothschild, Edouard Morren, Mabel Morrison, Hippolyte Jamain, Madame Gabriel Luizet, Duke of Edinburgh, Magna Chaita, Thomas Mills, Anna de Diebach, Mrs. Harry Turner, and Anna Alexieff, have a healthy habit for forcing, are of pure colours, and of full symmetrical form. Early spring flowers of these and other free-growing varieties are obtained by cutting well-ripened wood from outdoor trees late in the autumn, and grafting upon the Manetti and other stocks, which have plenty of fibres to gather food for their support in December. The cultivation of this class by artificial means has been yearly increasing to meet the demand for these sweet reminders of our summer time. They are called by florists, in the winter, fancy Roses, and produce sparingly flowers of surpassing elegance, which command large prices, on account of the demand for them and the extra care requisite to produce good specimens. Attention is now being given to these beautiful but costly dainties of Nature in your vicinity, and distinguished success has been obtained by your honoured President, and others, producing better flowers than are grown from like varieties in the open air.

The arrangement of Roses cut from the tree is a matter of taste, in regard to which there does not exist a unanimity of sentiment, else we should be wearied with a continued sameness. But there are certain fixed laws that regulate the decorative art in flowers. Too many blooms are used for single baskets and bouquets, where they are crowded together promiscuously, exhibiting a mass of petals, the form and colouring of each separate flower being indistinct, with little of its own foliage to render the proper effect. The more nearly Roses are shown as they naturally grow the better effect they produce. The stiff, artificial stem, without the leaf of the flower, propped up by Smilax, Ferns, and other green than its own, is not like nature. Hand bouquets of Roses and buds are more beautiful when made of the same variety with its own foliage, stems long and loosely bunched, having a small number, well chosen, of sweet odour. A collection in basket form, or for parlour decoration, had better lack a flower than have one too many, the object being to form a graceful, refreshing, and suggestive picture, preserving an "easy negligence mixed with art." Show each bloom separately, reposing in its own green, and remember that a few colours have a prettier effect than many. If a combination is thought to be desirable, red, white, and buff are pleasing. The beauty of Roses is much impaired when they are displayed in masses. As a rule, if there are to be many flowers, use the delicate shades; if few, the deeper tones; and we should not forget that large and choice Roses are always most effective when displayed in standards proper for their reception as single specimens.

(To be continued.)

SUMMER AND AUTUMN EXHIBITIONS.

In the following list are given the dates of the principal shows to be held up to November 10th of this year, and we shall be obliged if the

Secretaries of Societies holding shows during the season named will forward us their schedules.

SEPTEMBER.

- 3rd, Friday.—Crystal Palace, Fruit and Dahlias.
- 7th, Tuesday.—Royal Horticultural Society, Committees; Fruit and Dahlia Show.
- 8th, Wednesday.—Edinburgh.
- 8th, Wednesday.—Glasgow.
- 9th, Thursday.—National Chrysanthemum Society, Early Chrysanthemums, Westminster Aquarium.
- 21st, Tuesday.—Royal Horticultural Society, Committees.

OCTOBER.

- 6th, Wednesday.—Crystal Palace, Fruit Show.
- 12th, Tuesday.—Royal Horticultural Society, Committees and Hardy Fruits.
- 13th, Wednesday.—National Chrysanthemum Society, Floral Committee.
- 26th, Tuesday.—Royal Horticultural Society, Committees, and Chrysanthemum Show.

NOVEMBER.

- 2nd, Tuesday.—Ealing.
- 3rd, Wednesday.—Havant.
- 4th, Thursday.—Twickenham.
- 4th, Thursday.—Stoke Newington.
- 5th, Friday.—Crystal Palace.
- 8th, Monday.—Surrey Chrysanthemum Society.
- 8th, Monday.—Lambeth.
- 9th, Tuesday.—Kingston.
- 9th, Tuesday.—Southampton.
- 9th, Tuesday.—Royal Horticultural Society, Committees.
- 10th, Wednesday.—Croydon.
- 10th, Wednesday.—National Chrysanthemum Society, Westminster Aquarium.



HARDY FRUIT GARDEN.

Now is the time when insects do most harm to fruit. To preserve it upon the trees as long as possible Nottingham netting should be put over the trees, and care taken that the covering is so well put on as to quite exclude all winged insects. To do this well and to preserve the nets, bind the edges of the netting with broad tape, to which sew small brass rings, by means of which it may be put upon a wall quickly, or fastened to wooden frames over trees or bushes in the open garden.

A large, airy, cool fruit-room is now of much value to retard the ripening of fruit and to preserve it in good condition after it is ripe. Let all fruit be gathered carefully, without being bruised, or even rubbed more than can be helped. Gather no fruit prematurely; this remark applies especially to Pears and Apples, if we would have fruit in perfection. The Pear season has begun, and we must now devote enough time daily to an inspection of the fruit upon the trees, and take care to remove the fruit gradually as it becomes ready. Such care is well repaid by excellence of flavour and the length of time that it is found possible to have good fruit of favourite sorts. A week or two of fine hot weather now will do much for a full development of flavour, and we may hope for a development of aroma in Apples in some degree approaching that of American fruit. Early Peaches have been deficient in flavour, as was to be expected from the prevalence of cold wet weather as the fruit ripened. Apricots, too, though plentiful, have not had the full rich flavour which renders the golden fruit such a general favourite.

If dry weather continues, let fruit borders have a thorough soaking with sewage or water after the fruit is all gathered from the trees. Such waterings tend materially to help the formation of full, plump buds, and consequently do something to help the crop of next year. Some exhaustion must necessarily attend the production of a full crop of fruit, and we should do all we can to restore the trees to full vigour. Do not waste space on sickly exhausted fruit trees, but mark such now for removal, and make the necessary arrangements for planting other trees early in autumn. Keep young Strawberry beds well watered, keep down weeds, and try and get the plants as strong as possible this autumn, in view of obtaining a half crop of fine early fruit next season before that upon the older plants ripens.

FRUIT FORCING.

VINES.—*Earliest House.*—The earliest-forced Vines should be pruned without much further delay. It is not necessary to wait till all the leaves have fallen before pruning, only the wood must be brown and hard and the leaves turning yellow. The pruning will cause the Vines to rest more quickly and thoroughly. It is also important that the house be thoroughly cleaned and the Vines also. The Vines should only have the loose bark removed, washing the rods with clear warm water, and afterwards with a solution of soft soap, 8 ozs. to the gallon of water. If there be any scale or mealy bug add a wineglassful of petroleum and half an ounce of soda to the soapy solution, and keep it well mixed whilst being applied with a brush, care being taken to reach every hole, angle, and

crevice. Prior to this the woodwork should have been cleansed with soap and water, the glass with clear water, and the walls limewashed. Clear the borders both inside and outside of the old mulching material and the loose surface soil, and have a top-dressing of turfy loam with about a twentieth part each of bonemeal and wood ashes incorporated. Any weakly Vines or those in an unsatisfactory state may be improved by removing the soil down to the roots and supplying fresh turfy loam with an admixture of a sixth of old mortar rubbish and a twentieth part of half-inch bones, and a similar proportion of wood ashes, lifting any roots available for the purpose, and laying them out in fresh material not more distant from the surface than 6 inches. This is best done before the fall of the leaf. It is a mistake to allow Vines to become very dry at the roots, and comparative dryness is desirable, yet allowing the soil to get dust dry is highly injurious, as the young roots are much weakened if not destroyed. The borders : Outside borders should have a covering of some kind to protect them from the heavy autumn rains, which reduce the temperature considerably. Glass lights are much the best, as they throw off heavy rains whilst allowing the sun heat to warm the soil. These not being available, and they need only be used in the case of heavy cold rains, a covering of leaves and litter will be necessary after the weather sets in cold. If the lights have been removed they may remain off until heavy rain comes, when they should be replaced, ventilation being given to the fullest extent. It is well, however, to insure a thorough moistening of the inside border down to the drainage before replacing them.

Vines in Pots for Early Forcing.—Those intended to be started early in November should now be completely at rest, the wood thoroughly ripe, the laterals cut close home, and the cane shortened to about 6 feet—more or less according to the situation of the plump eyes. The cuts must be at once dressed with styptic or knotting to prevent further trouble from bleeding, but keeping the soil rather dry at the roots of the Vines will reduce the tendency to bleeding. It is a mistake, however, to allow the soil to get dust dry. Keep them in a cool airy house. Later Vines in pots may be placed outdoors to harden the growth and induce rest, the south side of a wall or fence being preferable.

Late Grapes.—Continue a night temperature of 70° to 75° and 80° to 85° by day, until the Grapes are thoroughly ripe, ventilating freely and keeping lateral growths closely stopped, a warm dry atmosphere with a free circulation of air being essential to good finish ; laterals allowed to grow only excite root-action, and consequently encourage late growth. Prepare for covering the borders, for late Grapes keep much better when the roots are not chilled by the autumn rains ; therefore tarpauling, shutters, or thatched hurdles can be used when required.

Young Vines.—Those that have made a strong growth are late in ripening, and should be assisted with fire heat, maintaining a minimum of 65° and a maximum of 75° from fire heat, running up to 85° to 90° from sun heat, accompanying the artificial heat with a little top and bottom ventilation so as to insure a circulation, increasing it proportionately with the sun heat.

CUCUMBERS.—Shorter days necessitate closing the house earlier, also syringing earlier, so as to have the foliage fairly dry before dusk. Fire heat will also be necessary to maintain a temperature of 70° to 75° by artificial means, falling 5°, or to 65° through the night. Keep the growths fairly thin, removing old shoots so as to make room for young ones, and so keep up a succession of bearing wood. Stop them a joint beyond the fruit. Encourage root-action by a steady bottom heat of 80°, surface dressings of lumpy loam and sweetened horse droppings, and afford liquid manure in a tepid state whenever water is required. Do not allow the fruit to hang after it becomes fit for use, and avoid overcropping.

Autumn Fruiters.—Afford every encouragement to these, stopping so as to insure an even spread of bearing wood. Remove the first fruits, also the male blossoms and tendrils. No shading will now be necessary. Avoid syringing in the morning, and only use the syringe on bright afternoons, and then early and lightly, keeping the house damped as occasion requires. Admit air in moderation ; draughts must be avoided, as they chill and stunt the growths, and if no air is given the foliage becomes very thin and flabby when kept close, moist, and warm. Seek to ensure a sturdy thoroughly solidified growth by early and judicious ventilation whilst opportunity offers.

Winter Fruiters.—Seed having been sown early in August the plants will now be fit to place out. The house must be a light one, and have means of securing a temperature of 70° to 75° in all weathers, also of securing a bottom heat of 80° to 90°. The first consideration is to thoroughly cleanse the house ; all soil previously used must be cleared out, and the whole of the interior scalded, if possible, with boiling water, the woodwork washed with softsoap, water, and a brush, the glass washed clean inside and out with water only, the walls lime-washed, and everything put into thorough repair. If rubble is used about and over the pipes for bottom heat, see that the material is clean, and if not, take it out, clean it by washing. Secure the drainage with a layer of turves grass side downwards. Put in hillocks or ridges of about 2 feet base, and 10 to 12 inches depth, and 1 foot across at top. Turfy loam laid up until the grass is killed, chopped up rather roughly two-thirds, fibrous sandy peat one-third chopped or torn up, rejecting any woody matter, old mortar rubbish freed of laths and other pieces of wood, the rough broken small one-sixth, charcoal broken so as to pass an inch sieve one-sixth, the whole thoroughly incorporated. The compost should be neither wet nor dry, and only made moderately firm. This material is equally suitable for plants in pots or boxes, which should be well drained, and only so far filled with soil that when the plants are introduced their seed leaves will be about level with the rim of the pots and as they will have some stem below the seed leaves, this will admit of earthing as the plants increase in

growth. Very useful fruit can be had from plants in pots or boxes in houses with a stove temperature. A quart of soot or any of the advertised fertilisers may be added to every bushel of the loam. Plant when the soil is warmed through, press the soil gently, and secure the plants by stakes reaching to the trellis. Rub off the laterals to that height, and stop the leading shoot at about the second or third wire of the trellis. Shade from bright sun until established. Syringe lightly in the early afternoon, damp in the morning, noon, and afternoon. Keep a day temperature of 70° to 75°, raising 10° to 15° from sun heat, and a night temperature of 70°, falling 5° through the night. Plants from seed sown early in August will give fruit in late autumn, but they must not be cropped much if they are to give a plentiful supply of fruit from Christmas to spring.

Sow early in this month, September, for raising plants to give a supply of fruit at Christmas and onward. Telegraph is one of the best, but it is being much confounded with other varieties by cross-breeding, that a true stock of the original Rollisson's variety is not always secured. The seed is best sown singly in large 60-pots a little more than half filled with soil, and covered half an inch deep. Keep them well up to the glass, earth up as the plants grow, and transfer to 48's when they need a shift, placing a stick to each, to which secure the plant as it advances. Rub off laterals as they show, training with a single shoot. They will be fit to plant during the first fortnight of October.

Pits and Frames.—The growth in these will need to be kept thin as a safeguard against damp, and watering must be done early and judiciously, as damp and cold make short work of Cucumbers at this season. At closing time a light sprinkling may be given overhead, but it will not be much needed after this, or very little water, the plants getting enough moisture through the decay of the fermenting beds. The beds must be lined with stable litter, and a little air should be given at back to allow of any steam escaping. The temperature should be kept at about 65° at night. Employ a covering of mats over the lights on cold nights. With care Cucumbers will be obtained from these structures for many weeks to come.

STRAWBERRIES IN POTS.—Runners were not in some cases very accommodating this year ; they were late in forming from the lateness of the season, and retarded by the dry weather. Any not yet in their large pots should be attended without delay, the plants being given 5 or 6-inch pots will fill them before winter, and, though not so large as those potted earlier, will give some fine fruit. Plants potted some time ago should be examined, and if making side buds these should be removed with a piece of hard wood so as to throw the vigour into the central crown or bud. If the plants grow vigorously liquid manure will not be necessary, but those that are weakly should be supplied with it twice a week. Remove all runners as they appear, and loosen the surface of the soil especially round the sides of the pots, so as to ensure the more thorough moistening of the ball. As the plants grow, increase in foliage, set the pots wider apart. If red spider attack hold the plants separately inverted with one hand, and dust the under side of the leaves with the other with soot from a dredger, or apply softsoap solution, 2 ozs to a gallon, with a brush or sponge, to the under side of the leaves.

PLANT HOUSES.

LILYUM.—If the bulbs of *L. candidum* has not been potted for next season's forcing, it should be done without further delay. Directly the flowers fade this variety recommences growing, and in a short time pushes up foliage from the base. Strong flowering bulbs may be lifted from the borders and placed in 6 or 7-inch pots, according to their size, and then placed outside until the approach of frost. If a cold frame can be given them they will advance more rapidly and require less forcing to bring them into flower afterwards ; the soil is also less liable to become saturated by heavy rains. This variety will do well in any good fertile loam with a little sand added, and about one-seventh of decayed manure.

LILIUM AURATUM.—Imported bulbs of this beautiful but uncertain Lily can now be obtained and should be potted at once, then a good quantity of roots will be formed before winter. It is a good plan to lay them in sand or cocoa-nut fibre refuse for a few weeks after they arrive until it can be ascertained which of the scales are liable to decay. It is necessary to remove all decaying portions before they are potted. It is a good plan to allow the bulbs to remain in the fibre or sand until roots have been emitted from the base. Some care is essential in potting them when in this stage, or the tender fleshy roots will be broken. Pots the same size as advised for *L. candidum* will be suitable for this Lily. The pots should be well drained, and a good dash of coarse sand placed at the base of each bulb and the top slightly covered with soil. After potting no water will be needed if the soil is in a satisfactory state at starting. Place the pots in a cold frame, and cover with ashes or fibre until they commence growing from the centre of the bulb. Those that have been flowering in pots and are healthy should be placed in slightly larger pots. It is a great mistake to delay potting until later in the season, and then destroy a large quantity of roots by reducing the ball so as to place them in the same size pots in which they have been growing. Loose soil from the surface or about the roots that can be removed without breaking them may safely be done. These, after potting, must be plunged in cold frames, and the surface covered to prevent evaporation. This will keep the soil in a suitable condition for moisture, and the roots will make much better progress than if the pots are stood on the surface and watering resorted to. Pot this Lily in two-thirds good loam to one of leaf mould or peat, with sand added and one-seventh of decayed manure.

Lilium Harrisii.—Bulbs of this Lily are now being offered at a much cheaper rate than previously, and larger quantities in consequence will

be grown. This is unquestionably the finest of all dwarf Liliaceae, and is most effective for decoration in 4 and 5-inch pots. Its large pure white trumpet-shaped flowers are shown to great advantage when the plants are elevated in groups of flowering and foliage plants. This is easily grown, and is certain to do well if given the same soil and treatment after potting as advised for *L. auratum*. Plants already established in pots may be potted without delay and placed under cover in a cold frame until they commence growing freely, which will be in autumn.

Roman Hyacinths.—Pot these at intervals of a month until the end of October. When the plants are required for various forms of decoration 5-inch pots are the most suitable, five bulbs being placed in each. If required only for cutting the bulbs may be packed thickly together in pans or boxes. After potting plunge the pots outside for six weeks and cover with about 4 inches depth of coal ashes. A few of French Rose may also be potted, as the flowers are useful for cutting.

Narcissus.—Paper White and Double Roman may also be potted, but these should be placed in 6-inch pots. Neither of these varieties is of much decorative value in pots, for the foliage is rather straggling, but the flowers are most useful in autumn for cutting. As many bulbs as possible should be placed into the pots used, and then plunged outside the same as the Roman Hyacinths.

Border Varieties.—Such varieties as *N. Horsfieldi* and others are most beautiful in pots. These can be obtained now and potted, or they may be lifted from the open borders. If the latter the roots should be lifted at once, for they root quickly in the ground at this season of the year. To lift them after root-action has well commenced does not appear to do them harm, but it is advisable to lift them before they are too far advanced.

Tulips.—Early Duc Van Thol Tulips can now be had, and should be placed thickly together in pans and boxes. This is a much better plan than placing them in small pots, for early in the season they flower irregularly, and seldom good even pots of bloom can be had; but when placed together in pans and boxes good pots can be made up by selecting those that will open their flowers at the same time. White Pottebakker is the best and earliest of all the whitesingle Tulips, and should be grown in quantity for early forcing. It is as early as the Duc Van Thol varieties; in fact, the scarlet variety only is worth growing. For an early yellow no better than Canary Bird can be had. These are also placed thickly together in boxes. The whole of the bulbs enumerated above do well in a mixture of good loam two parts, one part leaf mould, and one-seventh of decayed manure, with a liberal dash of sand added. One 6-inch potful of soot may also be added to each barrowful of soil.

THE FLOWER GARDEN AND PLEASURE GROUND.

Propagating Bedding Plants.—In many instances the beds were not well filled so early as usual, and the work of propagating a stock for next season will also be necessarily later. The more systematic gardeners have already decided how they shall plant the beds next summer, and they propagate the varieties in quantity accordingly. Others, the majority probably, have their favourite sorts, and of these they strike as many as they possibly can, either now or in the spring, as the case may be. It is always best to have plenty, more than are wanted in fact, but on the other hand overcrowding the cuttings is apt to lead to wholesale losses, and the aim always should be to winter as many sturdy plants as possible.

Zonal Pelargoniums.—These are still the most popular bedders, though Tuberous Begonias are fast taking their place in many gardens. No time should be lost in putting in as many cuttings as can be taken without disfiguring the beds. They are very sappy, and it is advisable to lay them in full sunshine for a few hours after they are made, this serving to heal the wound and also to rob them of much moisture. They ought at once to be placed under glass, preferably pits or garden frames, and be kept rather dry until they are commencing to root. Taken off in August they might with advantage have been stood in an open sunny spot, but in September we usually get cold rains, and if the boxes become saturated not many of the cuttings will grow. The more robust green-foliaged sorts do well in well drained boxes filled with light sandy soil, but the choicer silver, variegated, golden, and bronze tricolors can be most safely wintered in well drained pots stood on sunny shelves in vineries, green-houses, or other cool houses. We place about four cuttings in a 4-inch pot, and six, seven in 6-inch pots, and rarely lose any of them.

Verbenas.—Fewer of these are grown than formerly, simply owing to so many cultivators being unable to winter a sufficient number of healthy stock plants. Too much fire heat is a frequent cause of failure, and since houses are become so plentiful Verbenas have lost ground. At one time they were kept healthy and clean in ordinary garden frames, and many a gardener in charge of a small place has supplied his more favoured neighbours with cuttings in the spring. Cuttings should be rooted as early as possible, or not later than the middle of September, and then they become sufficiently strong to survive the winter without any coddling. It is always a good plan to keep a few stock plants in the kitchen garden, and here they can be well attended and prevented from flowering if need be. Under this treatment they produce abundance of sturdy yet not too wiry cuttings, very different from the mildewed and perhaps insect-infested cuttings obtained from the impoverished flower beds. When the cuttings are procured in August they will strike readily in a cold frame, this being kept close and shaded from bright sunshine. At the present time it is advisable to put them in a frame over a nearly spent hotbed, keeping them close, if there are no signs of damping off till they are rooted, after which they ought to have plenty of air in order to prevent weakly growth. Five or six cuttings round the side and one in the middle of a 5-inch pot filled with fairly rich sandy soil, or about the same thickness in pans are quite enough, the preference being given

to young flowerless shoots for making into cuttings. Under liberal treatment Verbenas well repay for any extra trouble taken in their propagation, and they need not be planted as thickly as most other bedding plants.

Lobelias.—The strains of bedding Lobelias now supplied by all respectable seedsmen are usually so good that there is much less need of wintering a number of old plants for furnishing cuttings or divisions in the spring. For small, neat beds, however, we still prefer dwarf, showy named sorts, such as *Pumila magnifica*, Emperor William, and Brighton. Plants that are now full of flower are not suitable for lifting and storing, and our plan is to plant the requisite number in the kitchen garden; these being prevented from flowering are full of healthy growth and are safely lifted any time before severe frosts are experienced. Those who are able to lift plants of that description must avoid wintering them in a dry heated house, as they thrive much better in cool pits or frames, care being taken to keep them dry overhead and to keep all decaying portions picked off. We prefer to winter them thinly in boxes of good soil, and plants thus treated can in the spring be split up in innumerable pieces already rooted.

Antirrhinums and Pentstemons.—Cuttings of any sorts worth perpetuating should now be slipped off and struck in a close frame or hand-light. When well rooted they can be potted or boxed off, and wintered in a cold frame or pit. They will, if given plenty of room, form strong stocky plants ready for bedding out in April, and will produce strong flower spikes during the summer.

Sowing Hardy Annuals.—There are a few of these suitable for winter or spring bedding that may yet be sown. These include *Calandrinias*, *Candytuft*, *Collinsias*, *Lathenia californica*, *Limnanthes Douglassii*, *Nemophila insignis*, *Saponaria calabrica*, *Virginia Stock*, and *Venus's Looking Glass*. A warm, light border is the best position, and if the seed is sown in shallow moistened drills it will germinate quickly. It should be sown thinly, and the plants can then be eventually transplanted with a trowel. If the seedling *Saponarias* and *Myosotis* are at all crowded they should be thinned out before they spoil each other, and the thinnings pricked out if need be. The same remarks apply to the Stocks, Wallflowers, *Campannas*, and other plants that were sown early in the year.

THE BEE-KEEPER.

COMB FOUNDATION.

THE advantages of using comb foundation, even if they are not so great as many suppose, are not inconsiderable, for by using it we can entirely eliminate drone cells instead of being compelled to look quietly on while some thousands of drones are being reared, and afterwards taking measures to destroy them, thus causing a waste of energy and sacrifice of profit without any commensurate gain. It must not be inferred, however, from this that drones are an unmitigated nuisance in a stock, for their presence, even when no increase is desired, seems to act as a stimulant to greater exertion than when they are altogether absent. The use of drones is, to my mind, unquestionable, and even when their number is greater than desirable, they still, without any effort, perform a most useful function in the stock; not that they are more serviceable than the same number of workers, but that being there the labour of rearing and attending to their wants having been expended, it is a waste of forces to kill them, because they are by nature unfitted for labour in the fields. It is but seldom that drones leave the hive, and while they stay within they must add considerably to the temperature, and thereby allow a much greater number of workers to go to the flowers than if no drones were present to maintain the heat necessary for the brood and eggs. They are an evil, but not an unmitigated one. Their presence in small numbers is beneficial, and if they have been allowed to come into the world in large numbers their services are sufficient to more than repay the bee-keeper for the honey which they consume. If a few are desired, or if their entire absence is preferred, the use of foundation will in either case enable the bee-keeper to attain his object. It has been said that one way to prevent the issue of swarms is not only to cut out all queen cells, but also the drone cells, but it is if they are determined to swarm quite as easy to rear drones as queens, in spite of all the efforts of the bee-keeper to the contrary. Once bees have made up their minds to swarm it is better, and far more profitable, to allow the increase than to waste time and lose honey by combating the instinct of self-perpetuation implanted in every living creature. It cannot be

too well remembered that the desire must be repressed by keeping young fertile queens at the head of every stock, and room well in advance of its requirements, thus taking away the desire by the removal of the necessity, not creating the desire and then repressing it.

The economy of using foundation can hardly be ascertained until proof can be adduced of the amount of honey or syrup required for the production of one pound of wax. The common estimate of 20 lbs. is far too high, and a very common error is that in making experiments with a view to clearing up this most interesting point, no notice is apparently taken of the influence of the weather and the strength of the swarm on wax-production. At present no opportunity has offered to make an experiment, but "A Lanarkshire Bee-keeper" has evidently an intention of endeavouring to settle the point, and it will then be possible to say whether any saving is effected by the use of foundation in the brood nest. Of one thing I am assured, and that is, that given two swarms, the one on full sheets of foundation, the other on starters only, the former fed for a day or two, the latter with 12 lbs. of syrup costing 1s., the latter will, other things being equal, be found at the end of the honey season to show the best result. It is needless to add that the 12 lbs. of syrup must be given with care and judgment, or some of it may be stored instead of being used for comb-building and the feeding of brood alone.

In supers the foundation must be of the very finest quality, or the use of it is simply ruinous, and even then a midrib occasionally spoils a lovely piece of comb. If the presence of this midrib cannot be avoided starters only must be used, and time will be lost and profit as a natural sequence. The reason of this midrib being left is that the bees, instead of building "of" the foundation, build "on" it. The honey is coming in so quickly that cells have to be formed for its reception, and apparently it is more easy at such time to use the foundation as a base for cells than to use up the wax entirely in the construction of the cells. Now this can be avoided by the "piling" plan, for the supers being continually added always give the bees a chance, of which they gladly avail themselves, to draw out the cells before the actual glut or height of the season, so that when such time comes, instead of wasting precious hours in wax-production at the most critical season, a greater number of workers are available for field labour than is the case where no such system is adopted. The vast amount of honey gathered in a few days of fine weather can only be realised by those who have a sufficiency of empty cells to receive it. When the cells have to be built the time is gliding away, and when they are completed a sudden change in the weather may cause an entire or partial cessation in the honey flow, with the result that the weight taken from a stock is far less than might have been obtained if empty cells had been in readiness just when required. If preferred empty combs given in the body hive and left until sealed and then extracted, give the same result; but as extracted is of less market value than comb honey, it is hardly desirable to produce comb honey in a body box in an unsaleable form when the whitest of comb can be as easily obtained in the form realising the highest price in the market.

If foundation is used in supers the quality must be beyond question, and it should be so given that it may be all worked out ready for the period when honey comes in most freely. Less will then be heard about the most objectionable midrib, and the super will be beyond reproach. To have comb honey and not to be certain that the comb is sweet and good in all its parts is a sorry position for any bee-keeper to be placed in, and a false one. If quality must be sacrificed to quantity it will be wiser to eschew the latter and court the former; and it is not matter of doubt that where starters only are used in supers loss in quantity is occasioned, but of certainty; for no assistance can be otherwise rendered, and the bees must be left to their unaided resources.

By bad management helps may be turned into hindrances and profit into loss.—FELIX.

NOTES ON BEES.

CONDEMNED BEES.

WHEREVER there is a surplus of bees not required for stocks, the best plan is to place them into empty straw or frame hives fitted with foundation, and feed until as many worker combs are made as will be of service for next year, utilising those with brood in them for strengthening stocks. If syrup is stored in any, these placed in an under storey will soon be cleared. When that is done, they should be removed to the store room, kept clean and dry. All feeding should be past in September, and that should be cautiously and judiciously gone about, so that robbing is not incited through exposure or spilling it. Under feeders not emptied during the night should be removed early in the morning, and all top feeders should be covered, so that no smell can attract bees.

HIVES.

Bee-keepers should note their experience with hives under their care, such as faults, and where and how these can be remedied or improvements made; also the disadvantages in all the phases of manipulation and moving about; in short, to weigh everything well and make the desired improvements. I have made these remarks advisedly, because of the many defective hives that are in use at the present time, which do not meet the requirements of bee-keepers and are at the best disappointing. The much-abused and despised hive of my earlier bee-keeping days, and still my favourite one, has as if by magic become the favourite both in Great Britain and on the Continent. I have so often pointed out the qualities and properties a hive should possess, that to say more on these points at the present would perhaps be superfluous; I shall therefore confine myself to the frame or frames of the hive. Wherever I have seen bees, they work their combs to a standard distance of $1\frac{1}{2}$ inch from centre to centre. This rule in Nature must be obvious to the merest tyro, and should convince him that frames should be made so that that distance is strictly preserved in all hives. Yet how often do we see that law violated! It is a well-known fact that bees, too, storing their honey at the top occupy at least $1\frac{1}{4}$ inch as a foundation. One would think that this important point, and one necessary for the safety of the hive, should not be violated, but the full breadth given on top bar for a sure foundation for the bees to build upon. Yet how seldom is that done. I have seen many hundreds of hives this year, and few of them have their top bars broader than a little more than half what is required, not speaking of the inconvenience of exposing so much of the top of the hive and the operator to the fury of the bees when uncovered. The narrowness, together with the thinness at three-eighths of an inch, is not sufficient to support well-filled frames of honey, and the slightest pressure on the top is sufficient to cause the comb to collapse, while the flimsy under-rail of one eighth thick is of no use whatever.

I have frequently asked the question, What is the virtue or property of these narrow and flimsy standard frames, which are so unsuitable for hives? The question was answered once only, which was to the effect that by having narrow top bars brood was reared to the very top. Even if that had been the case, was there anything more absurd and contrary to the nature of the bee than allowing it or perpetuating such management? The very fact that brood appeared to the top of the frame suggested both the fault and the remedy, which was, the hive is too small. In the case of a hive having broad top bars, if too small and the bees are short of provisions, brood will be brought forth in the uppermost cells the same as if they were the narrow and flimsy top bar of the standard frame. The first feature of importance which a common straw hive should possess is a strong crown. Wooden hives must be the same. So long as such frames are recommended they will find their way into apiaries and annoy the bee-keeper. But there is a remedy. Appoint judges of experience and just as the B.B.K.A. examines bee-keepers by questions so as to pass for experts, let the judges ask the owners of the exhibits to perform in their presence all the manipulations necessary and which is required in bee-keeping. By acting so, the exhibitor becomes in reality judge of his own hive, and if he failed to perform any operation satisfactorily, then it is his own fault and not that of the judge that he loses the prize. At the Caledonian Apian Society Show held at Dumfries this year, in a class where upwards of a dozen competed, there were only three hives properly adapted for bee-keeping. Where prizes are offered for hives or other things restricted to a price, I think it would be fair to examine them thoroughly, so that no miscarriage of justice be made by awarding a prize to a hive that could not be made at double the price, as is the case with a large per-centage of hives shown. Other points of the hive I

may take up again, but sufficient has been said on the subject at present.—A LANARKSHIRE BEE-KEEPER.

REMOVING UNSATISFACTORY COMB.

I AM very thankful for the advice you have given me concerning the bees. Would it be best to take away the bars (there are eight altogether), hive fresh with foundation and feed, or only take half away each time? I thought by taking all away they may not go on so well as by taking them away gradually, but whichever you think best I will do.

I am sorry I cannot give much information about the bees, for I was not aware there were any dead larvae until it was pointed out to me just previous to my writing to you. I have never used tobacco to smoke bees with, but use corduroy, never on the bars, but usually give two or three puffs at the entrance previous to opening the hive from Clark's smoker. The hot weather warped the floor-board 1-16th of an inch. I covered it with brown paper and paste as soon as I noticed it, but cannot say how long it was open. They may have been short of food in the spring, but I did not think they were very short.—R. C.

[Remove all the combs at once, then give new frames fitted with foundation made from genuine wax. Keep the frames $1\frac{1}{2}$ inch from centre to centre, neither more nor less. The piece of comb you sent is thin, and it appears as if you were acting according to the instructions of those who advise keeping brood frames much less from centre to centre than is natural. However, the state of the comb sent and the fact of the bees dying are so peculiar that it would be not only interesting but instructive if we had all the particulars regarding the state and management of the hive. "Chloric dropsical fever" is the only disease we have experienced of which bees die and remain inside the hive during autumn and summer.]

TRADE CATALOGUES RECEIVED.

Barr & Son, 12, King Street, Covent Garden.—*Catalogue of Daffodils (illustrated).*

William Bull, 536, King's Road, Chelsea.—*Catalogue of Bulbs and Tuberous Plants.*



All correspondence should be directed either to "THE EDITOR" or to "THE PUBLISHER." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

Books (G. W.).—We do not know of a work on growing and harvesting vegetable seeds. Hibberd's "Kitchen Gardening" (Groombridge), and Earley's "High Class Kitchen Gardening" (Bradbury), are useful works on the culture of vegetables.

Insects on Chrysanthemums (H. M.).—The box is received; its contents shall be examined, and a reply thereon published in a future issue.

Manure for Lawns (H. B.).—Wood ashes and bonemeal are excellent for applying to lawns. If you intend forming a lawn from seed, the preparation of the land and its cleanliness are matters of greater moment than the selection of any particular manure in producing satisfactory results.

Coating Hot-water Pipes (B. M.).—Yours is not the first instance in which black varnish applied to hot-water pipes in glazed structures has "settled" Ferns and other plants. If you give your pipes two coats of a mixture of lampblack and sweet oil, applying the second dressing when the first is dry, heating the pipes gently at first, when the house is freely ventilated, we think the pipes will be safe thereafter.

Propagating Rhus Cotinus (Young Gardener).—The best way to increase this shrub is to peg the branches down in fine soil. Make a few sloping cuts on the under surface of the branches, cover them well with soil, and keep it moist. It can be done now or in the spring, and when roots are formed and young shoots are seen rising from the branches they can be separated and planted where required. Sow the Grevillea seed in a light mixture of peat and sand in a temperature of 60°, keeping the soil well moistened without being too wet. It can be sown in the autumn, but germination is more likely to take place in early spring.

Pruning Peach Trees (F. L. E.).—As the crop is gathered and the

growths crowded remove some of them at once, making a selection of the best and most promising, and disposing these on the trellis so that the leaves are exposed to the direct action of the light. If there are even faint signs of red spider syringe the trees vigorously, and take care they do not suffer by a lack of moisture at the roots. Overcrowded growths and too dry borders are far too common, and these mistakes are not made by the best cultivators. Drying the roots to accelerate the ripening of the wood is a dangerous practice, especially when indulged in by persons who have not had much experience in growing Peaches under glass.

The Stanwick Nectarine (N. B.).—This Nectarine was raised at Stanwick Park, one of the seats of the Duke of Northumberland, from stones given to Lord Prudhoe by Mr. Barker, Her Majesty's Vice-Consul at Aleppo, and who afterwards resided at Suædia in Syria. The seed was sown in March, 1843, and the buds were inserted the following autumn on a Belle-garde Peach, and the first fruit was produced in 1846. Lord Prudhoe, who had become Duke of Northumberland, placed the Stanwick Nectarine in the hands of Mr. Rivers, of Sawbridgeworth, for propagation, and on the 15th of May, 1850, the stock, consisting of twenty-four plants, was sold by auction, and realised £164 17s., which His Grace presented to the funds of the Gardeners' Benevolent Institution, such an amount never having been realised before for the same number of small Nectarine trees in pots.

Roses for Market (J. W. M.).—We can give you no assurance that you will find a satisfactory return from the outlay that will be invested in the house and its preparation for Roses, as so much depends on cultural skill and business aptitude. Some amateurs succeed, others fail. It is quite impossible for us to say which is the most "remunerative market." The cost of carriage is a point not to be overlooked, and, curiously, you do not name the district in which you reside. First try the most populous centres with which you have direct and cheap communication. Maréchal Niel Roses well grown are profitable. Other varieties that are freely grown for market are Niphetos, Madame Falcot, Safrano, Madame Lambard, Perle des Jardins, and Souvenir d'un Ami. You had better try some others as well, as varieties do not succeed equally well in all places, and it is easy to increase those that answer the best, that being the practice of all the most successful growers of flowers for market.

Cropping Ground (Chappie).—The plot is so small that all we can say is make it as rich as possible to the depth of from 18 inches to 2 feet by the addition of as much stable manure as you can mix in, that from horse stables being preferable for very heavy land, cow manure being better for light soil; manure from piggeries is good. If the ground has not been dug more than a foot deep turn it up to that depth again, then break up the stratum below, leaving it there, covering it thickly with manure, then place on the original top spit of soil. Another year you can turn up the ground 18 inches deep. By proceeding on the lines indicated you will soon double the producing power of your plot of ground. Three sowings of Broad Beans, commencing in February, and sowing the second and third rows when the plants in the others are visible; two of dwarf Kidney Beans, the first about the middle or towards the end of April, according to the weather, the next about the middle of May, and sowing Haricots and Scarlet Runners the first week in May and again in a month, will be as much as you can accomplish with those crops on the ground at your disposal.

Orange Tree Gumming (A Constant Reader).—It is extremely difficult to stop gumming in any tree having a tendency to it by outward applications. If the gumming be a consequence of injury to the bark by a knock or otherwise, then cutting out down to the wood, so as to remove the gummed part, drying with quicklime, and covering the wound with grafting wax over a ligature of cotton is the best remedy we have seen tried. If it arises from constitution, then we advise the plant to be repotted, and this is the best time to repot or retub Orange trees. Turn out the plants, removing as much of the soil as practicable without injury to the roots, and clean out the tub, seeing that the drainage is clear, and supply fresh compost made moderately firm but not very light. Good turfy loam, neither light nor heavy, torn up rather roughly four parts, one part decayed manure free from worms, one part old mortar rubbish free from pieces of wood and broken small, and a sprinkling of half-inch bones and pieces of charcoal the size of a walnut. Incorporate the whole well together. Water carefully until the roots are working in the fresh compost, giving water only to keep the soil moist. The tree will in all probability grow out of the gumming.

Hollyhocks Diseased (R. G. F.).—We are sorry to inform you that the leaves you have sent are seriously attacked with the "disease" that we had hoped was stamped out. Burn all the leaves that are covered with dark spots or pustules, and you might try the effects of the petroleum and soft-soap mixture on the others, or some less affected. When we had the Hollyhock disease to combat the efficacy of petroleum as an insecticide was not discovered, and it is worthy of being tried now on disease-stricken Hollyhocks. We repeat what is so far as we know the best method of preparing the mixture:—Place 2 ozs. of soft soap and half an ounce of washing soda into a two-gallon stone bottle, and pour upon these one gallon of boiling rain water or soft water. Stir and shake till the whole is thoroughly mixed, then add 4 ozs. of petroleum, agitate again, then fill up the bottle with another gallon of boiling rain water. When cool strain through muslin or other suitable material, and apply with a syringe or spray-distributor in the evening. Prepared as described we find the oil thoroughly blended with the soap solution, and the "alternate squirting" into the vessel and on the plant is not required. We shall be glad if you will try this mixture on your Hollyhock, and favour us with the results of a few applications.

Josling's St. Albans Grape Cracking (Ignorant).—A correspondent was fully answered on the subject of one variety of Grape, and one only, cracking in a mixed house on page 193, last week. Yours appears a very similar case. Cracking is mainly the result of a naturally tender or defective skin and a damp atmosphere. The correct name of Josling's St. Albans is Chasselas Musqué. Dr. Hogg remarks on this Grape in the "Fruit Manual," "It may be grown in either a cool or a warm vinery; but the berries are very liable to crack unless the Vine is growing in a shallow border, and the roots and the atmosphere of the house are kept moderately dry when the fruit is ripening. Chasselas Musqué reproduces itself very freely from seed, hence the number of its synonyms. In 1845 Mr. Josling, a nurseryman at

St. Albans, introduced it under the name of Josling's St. Albans, and in 1862 it was sent out by Mr. F. J. Graham of Cranford, Middlesex, under the name of Graham's Muscat Muscadine, and there is no doubt that both of these gentlemen acted in perfect good faith in stating that they had raised their plants from seed." It is a delicious Grape, but the skin is very tender, and will certainly split in a moist atmosphere, even if the roots are not wet. You ask if it is possible to grow this Grape without its fruit splitting? Certainly it is. We have had bunches without an injured berry in them; but at the same time they are prone to split, and we have found great difficulty in producing satisfactory bunches in a mixed house, and to insure them the air had to be kept drier than was good for other varieties, so eventually our "Josling's" was removed. Your own experience proves that the drier the atmosphere is kept the better for the fruit, as when you "left off firing" you "soon found that would not do." The fact, however, of the fruit shanking as well as cracking shows that the root-action is defective, and the naturally tender skin of the variety would be the more imperfect on that account. The Vine will probably never produce good fruit until a greater abundance of healthy roots are working freely in a medium that contains the essentials for support of the Vine. Strong and stout foliage must be produced before the skins of the berries can be anything like perfect, and we feel certain they are very imperfect in the case to which you allude.

Names of Fruits.—The names and addresses of senders of fruit to be named must in all cases be enclosed with the specimens, whether letters referring to the fruit are sent by post or not. The names are not necessarily required for publication, initials sufficing for that. Only six specimens can be named at once, and surplus fruits beyond that number cannot be preserved. (*Henry E. Treadcroft*).—3, Blenheim Pippin; 4, Tower of Glammis. The Pears are too immature to show their characters. (*Thomas Joyce*).—Every one of the labels were shaken off the pins; you should tie them to the stalks. (*Ignoramus*).—1, Orleans; 2, Blue Perdrigon; 3, Lord Suffield; 4, White Joaneting; 5, apparently a local variety which we do not know; 6, Beurre Giffard.

Names of Plants.—We only undertake to name species of plants, not varieties that have originated from seed and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in firm boxes. Slightly damp moss or soft green leaves form the best packing, dry cotton wool the worst. Not more than six specimens can be named at once. (*John Eastwood*).—1, *Melampyrum pratense*; 2, *Erythra pulchella*; 3, *Humulus lupulus*, the male plant. (*Old Subscriber*).—We can scarcely recognise the fragment sent, but it resembles the *Marvel of Peru*, a species of *Mirabilis*. (*Young Gardener*).—The specimen sent is *Rhus Cotinus*, Venetian Sumach. See reply above. (*Alice*).—The plant, of which a specimen was sent, is the double White Campion, *Lychnis vespertina plena*; the single form is a native plant, and is found abundantly in fields and hedgerows. The name *vespertina* refers to the fact that its perfume is emitted during the evening. (*Constant Reader*).—1, Reserved for comparison with other specimens, but we fear it cannot be identified without flowers; 2, *Mitraria coccinea*; 3, The Cornel or Cornelian Cherry, *Cornus mascula*; 4, *Sempervivum arenarium*; 5, *Sempervivum calcareum*; 6, *Bocconia cordata*.

COVENT GARDEN MARKET.—SEPTEMBER 1ST.

MARKET very quiet, with heavy supplies.

FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples	1 6	to 4 0	Melon	1 0	to 2 0
Cherries	1 6	to 4 0	Oranges	100	6 0
Currents, Black ..	2 3	2 6	Peaches	per doz.	2 0
" Red	2 6	0 0	Pine Apples English ..	lb.	2 0
Figs	dozen	1 0	Plums	1/2 sieve	1 0
Grapes	lb.	0 6	St. Michael Pines ..	each	4 0
Lemons	case	10 0	Strawberries	per lb.	0 0

VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Artichokes	dozen	1 0	Lettuce	dozen	1 0
Asparagus	bundle	0 0	Mushrooms	punnet	0 6
Beans, Kidney ..	per bushel	2 0	Mustard and Cress ..	punnet	0 2
Beet, Red	dozen	1 0	Onions	bunch	0 3
Broccoli	bundle	0 0	Parsley	dozen bunches	2 0
Brussels Sprouts ..	1/2 sieve	0 0	Parsnips	dozen	1 0
Cabbage	dozen	1 6	Potatoes	cwt.	4 0
Capsicums	100	1 6	" Kidney	cwt.	4 0
Carrots	bunch	0 4	Rhubarb	bundle	0 2
Cauliflowers	dozen	3 0	Salsafy	bundle	1 0
Celery	bundle	1 6	Scorzoneria	bundle	1 6
Coleworts	doz. bunches	2 0	Soakale	per basket	0 0
Cucumbers	each	0 3	Shallots	lb.	0 3
Endive	dozen	1 0	Spinach	hushel	3 0
Eros	bunch	0 2	Tomatoes	lb.	0 2
Leeks	bunch	0 3	Turnips	bunch	0 4

PLANTS IN POTS.

	s. d.	s. d.		s. d.	s. d.
Aralia Sieboldi ..	dozen	9 0	Ficus elastica ..	each	1 6
Arbor vite (golden)	dozen	0 0	Fuchsia	per dozen	2 6
" (common) ..	dozen	6 0	Foliage Plants, var.	each	2 0
Arum Lilies	dozen	0 0	Heliotrope	per dozen	4 0
Bedding Plants, var.	doz.	0 0	Hydrangea	per dozen	6 0
Begonias	dozen	4 0	Ivy Geraniums ..	per dozen	0 0
Calceolaria	per dozen	3 0	Lilium ancratum ..	per doz.	12 0
Cineraria	dozen	0 0	" lancifolium ..	per doz.	9 0
Cockscombs	per dozen	8 0	" longifolium ..	per doz.	0 0
Crassula	per dozen	0 0	Lobelia	per dozen	3 0
Cyperus	dozen	4 0	Marguerite Daisy ..	dozen	6 0
Dracena terminalis,	dozen	30 0	Mignonette	per dozen	3 0
" viridis	dozen	12 0	Musk	per dozen	0 0
Erica, various ..	dozen	0 0	Myrtles	dozen	6 0
Eucalyptus, in var.	dozen	6 0	Palms, in var. ..	each	2 6
Evergreens, in var.	dozen	6 0	Pelargoniums, scarlet,	doz.	3 0
Ferns, in variety ..	dozen	4 0	"	per dozen	4 0

CUT FLOWERS.

	s. d.	s. d.		s. d.	s. d.
Abutilon	12 bunches	2 0	Lily of the Valley, 12	sprays	0 0
Ageratum	12 bunches	2 0	Marguerites	12 bunches	3 0
Arum Lilies	12 blooms	4 0	Mignonette	12 bunches	1 0
Asters	12 bunches	0 3	Myosotis	12 bunches	2 0
Bouvardias	per bunch	0 6	Pelargoniums, per 12	trusses	0 9
Camellias	12 blooms	0 0	" scarlet, 12	trusses	0 3
Carnations	12 blooms	1 0	Roses	12 bunches	2 0
"	12 bunches	3 0	" (ladoor), per	dozen	0 6
Chrysanthemums ..	12 bches.	3 0	" Tea	dozen	0 9
"	12 blooms	1 0	" red	dozen	0 8
Coreopsis	12 bunches	2 0	" Moss	12 bunches	0 0
Cornflower	12 bunches	1 6	Primroses, Yellow,	dozen	0 0
Dahlias	12 bunches	2 0	"	0 0	0 0
Epiphyllum	doz. blooms	0 0	Pyrethrum	12 bunches	4 0
Eucharis	per dozen	2 0	Spiraea	12 sprays	0 0
Gardenias	12 blooms	2 0	Stephanotis	12 sprays	2 0
Gladioli	12 bunches	6 0	Stocks, various ..	12 bunches	3 0
Hyacinths, Roman,	12 sprays	0 0	Sunflowers	0 6	1 0
"	12 bunches	0 0	Sweet Peas	12 bunches	2 0
Lapageria, white, 12	blooms	2 0	Sweet Sultan	12 bunches	3 0
Lapageria, red ..	12 blooms	1 0	Tropaeolum	12 bunches	0 0
Lavender	dozen bunches	4 0	Tuberose	12 blooms	0 4
Lilium candidum ..	12 blms.	0 0	Violets	12 bunches	1 0
" longiflorum, 12	blms.	3 0	" Czar, Fr., ..	bunch	0 0



AMONG THE CROPS.

Cold wet weather has dwarfed much of the straw of spring corn and made the harvest much later than usual, yet the appearance of the crops affords a sufficiently reliable indication of the condition of the soil for our guidance in the treatment of it after harvest. In good hands a heavy crop ought never to point to soil-exhaustion, for the clear and simple reason that after every crop the land will be cleaned and stored with plant food, fertility—take whichever term you like best if only you will grasp the fact, thoroughly digest it, and apply it to practice now and always. When will the British farmer come to regard the soil as a medium for conveying food to plants? We thought the theory of long fallows and resting the land was pretty well exploded; yet on the day of writing this article we saw a note by a Lancashire farmer in a leading agricultural paper, who said, "For many years past it has seemed to me British agriculturists have been 'spurting' the land in the endeavour to produce heavier crops. The desire to make two blades grow where only one grew before is a very meritorious one, but I am afraid that in the effort we have left out of our reckoning the condition of the principal factor, the land. By the aid of whip or spur you can get an occasional spurt from a horse; human beings will, in like manner, respond to a stimulant; but no one would dream of keeping up the spurt throughout the race. As with the land so with our live stock, in regard to quick and heavy maturity. In all cases of forcing it is well to pause occasionally and ask whether they have not gone far enough, for if we keep up the strain too long there is the palpable danger of breaking down the constitution and throwing us even still further back than the original state from which we started. Are we not in this latter state now? and is not the present poverty of the land as much owing to the attempts to over-force Nature as it is to the poverty of the pockets of the tenants?" The writer of this extraordinary farm note evidently clings to the antiquated idea that soil partakes somewhat of the nature of an animal, that it requires rest as well as food, or it will become exhausted. Every practical farmer ought to know that "poverty of the land" is an inevitable outcome of negligence either in the regular application of manure, in keeping the land clean, or in imperfect drainage. To talk of "spurting the land" is ridiculous, unless, indeed, it pointed to slovenly haphazard practice—a heavy dressing of manure one year and none at all another year—a fitful uncertain treatment without definite purpose or plan.

Results are before us now, and we shall do well to examine them closely to see how near they approach the condition of

good, better, best, and to decide what course of treatment will be best for each field in its preparation for another crop. It must be our especial aim to insure a strong growth from the germination of the seed onwards to the full development of the crop. In doing this we combine the first principles of farming with the most advanced teachings of science. Dry land, clean land, fertile land, these are the rudiments, the first principles of fundamental importance. Applied to practice now and always, year by year, or rather month by month, they go far to insure success. Experience, combined with scientific knowledge, tempered with common sense, enable farmers to apply them in the best, and we may add advisedly the most economical manner. We want no "spurt-ing of the land," but steady, persistent, intelligent efforts. Very grateful is the soil for all we do to it, if only we do it in the right way. Relieve it of superfluous water by drainage; cleanse it from foul weeds; break it up deeply; apply manure consisting of potash, nitrogen, and phosphorus mixed in well-balanced proportions according to the condition of the soil and the requirements of the crop to be sown in it; sow the best and most carefully selected seed that can be had, and you will obtain results proportionate to the excellence of your work.

How best to render the land clean, dry, and fertile has repeatedly been set forth in full detail, as assuredly it will have to be again and again. It is by the superiority of our culture and the excellence of our farm produce that we can only hope to make farming answer now under the low prices and keen competition with the markets of the world that is forced upon us. Earnestly do we strive both by precept and practice to help in so good a cause; and though occasionally the man who keeps no sheep and clings to the muck heap for the whole of his crops "smiles superior" when we venture to hint at the possibility of progress and improvement, yet we have pleasing evidence that efforts for cultural improvement are being made in many parts both of England and Scotland.

(To be continued.)

WORK ON THE HOME FARM.

Caution must be our watchword if the fickle weather which has prevailed up to the present time continues. It is of course important not to let slip any opportunity of saving the corn, but there must be no undue haste, no carting till it is really ready for staking. Oats, especially, must have time for both grain and straw to harden after the cutting, and we find no plan answer so well with this crop as mowing, leaving it untied upon the ground, and turning it over to the sun when ready. We are thus enabled to ensure perfect dryness, and avoid all risk of hurtful heating in the stack. Without such care Oats often heat so violently that both corn and straw has a musty flavour. Barley, too, will be best if left untied, for the straw is generally somewhat short this year. Not a day must be lost in getting Barley together and the stacks thatched, for this grain is liable to become discoloured if exposed to much rain after it is mowed. So much rain has fallen since the grain began to harden that fears are already entertained of discolouration. Much of the Wheat comes down in excellent condition, and the yield bids fair to exceed the general average. White Wheat is so good that we shall probably grow much more of it, for we get a better crop both of straw and grain than we do of Red Wheat. This to us is important, since we have so materially reduced the number of cattle, and are able to sell a large quantity of straw at an average rate of 40s. a ton. Our winter Oat crop, though late, proves profitable. The grain has realised about £7 10s. per acre, and the straw affords us an invaluable supply of chaff for home consumption. We had arranged to cut part of the corn crop on one of our off farms with a self-binding reaper, but it was not hired eventually, owing to the unsettled state of the weather. Self-binders are very useful implements in fine hot settled weather, but in such a season as this we prefer only to bind up Wheat into sheaves, and to keep other corn fully exposed to wind and sun till it is carted to the stacks. Sheep and pigs are turned upon the stubbles daily, but we are cautious not to allow the sheep to take too much corn, just as we avoid risk of gorging with Clover. Care and watchfulness are important in all such matters, to avoid waste of food, as well as a loss of animals. With pigs there is very little risk of harm from an overdose of food, and they will now fatten quickly for market.

FOREIGN GOODS AND ENGLISH RAILWAYS.

FOR years past there has been much said in various quarters as to the desirability of Parliament dealing with the vexed question of railway es, which in the vast majority of cases press heavily upon the home

producer to the advantage of his foreign rival. The question itself is one of such magnitude that it could not be adequately dealt with in the limits of a short article; but seeing that the question of foreign competition is very much to the fore just now, it may be worth while to briefly sketch out the evident advantages afforded by our railway companies to foreigners to the detriment of our agricultural and commercial industries. It must be understood that there is a reason, and, from a shareholders' point of view, a very cogent reason, for this apparent preference. Railways have to compete with steamboat companies, and hence, in many instances, they reduce their rates for foreign goods, produce, and merchandise, in order to bring upon their lines traffic which would otherwise be conveyed by steamer, if not at so rapid a rate, at least at a charge which would in certain things compensate for the slower mode of transit. Now this, from a business point of view, is perfectly fair and right, but the railways, in order to compete with the steamboats, have to carry goods at a rate which does not pay them a reasonable profit, and therefore it must be made up in some way. It is made up, but, unfortunately, it is made up at the expense of the British producer, who is taxed in order that the railways of his own country may take the foreign import traffic away from the steamship companies. This certainly does not seem just to the Englishman, and this is one of the great questions with which Parliament has over and over again attempted to grapple without any appreciable result. To fully realise the disparity of charges between the conveyance of home and foreign goods, it will be well to take a few instances from a return issued by the Board of Trade as to the rates for the conveyance by rail of certain classes of goods, merchandise, and produce. Perhaps one of the most important items is meat. Well, for Scotch meat from Glasgow to London the charge is 77s. 6d. per ton, while for American meats it is only 45s. This difference is, of course, to prevent the meat being conveyed by ocean steamers to London, but the difference tells very seriously against the Scotch grower. From Liverpool to London American beef is carried at 25s. per ton, while English meat has to pay just twice that amount, the reason, of course, being the same as just indicated. Grain is on a similar footing. It would be needless to multiply instances, but here is one as a sample. Imported corn is conveyed from the Victoria Docks to Peterborough, a distance of seventy-six miles, for 6s. 8d. per ton, while the rate for English-grown corn is 14s. 5d. Now, taking cheese, the rate for American cheese from Liverpool to London is 25s. per ton, but if the train stops at Cheshire and takes up a consignment of English cheese for the same market, the English maker is mulcted in 42s. 6d. per ton carriage. Foreign butter is conveyed from Cherbourg to London at £1 10s. per ton, but English butter from Weymouth to London pays no less than £2 5s. Potatoes cost 15s. a ton less to convey from Cherbourg to London than they do from Penzance. Home-grown fruit is at a similar disadvantage, as it appears that a man in Holland can send his produce to London *via* Sittingbourne at the same price that a Kentish grower would send from Sittingbourne to Covent Garden. In the case of some other articles of commerce the anomaly is yet more striking. Hay can be sent from Rotterdam to London for 9s. per ton, but 10s. per ton is the charge from London to Reading. Plate glass is charged at the same rate from Brussels to Birmingham as from Birmingham to Wolverhampton, a distance of thirteen miles. It is unnecessary to multiply examples; the glaring discrepancy is only too apparent, but how to remedy it is quite another question. This much is certain, that on foreign railways the rates do not press on the home producer or favour the foreigner as they do here. We are fain to confess, therefore, that railway rates are one of those things that they do order much better in France, and, in fact, on the Continent generally. There is, however, a probability that the matter will be deliberated upon by a Royal Commission, when it is to be hoped that something like an equitable arrangement will be arrived at, and the magnates of the railway world made to understand that they cannot fritter away the trade of the country in this fashion.—(*St. Stephen's Review*).

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude, 111 feet.

DATE.		9 A.M.					IN THE DAY.				Rain
1886. August.	Baromet- er at 39° and Sea Level	Hygrome- ter.		Direction of Wind.	Temp. of Soil at 1 foot.	Shade Tem- perature.		Radiation Temperature			
		Dry.	Wet.			Max.	Min.	In sun.	On grass.		
Inches.		deg.	deg.		deg.	deg.	deg.	deg.	In.		
Sunday	22	30.056	60.3	58.9	N.E.	60.1	79.4	57.1	118.8	50.0	—
Monday	23	31.002	58.4	56.8	N.E.	61.2	75.8	55.9	118.6	54.3	—
Tuesday	24	29.918	64.2	60.5	E.	61.6	81.4	56.8	123.5	51.2	—
Wednesday ..	25	29.996	63.9	59.3	N.E.	62.2	76.2	56.2	119.8	49.9	—
Thursday	26	30.068	64.0	59.3	N.E.	62.2	75.9	55.2	120.2	49.9	—
Friday	27	30.175	65.5	62.6	N.E.	62.6	80.9	57.3	118.4	51.4	—
Saturday	28	30.131	68.7	61.9	S.E.	63.3	77.3	59.5	112.6	52.0	—
		30.049	63.6	59.9		61.9	78.1	56.9	118.3	51.2	—

REMARKS.

22nd.—Dull till about 11 A.M., then bright and warm.
23rd.—Dull early, fine, but close afterwards.
24th.—Fine and hot, but rather oppressive.
25th.—Warm and bright.
26th.—Cloud and sunshine in morning, clear afternoon, a lovely summer day.
27th.—Overcast early, and cloudy all the morning; sunshine in afternoon.
28th.—Dull early, fine hot day.
A week of rainless summer weather, frequently close and oppressive. Temperature nearly 6° above that of the preceding week, and about 7° above the average.—G. J. SYMONS.



COMING EVENTS

9	TH	Show of early Chrysanthemums and Dahlias at Westminster Aquarium.
10	F	
11	S	
12	SUN	12TH SUNDAY AFTER TRINITY.
13	M	
14	TU	
15	W	

PEAR CULTURE AT CARDIFF CASTLE.

WALL and pyramidal-trained Pear trees grow vigorously here and produce heavy crops of fruit in good seasons. Professional gardeners and other visitors are generally struck with the size, shape, and healthy appearance of the trees; indeed so much so that I have been asked on several occasions by readers of this Journal to write a short paper on the method I adopt in pruning and training. In the first place I should say that the soil (a rich, deep, calcareous loam) and climate suit their growth admirably, and if the trees escape the frost and cold easterly winds so prevalent during the time they are in flower they are sure to bear a good crop of fruit. The kitchen and fruit gardens are laid out with broad gravel walks up the centre and round the wall borders. The ground is divided into squares by other walks crossing these at right angles, and the borders on each side of the walks are planted with pyramidal-trained Apple and Pear trees.

In planting I have kept the varieties as much by themselves as possible for the sake of uniformity of growth and convenience in gathering and storing the fruit. I prefer what are termed maidens—that is, plants of one year's growth from the bud, to trained trees which have been cut and haggled with the knife in the nursery perhaps for several years. Maidens, to begin with, are much cheaper than trained trees, and if properly managed will in the majority of cases make the best specimens. I also prefer a free stock to the Quince. My experience is that trees worked on the Pear stock grow stronger and last longer in good health than those worked on the Quince. The Quince stock, I have no doubt, may answer well in some thin heavy soils and in small gardens where ground is restricted, as the habit of the stock dwarfs the growth of the tree; but as regards precocity in fruiting, I think there is but little difference between the two stocks. If the most luxuriant trees on the free stock are carefully lifted when young, and the roots properly manipulated in the way of pruning, they will come into fruiting as soon as those worked on the Quince. Most of the trees growing here were planted maidens some ten or eleven years ago. Those worked on the Pear stock and trained in pyramidal form have attained a height of 24 feet, and many of them are as much as 10 and 11 feet in diameter at the base, and furnished with fruiting branches to the ground, whilst those worked on the Quince stock and planted at the same time are not more than from 6 to 8 feet in height and from 4 to 5 feet in diameter at the ground.

The majority of the trees are planted by the sides of the walks at the distance of 13 feet apart and 6 feet from the Box edging. Some of them are worked on the Pear stock and some on the Quince. The borders of the first cross walk in the lower kitchen garden are planted with seven Pitmaston Duchess and five Glou Morceau on one side, and five Easter Beurré, five Williams' Bon Chrétien, and two Beurré

Clairgeau on the other. The Pitmaston Duchess and Glou Morceau are worked on the Pear stock, and Williams' Bon Chrétien, Easter Beurré, and Beurré Clairgeau on the Quince. The trees are all good, but the Pitmaston Duchess and Glou Morceau are the best. They are 20 feet high, and much stronger and better furnished with fruiting branches than the trees on the opposite side which are worked on the Quince. Easter Beurré and Williams' Bon Chrétien are from 8 to 10 feet high. They are thin in branches, and the trees are a little loose in habit. Beurré Clairgeau is 14 feet high, compact and columnar in growth. Pitmaston Duchess is erect, strong, and symmetrical. Glou Morceau forms a graceful weeping pyramid. Nearly all the varieties are so heavily laden with fruit this year that they have to be propped up to prevent the branches being broken, but the finest and largest fruits are on the trees worked on the free stock.

The sides of the next cross walk are planted with the same number of trees. Some are worked on the Quince stock and some on the Pear. The varieties consist of Louise Bonne of Jersey, Marie Louise d'Uccle, Durondeau, Williams' Bon Chrétien and others, and the results here are the same as in the former case. The trees on the free stock are much stronger in growth, and the fruit larger and better in quality than those on the Quince.

The walls enclosing this garden are 12 feet high and faced in the inside with bricks. The trees are planted at the distance of 21 feet apart, and trained in fan shape. The whole of the east and west walls and a portion of the south wall are planted with Pear trees. There are nine trees on the south aspect, eleven on the west, and ten on the east. The varieties on the south wall are Jargonelle, Beurré d'Amanlis, Chaumontel, Beurré Superfin, Broom Park, and Marie Louise. On the west—Ne Plus Meuris, Winter Nelis, Gansel's Bergamot, Marie Louise, Fondante d'Automne, and Chaumontel; and on the east—Louise Bonne of Jersey, Jargonelle, and Marie Louise. The north wall is partly covered with Pear trees; some are trained in fan shape, and some in single cordons. The early sorts ripen their fruit fairly well, but the late varieties do not ripen satisfactorily. The wall was formerly covered with Morello and other Cherry trees, but they did not succeed well, and I had them taken out and planted Pear trees in their place. This was done partly to cover the wall, and partly to train trees to plant elsewhere.

The upper garden lies some 400 yards to the north of this. The whole of the south wall and part of the east and west walls are covered with Pear trees. Besides these a great many pyramidal-trained trees are planted in the borders on each side of the walks and in some of the open quarters. The trees grow remarkably well here. Those trained on the south wall have not failed to produce crops of excellent fruit for some years past, and this year both they and the pyramidal trees are loaded to the ground. The south wall is 14 feet high. It is wired from top to bottom at the distance of 9 inches apart, and the trees which cover it are planted at 24 feet apart, and trained in fan shape. The varieties consist of Duchesse d'Angoulême, Pitmaston Duchess, Beurre d'Amanlis, Williams' Bon Chrétien, Easter Beurré, Beurre Clairgeau, Beurré Bosc, Beurré Superfin, Glou Morceau, Marie Louise, Ne Plus Meuris, Bergamotte Esperen, Beurré Diel, and General Todtleben. The east and west walls are furnished with somewhat similar varieties.

Conspicuous amongst the fruit trees in the open quarters is a row of very fine pyramidal Pear trees 24 feet high. They are planted in the centre of the garden, in a border by themselves, with a broad gravel walk on each side. The trees are 13 feet apart, and the points of the branches meet each other at the base. The row consists of nine Pitmaston Duchess and eleven Beurré Superfin, which are covered with large fruit from base to apex. The other trees bordering the walks, and those in the open quarters of the garden, are fruiting equally well this year; but I may safely say the best trained trees, both wall and pyramid, are those which were

planted maidens, with a single stem of one year's growth. They were planted, pruned, and trained in the following manner. In planting the wall trees were kept 6 inches away from the bottom of the wall, the roots spread out carefully, covered, the ground made firm, and mulched afterwards. The stems were pruned or cut back to within 18 inches of the ground, and fastened loosely to the wall. In the following year they produced from three to five shoots each, which were carefully nailed to the wall as required during the season, and allowed to grow to their full length. At pruning time the centre shoot of each tree was cut back to within 18 or 20 inches from where it started, according to the strength of the growth, and the two or four remaining shoots, as the case might be, were nailed to the wall their full length; the two lower shoots horizontally, one on each side of the main stem and the others at a slight angle up the wall. From this time on, until the trees had filled their allotted space, they were examined regularly every spring shortly after starting into growth, and all the superfluous buds rubbed off the leading shoots, and a few of the buds near the ends of the branches picked off to strengthen the terminal bud. I never prune or shorten the points of the permanent branches until they have grown their full length, unless they have met with an accident, or the wood happens not to be sufficiently ripe to remain, and I may also say I never pinch and stop the growths during the summer, the same as recommended by many writers. To build up the trees and furnish the walls with them in the shortest time possible, the leading shoot of the current year's growth is stopped after it has grown about 2 feet in length, this causes it to send out lateral branches. In good seasons the wood ripens well, and a year's growth is gained by adopting this method. The breastwood is taken off two or three times during the summer, and the points of the permanent branches nailed in as required.

When the trees are pruned, which is as soon after the leaves fall as possible, the roots are mulched with rough stable litter for a breadth of 3 feet from the wall, and the trees syringed with a wineglass of petroleum to a gallon of water. All is thoroughly mixed by the syringe continually churning it up during the operation. The petroleum thus applied kills scale and all insects it comes in contact with, and it gives the bark of the trees a smooth and healthy appearance. This finished, the branches are then secured in the proper position for the year. The maiden pyramidal trees are built up much in the same way. The year after planting they throw out several shoots. One of the strongest of these is selected for a leader, which ultimately becomes the stem of the tree. All the other shoots are rubbed off except three of the best placed, which are retained to form the base and framework of the tree. The shoots are allowed to make the season's growth without being stopped in any way. When pruning them the leading shoot is left from 18 inches to 2 feet long, and the side branches a little shorter, according to the strength of the wood. This system is practised year after year—cutting out all cross and superfluous wood, and training and furnishing the tree with well arranged branches until it has filled its space. The growth is then spurred in the usual way close to the permanent wood every season at pruning.—*A. PETTIGREW, Castle Gardens, Cardiff.*

[Some portions of fruit-bearing branches sent to us show that the Pear trees at Cardiff Castle are in splendid condition. The clusters of fruit were among the heaviest we have seen, and the crop was practically borne on natural spurs, not spurs formed by close pinching and pruning.]

HEATING BY HOT WATER.

[Read before the Members of the Preston and Fulwood Floral and Horticultural Society, August 7th.]

(Continued from page 206.)

PATENT JOINTS.—Some advance has certainly been made during recent years in the manufacture of patent joints for fitting together hot-water pipes. For tenants' fixtures and the horticultural trade

they are undoubtedly valuable, because they can be taken to pieces without the aid of a fitter or the destruction of any of the pipes. The patent flange joints of Mr. B. Harlow may be mentioned. These joints, in case of failure, allow of any length of pipe being removed without disturbing the remainder. A labourer could fit or take them to pieces. The joints are fitted together by the aid of an indiarubber ring or rope and red lead, then screwed together by two bolts, one on each side; one length of pipe being cast with a slight projection, while in the other to be fitted with it is a similar-sized cavity, so that when bolted together the ring or packing material is pressed firmly into the cavity that it is impossible for the joints to leak. This maker's flange pipes were used by Mr. Sam Deards in the late boiler contest at Liverpool. Not a joint leaked, and they were fitted together and taken to pieces in the shortest possible time. Certainly in my opinion one of the best patent joints in the market is Messrs. Foster & Pearson's. It is so made that the pipes can be fitted together with one fast and one loose flange or two loose ones. A short length of pipe is fitted between, and then by the aid of indiarubber rings the joint is made watertight, when the bolts are screwed up. Any short length of piping can be fitted with these joints in case of failure, which is a great advantage. The rings or flanges of this joint are so cast with square edges that any number of pipes can be laid one on the top of the other. This joint acts as an expansion joint, and on this account alone is important. With this joint one pipe cannot well be taken out without unbolting the second, but this is not much trouble. It is very similar to Messrs. Jones & Attwood's expansion joint, with the addition of square edges on the flange.

VALVES.—It is impossible to dispense with these in arrangements of heating by hot water—that is, in all well-arranged schemes. Where only one house is heated from the boiler there is no occasion for valves, but in large or moderately large establishments—in fact, in all systems where there is more than one house to be heated from the same boiler—valves are indispensable, in order to regulate the temperature that may be desired. In extensive arrangements it is important that large high-pressure screw valves with brass slides and facings be employed on both the flow and return from the boiler or boilers as the case may be. This is requisite if two boilers are set side by side, so that they can be worked conjointly or separately as may be desired. If good valves are used one boiler can be worked if the other fails during severe weather; but without the aid of valves to prevent the water returning into both boilers the whole system would be stopped until repairs had been completed. The same kind of valves should be placed on every branch from the mains, so that the pipes in any of the houses can be shut off, repaired, or altered without disturbing the working of any other portion. Each house should also be provided with screw valves on both the flows and returns. When this is done any repairs or alterations can be made at any time with one house while all the others may be at work. In many instances valves are only placed on the flow pipe; but all such systems are incomplete, for when arranged thus the heat must be stopped from all the houses connected with the branch from the mains and beyond the valves that have been provided on it. From a letter before me I find that Messrs. F. & J. Mee's large screw valves are perfectly watertight with a pressure of 85 lbs. to the square inch. These valves are working in Derbyshire, and if I am not mistaken this firm first brought these screw valves before the public, but am open for correction on this point.

Throttle valves should not be placed in such positions, for they will not hold the water back. They are good for placing in the pipes where a check only is needed. The old make need not be described, for it has been entirely superseded, and the difficulty of taking out the wing or disc overcome for cleaning or repairs. Messrs. Foster & Pearson's new patent is a great acquisition, for the working part of the valve—that is, the wing—can be taken out in any position if set fast. Not only can this be done, but the seat of the valve as well. The cap or cover is secured by two bolts, and when these are unloosed the whole of the valve can be lifted out, whether turned on, off, or in any intermediate position. This is a convenient valve, and as durable as it is convenient, for it is fitted with a brass seat, the disc being of the same material. H valves are useful in arrangements where the heat has to pass through one house to the other. By the aid of two throttle valves beyond the H piece one house can be heated without the other, but there should always be a valve in the centre of the H piece, so that it can be shut off to prevent circulation round the one house instead of both when necessary to heat the two. When only one needs heating the valves beyond should be closed and the one in the H piece open. The ordinary H piece with the old throttle valve will answer for this purpose. An excellent valve of this description that I have seen is manufactured by Messrs. Messenger & Co., Loughborough.

EXPANSION VALVES.—Where the length of mains are great, expansion valves should be placed on both the flow and return pipes. It is not so essential to place them on the latter as the former,

because they are seldom so hot—in fact, never should be, and therefore the expansion is not so great. These valves should not be placed close to the boiler, or if they are another should be placed about 100 feet away if the mains run for that distance in a straight length. A good place for them is just before the mains branch to the right and left. At these points the pipes are more liable to break than in straight lengths if expansion is in any way impeded. These valves should always be placed in such positions where they can be got at readily, for they are liable to leak from the manner in which they are packed, for indiarubber rings will fail. The value of these valves is not recognised by the majority, and then they wonder why the joints are drawn—that is, when packed with iron filings, if not broken when the pipes are thoroughly tested. This is due to expansion, which would not have been the case if sufficient valves had been used as a preventive, according to the length of the mains. It should not require a large amount of intelligence to convince those who ignore the use of these valves when it is stated that the linear expansion of cast iron when heated from 32° to 212° is 1.35 inch in each 100 feet. What but leaky joints can be expected when no provision has been made for the expansion of the metal?

AIR TAPS AND TUBES.—Air taps should be inserted on the highest point on the flow in all the houses—in fact, in any position where air is likely to accumulate. Brass taps should be used, and from them a few feet of copper tube, until the wall or end of the house to which they are to be secured is reached. From this point ordinary gas piping will do. If lead is used from the tap it is more liable to be broken when work is being done in the houses than is the case with the copper tube. All air pipes should be open to ensure safety, but when provided with a tap they can be closed if at any time it is necessary to do so. It is a common practice to turn the ends of air pipes outside, but this I consider a mistake, for the ends may become stopped or frozen up during severe weather, and a breakage in the pipes is then almost certain. If carried up the roof or end of the house to a higher level than the supply cistern hot water will not be driven out of them when hard forcing is necessary. To be on the safe side, where a large quantity of piping has to be heated, an air pipe should be placed close to the boiler or attached to it; if in the latter it should be placed at its highest point and the end turned into the supply tank. This should be of 1-inch or three-quarter-inch iron pipe, and will insure the safety of the boiler, for it will be impossible to blow it up if the fire is put on and the large valves on the mains, by neglect, have not been turned on. When two boilers are worked side by side this air pipe may be placed on the point on the flow pipe where the two unite into one pipe. This arrangement will answer for both boilers, or whichever may be working; but not if the valves are closed. It is best to place one to each boiler, but when the other system is followed it is necessary to carry a yard or two of the pipe backwards in an horizontal direction and then upright if the end is placed in the supply tank. This pipe should be screwed together with a T connection at the point from which it is run up vertically. One end of the T should be plugged, so that it can be opened and the pipe cleaned in case of corrosion. This provision should always be made with pipes of this description, and also the supply pipe from the cistern. Trouble has often been given in forcing a passage through pipes arranged without a T connection, but when provision is made the plug can be removed annually and the pipes examined and cleaned if they need it, and the plug returned in a few minutes. In very large arrangements another of these large air or safety pipes should be arranged. A good place for the second and third if desired is on the centre of three socket connections where the mains branch to the right and left if this form of arranging the pipes has been followed. With one, two, or three of these pipes on the main, according to the extent of them, there is no fear of failure from the accumulation of air. It is important that every provision should be made for the escape of air, for it must be remembered that air is 827 times lighter than water, and therefore would escape from the air pipes that number of times faster than water would pass through them. Under these circumstances it cannot be expected that air will descend to escape, and for this reason air pipes should always be placed on the highest points of the pipes.

TAPS FOR DRAWING WATER.—While tapping the pipes half or three-quarter brass taps should also be inserted in the flow pipe in every house. They should be placed close to the water tanks; if this is not possible they can be carried to them by the aid of a wrought iron pipe of the same size as the tap. It saves considerable labour in a large garden to be able to run hot water into the tank when tepid water is required for watering and syringing both plants and fruits. Some object to use the water from the pipes for this purpose, but experience has convinced me that it will do no injury. It would not be advisable to use the water for these purposes if left in the pipes for years, as is the case in some gardens. When large supplies are drawn daily during the winter and spring months

the water is perfectly fresh through being constantly changed. In addition to this all the pipes as well as the boiler should be emptied annually; this cannot be too forcibly impressed upon all. By so doing a large amount of sediment is removed from the boiler and pipes, but this will be further discussed when considering boilers and the provision made for emptying them —WM. BARDNEY.

(To be continued.)

FORCING STRAWBERRIES.

(Continued from page 151.)

SUPPORTING THE FRUIT.—Forked twigs of Birch, Hazel, &c., form the best supports for the fruit, cutting them into suitable lengths, the lower ends pointed and thrust into the soil at such an angle and position as will best suit the trusses and support the fruit above the foliage or clear of the pot. The trusses or individual fruits have their stems placed in the fork so that the fruit will be clear of the stick, pot, and foliage. It will get air and light without impediment, and forming under those conditions its quality will be enhanced, and there will not be nearly as much danger of its getting damaged, or of damping or spotting through being in contact with other substances. Small stakes, and the fruit stem secured to them with string, will be found useful in the case of large fruit, which is very much more liable to damage and damp than the small or medium-sized fruit. These last will have all the support they need on the pot edge, but this is scarcely growing Strawberries.

GATHERING THE FRUIT.—The fruit should, as far as practicable, be gathered in the morning, and it should be just ripe, which requires some experience and judgment with different varieties so as to tell when a Strawberry is fit to be gathered. An under-ripe fruit and an over-ripe one is unsatisfactory: when under-ripe it is too sharp, and if over-ripe it is not brisk enough for most palates. The fruit should always be gathered with sufficient stem to hold it by.

RETARDING THE FRUIT.—Sometimes the fruit comes on too rapidly, and it is necessary to keep it back—retard it, in order to maintain the succession, or reserve it for particular occasion. This is a difficult matter, as it will not keep, and some judgment is necessary. It is no use, however, striving to retard the fruit before it is swelled and is well advanced in colour; then much may be done by turning the fruit from the sun, or removing the plants to a north house, where plenty of air can be admitted, and with all the light possible without sun the fruit will ripen perfectly; indeed, I have been told that sun-heated fruits are never so good flavoured as those that have not been sun-heated. This I can understand—viz., the plants have been kept too dry, and then the sun heats the fruit, the quality being considerably deteriorated, but with the plants duly watered and ventilated there is nothing like sun for improving the flavour. If a north house is not at command, a single thickness of tiffany shading will prevent the fruit ripening so fast, the temperature being kept at 60° to 65°. When the fruit is ripe, or very nearly so, the plants may be moved to a cool airy fruit room, and have the shutters down so as to admit light. In such position it will keep some time. There must not be any attempt to keep the fruit off the plants. In an ice house it will keep, of course, and it will have little or no flavour when taken out if it remain there long.

THE PLANTS AFTER FORCING.—The plants are useful after forcing for placing out, and if the autumn is favourable they will afford a crop of fruit at that time, and if not they will give a full crop the following summer. Early-forced plants are not good for planting out, as the plants are too much enfeebled by the process, but plants that are not started before the new year, or ripen their fruit in early April, and all those started later are suitable. They should be hardened before being placed outdoors—i.e., those that ripen their crops from March to May inclusive; late crops, or those off by the close of May may be placed outdoors at once, the other needing frame or other protection until hardened. They may be planted in rows 2 feet asunder, and 18 inches apart in the rows for the early varieties, allowing 6 inches more space each way for the larger varieties. In planting firm the soil well about the roots, and water well, repeating as the weather necessitates. Keep the plants free from weeds, give a mulching, and protect the autumn fruit with nets. Our autumns are too variable for reliance on autumn fruit, but I have had some good fruits in the north of York-shire by covering with span-roofed frames so as throw off the wet, and at the same time admit of a thorough current of air. Sir Harry and Vicomtesse Hericart de Thury are the best autumn fruiters. After a year's fruiting outdoors the plants may be cleared off, but I usually keep them a second year, and they invariably bear well.

ADAPTING FORCING TO CIRCUMSTANCES.—In some places, indeed a majority, there is no Strawberry house. In that case the best must be made of any house that can be improvised, or of the shelves in Peach houses, vineries, &c. There is no insurmountable difficulty under such conditions, only the Strawberries very often make their presence felt by filling the Peach trees and Vines with red spider, and this is a dear price to pay for forced Strawberries. This is to some extent, perhaps, the cultivator's fault, still it is a practice that must be followed, and can be done with little disadvantage to the Peach and Grape crops. Shelves in Peach houses and vineries fixed so as not to be more than 3 feet from the glass, nor nearer than 15 inches, are suitable places for forwarding Strawberries, and fruiting them for that matter, only the danger of red spider is greater when the plants ripen their fruit than when they are removed to another structure after the fruit is set and swelling. In order to swell Strawberries properly they require a high temperature and plenty of moisture. A Melon house or a Pine stove is not too hot, placing the plants on shelves, and in such structures, when the fruit is fairly swelling and continuing until it is well advanced in ripening, when a somewhat cooler and drier atmosphere will be more favourable to flavour. The fruit may, of course, be finished in such structures, and will be large and fine, with the quality fairly good. Some hold a forced Strawberry must be large and red, but it hardly holds good with fruit after March. The plants not being on turves, &c., can be moved about at the desire of the grower, and which must be instituted according to the means at command and requirements, of which everyone must be the best judge in each case.

MAINTAINING THE SUCCESSION.—The fruit being wanted at as early and over as long a time as possible, the means must be ample. Plants introduced about the middle of November will afford fruit from the middle of February to March, and to maintain a regular succession until the open air fruit comes in will need fresh batches of plants introduced at not less frequent intervals than three weeks up to early May. It is no use calculating on Strawberries outside before July, for however good our early sorts may be, the table must be furnished with British Queen, Dr. Hogg, and Cockscomb until the early varieties outdoors come in. Orchard houses, Peach, Plum, and other late fruit houses, are just the places to afford a late supply of those varieties, of which the supply may continue indefinitely without asking for a change, but I find a late supply can be had from span frames, the pots stood on the soil or partly plunged, and the fruit is mostly very fine and of excellent quality. The plants can be introduced to such structures when the last batch is placed in the larger structures, and they will supersede the outdoor varieties, if we use the same sorts, by a fortnight, and if such varieties as President, Dr. Hogg, &c., they will come in with the outdoor early sorts and be very acceptable; in fact the supply for dessert will be drawn from them as long as there is any. In introducing the several plants it must be an invariable practice to look to the succession. It will not do to leave off with one section of varieties at once; for instance, a batch of Vicomtesse Hericart de Thury must not be introduced in early February, and the next a fortnight or three weeks later of President, for that is courting a blank in the succession, but when the last of any variety, or, say, section I., is introduced, we must also introduce a batch of section II., and so on to the end of the chapter in order to have an unbroken succession of fruit.

INSECTS.—In summer caterpillars are sometimes troublesome. They are best removed by hand-picking. Aphides do not usually attack plants outdoors, but if they do watering or sprinkling them with tobacco juice diluted with six times the quantity of water will destroy the insects. Thrips and red spider sometimes attack the plants, which syringing would have prevented, and dipping in a solution of softsoap, 2 ozs. to a gallon of water, will destroy these pests. There is a grub which gets into the crown of the plants and eats out the heart-bud, and the plants are consequently blind. The plants should be examined in late summer, looking about the base of the crown, and it may sometimes be taken. It is not, however, very troublesome. When in frames aphides infest the scales of the crowns. Sprinkling with the tobacco water is the best cure. Inside the forcing structure aphides multiply rapidly on the swelling crown, and infest the trusses as soon as they appear. A sharp look out should be kept for them, and when one is seen fumigate thoroughly, and repeat if necessary, and continue this until the flowers are showing colour. There must not be any aphides upon the plants at that time, or any time, while fumigation must not be practised when the plants are in flower, and after the fruit is set fumigation must be done very moderately and carefully, or the fruit will be so dried or injured that it will not swell kindly afterwards. The tender foliage also is injured by excess of tobacco smoke. Red spider

will not trouble, if the plants are syringed as advised, and the supplies of water and food are adequate. It is poverty and drought that cause red spider. The best remedy is to sponge with soapy water, 2 ozs. to the gallon, and if this state of things prevail on Strawberries in Peach houses or vineries, remove them at once, for it cannot by any possibility be kept off the Peach trees or the Vines if anyway near them.

MILDEW.—This is peculiar to some varieties forced. The worst I have noticed for it are Black Prince, Sir Joseph Paxton, and Pioneer. It mostly arises from a close atmosphere, or during a dull period when air cannot well be admitted or syringing practised, and on a dry or sunny period following it increases or develops with astonishing rapidity. The best remedy is dusting with sulphur and afterwards well washing with water from the syringe. Fruit attacked by mildew is rarely any good.

STRAWBERRIES IN AUTUMN AND WINTER.—To have fruit at these times the plants as they are forced must be saved. Those that ripen the fruit in March will fruit again in late August or early September, those fruited in April in October, and the May-fruited batches in November. The only varieties I have tried are Sir Harry and Vicomtesse Hericart de Thury. Sir Harry gives the finest and best coloured fruits. The plants must be hardened before being placed outdoors and are stood on ashes for a short time, or a good plan is to plant them out of the pots in good soil in an open situation, making the soil firm about them, and watering till established. If kept in pots they must not be neglected for water. If the pot system is followed the plants after being hardened in pits or frames should be stood on a north border. This is a good plan to follow even with those that are to be planted out for lifting, as it insures to them a season of rest. In June the earliest forced may be turned out of pots, be partially disrooted, have the old drainage removed, and any straggling shoots shortened. They may be placed in a size larger pots, or from 5 inch to 6 inch. Drain the pots well, and the compost the same as previously advised. The potting must be moderately firm. It will be an advantage to stand on a north border, or if placed at once in a sunny position shade for a few days after potting, and to sprinkle over the foliage occasionally. Afterwards stand them in a sunny situation, and keep the plants well supplied with water. It will save watering if the pots are plunged in ashes. By early July the second plants should be potted, and the third before or by early August.

The first plants will set their fruit outdoors, and the plants may be moved indoors to ripen, the shelves of a late Peach house being suitable. The second batch must be placed in frames by the close of September, with air constantly—a circulation—and by the middle of October they can be given a house with a temperature of 50° to 55° artificially, and plenty of air, but with moisture, or the fruit will not swell freely. A close atmosphere is fatal. To swell the fruit off properly a temperature of 60° to 65° is necessary, and they are higher in flavour. In the lower temperature they will keep in steady progress, and plants can be introduced to the higher temperature as required to have the fruit ripe. It does not answer to place the plants in the higher temperature direct from the frames. They are best given ten days or a fortnight in the lower temperature before placing in the higher one. The third plants should be in the frames by early October, and in the house with a temperature of 50° to 55° by November. With these fruit may be had in January, care and judgment being all that are necessary to have Strawberries in winter as well as in summer, introductions being made at intervals from the lower to the higher temperature so as to maintain the succession. Guard against damp and cold currents of air. Lift the outdoor plants with plenty of roots and pot them, the earliest by the close of August, and the later batches from the middle to the end of September. Placed in frames, damped overhead, and kept rather close, they will soon push fresh roots, and then should have air freely, and be moved indoors as advised for those shaken out and repotted.

A little weak liquid manure may be given, but the plants will not need nearly so much water in the autumn as during the spring months, and in applying it be careful to keep it off the fruit. Damp soon spoils the fruit. Thinning the fruit is necessary if it is wanted fine, and supports are quite as necessary, indeed more so in autumn than in spring and summer, in order to have them well exposed to light and air. Early-forced plants of La Grosse Sucrée will fruit well again by August, the plants having been hardened and rested a short time on a north border, then potted and grown on in an open situation, and the other will follow and maintain the succession, so that a supply of ripe Strawberries can be had in every month of the year.—G. ABBEY.



WE are informed that the BURY AND WEST SUFFOLK HORTICULTURAL SOCIETY'S SHOW OF FRUIT AND CHRYSANTHEMUMS will be held on Thursday and Friday, November 11th and 12th. Mr. P. Grieve is the Hon. Sec.

— MR. EDMUND P. DIXON, Hull, sends us specimens of CHRYSANTHEMUM CUPS AND TUBES, and informs us he has named this appliance the "Jameson Tube." The cups and tubes are identical with those figured on page 177, and described by Mr. Molyneux. We suspect it is the Molyneux tube with the Jameson spring, and therefore ought to be good and of service to exhibitors of cut blooms of Chrysanthemums, by whom the twin appliance will, no doubt, be largely used. It is advertised in another column.

— GARDENING APPOINTMENT.—Mr. C. O. Sjöquist, for several years general foreman to Mr. Rann, Handcross Park, Crawley, the well-known successful plant exhibitor, has been engaged as head gardener by W. H. Loder, Esq., High Beeches, Crawley.

— WE have received the schedule of the KETTERING CHRYSANTHEMUM SHOW, in which a number of moderate prizes are offered in the different sections. Non-members of the Society can exhibit on payment of an entrance fee of 4s. There are prizes also for vegetables and fruit. The Show will be held on November 20th, and Mr. W. Pike is the Secretary.

— ANOTHER CHRYSANTHEMUM SHOW.—We have received a schedule of prizes of the first Chrysanthemum Show to be held in connection with the Sutton (Surrey) Rose Society, and observe that the Exhibition will be held on November 12th and 13th. Mr. Ernest Wilkins is the Hon. Secretary.

— ROSE GROWING.—A correspondent writes:—"If 'J. W. M.' would feel disposed to join me in a small venture in Rose culture in the south of France, which I am about to undertake, I should be very pleased to hear from him on the subject." We are at liberty to send the address of our correspondent to "J. W. M.," if he desires it.

— A LINCOLNSHIRE correspondent, who says he has grown CARTER'S CHAMPION BLACK CURRANT "ever since it came into existence," would like to have the opinion of those who cultivate it as to its value. He has "not been able to secure bunches of fruit from it as large as Grapes, nor does he consider it surpasses Lee's Prolific for size and flavour."

— A CORRESPONDENT states that there is now in the Folkestone Exhibition a magnificent specimen of a LILIUM AURATUM, the property of the Recorder of Folkestone. This plant has forty-five stems and bears 315 blossoms, each averaging $8\frac{1}{2}$ inches in diameter. Its perfume is so powerful that it scents the whole nave. This is the nineteenth year it has blossomed.

— A NORTHERN Rose grower says that on the 23rd of last month he cut two good blooms of the TEA ROSE THE BRIDE from two buds that were inserted in the stock on June 8th, 1886.

— MR. EASTWOOD, The Gardens, Muncaster Hall, Rainford, alluding to the VARIEGATED TROPÆOLUM that Mr. Mitchell refers to in last week's Journal as a distinct variety, writes:—"I should be pleased if Mr. Mitchell would inform us where any other distinct variety from that at Aberaman Gardens is to be procured. I did not take the green variety to Aberaman Gardens, but the variegated one which perhaps was the parent to Mr. Mitchell's 'distinct' form. The centre of the leaf of my variegated Tropæolum was a pea green with a creamy white broad edge, the flowers bright scarlet, and the plant as free-blooming as the green variety, but, as I have stated, have not seen it bedded out. Grown outdoors it would no doubt be much improved in colour and dwarfier in growth."

— THE RIGHT HON. LORD WIMBORNE has presented to the Corporation of the Town of Poole thirty-five acres of land, to be laid out

as a People's Park and Recreation Ground. Provision was to be made for a cricket-ground, gymnasium, lawn-tennis court, &c. The Corporation invited designs for laying out and planting the ground in an appropriate manner, and offered a prize of £20 to the competitor whose design was most approved, and £5 as a second prize. The designs were sent in marked with a motto, so that the authors were not known until after the selection had been made. The prize of £20 has been awarded to Messrs. R. Veitch & Son of the Royal Nursery, Exeter; the second going to Mr. R. Upcher, of Scole, in Norfolk. There were eighteen designs sent in from all parts of England. Messrs. Veitch & Son are to be congratulated on their success.—(*Devon and Exeter Daily Gazette*.)

AUTUMN TREATMENT OF HARDY FRUIT TREES.

FAILURE to secure a crop on bush or pyramidal trees of Apples, Pears, Plums, and Cherries, as well as from the trees grown upon walls, is too frequently attributed either to the unripened state of the wood of the previous autumn or to ungenial weather in spring. There can be no doubt that spring frosts, when the trees are in full bloom, will blight the prospect of a crop of fruit, but failure year after year is not due in every instance to the inclemency of the autumn and spring.

Those who are in the habit of visiting gardens, and who know how fruit trees should be managed, do not wonder that failure results from the imperfect condition of the wood. The weather of autumn, however warm and genial, would be insufficient to perfect the wood and fruit buds of many trees. Recently we remarked to the person in charge of a number of fruit trees of various kinds and modes of training, "You appear to have no Pears this year." "No," was the rejoinder, "the autumn being so bad the wood was poorly ripened." Last autumn was very much better than we generally have in this neighbourhood, and the fruit buds of our own trees could not possibly have been in better condition, the result being a heavier crop of Pears than we have had for some seasons.

One of the greatest mistakes in the management of hardy fruit trees, whether grown as bushes, pyramids, or trained upon walls, is crowding the trees with branches. Trees can be found that it is impossible to see through, and they are totally destitute of fruiting-wood and buds inside, and even outside the tree they are a crowded mass of weak imperfectly developed spurs. With such trees symmetry of form appears to be the main object of the cultivator rather than the crop of fruit. Such trees resemble perfect pyramidal Hollies rather than fruit trees for the production of a crop of fine fruit annually or whenever the weather proves favourable in spring until the blossoms are set. Crowded trees have never perfect fruit buds, and the flowers they develop are in consequence imperfect and will fail to set properly however genial the weather may be. It must also be remembered that such trees are cut back hard in winter, which adds to the evil rather than averts it. It is possible that I may be pointed to standard or pyramidal Pears or other fruit trees that become crowded and yet fruit abundantly all round the exterior of the tree. This is very true, but these trees are not mutilated every winter and compelled by such barbarous treatment to push forth strong robust shoots that can never be properly ripened. The ground they are growing on has become less fertile in many cases than that surrounding young or miniature trees—of these I am principally writing—in our borders. The growth of trees that are treated naturally is short and sturdy; in fact, it is arrested early in the season, and perfectly developed fruit buds are the result.

There are other methods of training pyramidal and bush trees that are perfect as regards form, which may appear in winter grand examples of manipulation, and the branches may seem to be sufficiently far asunder; but in summer when the foliage is developed and lateral growths issue from the tree in various places along the branches they become too crowded, and the majority of the fruit buds are never exposed to sufficient light and air to solidify and mature them for the production of perfect flowers, which would result in a good crop of fruit, providing the weather were genial; but the condition of such trees to the practical eye is sufficient to convince even in the previous summer that failure as regards a crop of fruit the following season is certain to result.

The branches of such fruit trees that have been enumerated should be far enough apart to admit light and air to the whole of the foliage and fruit spurs in the inside of the tree. It is not sufficient to leave them a few inches apart to give room for the leaves that surround the fruit buds in formation, but they must be wide enough to allow light and air in abundance to penetrate even when the lateral growths have been pinched to about 4 inches in length, say about midsummer. All may not be ready for pinching by that date; for instance, this will be the case with Apples, but Pears, Plums, and Cherries will be ready as well as the majority of small bush fruits.

I should be afraid to speculate on the distance the main branches

must be apart to accomplish this end if the trees were not subjected to a periodical system of root-pruning and judicious summer pinching. Trees that are neither root-pruned occasionally nor have their shoots regulated in summer are to be found in both large, moderate, and small gardens. They are certainly stunted back in winter, only to grow with greater vigour and energy the succeeding summer. This system is followed year by year as if it was the true road to success. It is the very opposite, for such treatment will not bring a crop of fine fruit, and in a few years the trees are ruined, or partially so, by the treatment to which they have been subjected. To be short, the tree is each year wasting its energies on the production of wood that is cut away in winter and burned, and which eventually predisposes the tree to canker and other diseases.

It has been argued again and again in support of such treatment that the labour and time at disposal are insufficient to carry out effectually any other system. Such excuses carry with them but little weight, for the enormous amount of pruning required during the short days of winter takes up more time than a judicious system of summer pinching and root-pruning. The last system results in perfectly healthy trees that are in condition every season to bear a crop of fine fruit, weather permitting, while the others are in the very opposite state.

Every tree, whether grown as a bush or pyramid, or upon a wall, and whatever mode of training is adopted, the branches should be sufficiently far apart to admit every ray of light with a corresponding amount of air penetrating to them; then, and only then, may success be anticipated in this changeable climate of ours.

Hard pruning in winter is the source of many evils, and it would be better to dispense with the knife altogether than continue its use to the extent that is practised in too many instances. Perfect fruit buds are not the result of cutting back trees severely in winter—neither are they formed with freedom on gross luxuriant trees, the result of youth and rich heavily manured soil that generally surrounds them in private gardens. Fruit buds are the result of arrested growth, which is proved, if a simple instance may be taken, by lifting or digging round the roots of a tree in autumn and winter. This certainly brings the growth of the tree to a standstill for the time being, and results in wood the following season of a smaller kind, yet firmer, and of a more solid nature that is in autumn studded with fruit buds. Better had the knife be dispensed with, and the growth of the trees regulated in winter by root-pruning them directly they display signs of luxuriance. This will seldom be the case if properly managed, for the crop of fruit will sufficiently regulate the growth of the trees, unless unfavourable springs prevent the trees carrying their usual crop for two or three years in succession. The lateral growths would need due attention to stopping and the breaking out of lateral and sub-lateral growths as they appear. In the majority of cases after the shoots have been once stopped an intelligent boy can do the work for the remainder of the season as well as a man.

Trees can be managed on this principle without a knife, and would be in ten times better condition for bearing fruit than by its injudicious use. The knife, however, is a useful instrument when properly applied to fruit trees, and if they are managed on the right principle at the roots in winter and the growths during summer there is but little to be done during the cold sunless days of winter when pruning is not one of the most agreeable occupations.

The present weather is just what we require for perfecting hardy fruit and fruit buds. Trees that are crowded on the principle described should have their main branches thinned without delay in preference to allowing them to remain untouched until the winter. Not only should the main branches be thinned, but lateral growths should be shortened back to within 4 inches of the main branches, and those at the extremity to the same distance, unless the extension of the tree is requisite. In this case they may be left 9 inches or 1 foot, or even longer, as the case may be. By such a course of treatment, if genial weather follows, many of the fruit buds, if any exist, will develop wonderfully, and with the aid of root-pruning in early autumn or winter a crop or partial crop of fruit may be insured another year.

Many trees that are in a suitable condition of vigour and were stopped at the time pointed out will have the lower portion of these shoots bristling with fruit buds. This will be especially noticeable with Plums, Cherries, Apricots, and many Pears, while those that are not fully developed will be on the last named and upon Apples after the following season's growth. Many of the latter produce them freely enough on the current season's wood. When the shoots are stopped early in the season they require repinching a second time, and the sub-laterals breaking out at this season of the year. By clearing out the small young shoots that have started away since they were last stopped, light and air is not only admitted to the branches and fruit buds, but the fruit is exposed to the sun, which will colour it wonderfully in its last stages of development. This is not all. The resources of the tree are devoted to the development of the fruit and

the perfection of the fruit buds for the following season instead of spending its energies on useless wood that will only be cut away later in the season. With trees in the best possible fruiting condition they will only need pinching once in the season, and then the sub-laterals breaking out at this season; but with more vigorous trees it will be necessary to go over them the number of times stated. All useless growing shoots on Peaches, Apricots, Plums, and Cherries on walls should also be removed. There is no fear of the main or lower buds bursting again after this date; but with trees carrying no fruit and in very luxuriant condition this may be the case, but no harm will result if stopped at the distance from the main stem that has been pointed out.

Morello Cherries on north and other walls need attention now the fruit has been gathered. If properly disbudded and the shoots thinned early in the season the wood that has borne the fruit only will need removing, as well as any shoots that are likely to crowd the trees. If this work is done and care exercised in laying in the young wood for next year, little pruning will be needed in winter, and the work of nailing will be reduced to a minimum. Winter attention will consist in looking over the trees and the removal of any bare shoots, for this is always necessary in order to keep the trees furnished from the base to the top of the wall. These, as well as the other fruit trees that have been enumerated, pay abundantly for the labour bestowed upon them at this season of the year. It is only by attention to judicious stopping and thinning of the shoots during the summer and early autumn, and root-pruning in winter to arrest the luxuriance of trees, that real success with bary fruit trees can be attained.—SCIENTIA.

CHRYSANTHEMUMS AND THEIR CULTURE.

(Continued from page 200.)

DRESSING THE BLOOMS.

"DRESSING" is a term used by growers of Chrysanthemums for exhibition; it means arranging the florets evenly and straight, each one having an inclination towards the centre of the bloom. Occasionally the florets are so close together in places that some will be crossed, others create deformities, commonly known to growers as ribs. Oftentimes some of the florets reflex instead of incurve; these should be turned back so that they assume their proper character. Some varieties produce "eyes," which means a large patch in the centre of the flower full of seed; such defects should be filled up when it is possible. Much has been written against this so-called dressing by a certain class of critics, who profess to admire flowers unadorned and presented in a natural manner as growing on the plants. Such critics have possibly not had much close experience with blooms of the incurved section. So long as nothing but legitimate means are employed to improve the appearance of Chrysanthemums there is no firm ground for objection to dressing, and opponents of the practice have only to attend a large Chrysanthemum show, stand near a box of highly finished blooms, and hear the words of praise applied to them from the Chrysanthemum-loving public who know and appreciate good specimens when seen, then change the position and remain for an equal length of time opposite a stand of blooms "staged as grown," and they will soon learn which finds the most favour. Is it not often a case of "sour Grapes" with decriers of dressing? Be this as it may, it is certain that a person wishing to gain success with cut blooms at an exhibition stands but a poor chance of gaining even a third prize if he stages blooms as grown, without any manipulation of the florets. There is no comparison in the appearance of two blooms, one without any dressing and the other with the florets neatly arranged. The globular form so much admired in incurved blooms cannot be had without time being bestowed in removing inequalities. Those plants which receive correct attention during growth produce flowers which require far less dressing than those on plants imperfectly managed. If any dishonest practices are employed, such as inserting portions of other flowers of the same variety, fixing them into position by the aid of gum, then the sooner dressing is extinct the better, but I do not think such means are employed in these days to "improve" the blooms.

When the blooms are about half developed some growers apply supports made from cardboard cut circular in form with a slit half way across to admit of the support passing the stem under the flower. Those supports are intended to preserve the form of the lower petals, and preventing them falling out of place. This method does not find ready acceptance with me, as I think it favours damping by excluding the air; and, moreover, it diminishes the depth of the blooms by preventing the lower florets falling below the guard. A much better method than the preceding one is to hang the blooms downward when they are about half expanded; this is best done by releasing the stems from the stakes, when the weight of the flower will in most instances bring it down to the

position required. In the case of large blooms of the Queen type, which might be injured by the stems of other plants while growing together in the group, it is better to remove the former to other structures. If small-span roofed houses are at hand for growing Primulas and other greenhouse plants the stage is a capital position to place a few plants of Chrysanthemums without much interfering with the regular occupants, first taking out the stakes and tying the stems to the rafters of the roof in such a manner that the flowers will hang down. In such a position the petals develop evenly in their proper places, incurving at the same time in the best possible manner. Blooms treated in this way do not require nearly so much dressing as those do grown under ordinary circumstances. They can also be retarded better in this way than when growing in a mass, for the reason that the sun does not shine so fully on the centre of the blooms, which in many instances causes them to open quicker and reflex much sooner than when in a downward position. The daily trouble, too, of shading is dispensed with to a great extent, as it is seldom that shade is required when the plants are grown in this manner. Failing the position named, a vinery in which the foliage has fallen from the vines answers well. Place the plants near the front of the house, tying the stems to the wires, hanging the blooms down in the same manner. All incurved blooms require dressing to a greater or less extent. I have heard people remark that such and such flowers in stands had not been dressed, as they were varieties that did not require any assistance, growing so well in form that nothing can improve them. This is a mistake. No flower which I have at any time staged for competition ever failed to go through the dresser's hands; even those of the Rundle type and Princess of Wales, which develop flowers so evenly in a natural way, require some of their florets arranging before they can be termed perfect examples. When some varieties—the Queen family for instance—are about three parts open, it will be seen that there may be too many florets in the centre to expand fully for want of space; in such cases remove with the medium-sized forceps a few over, say, a space of half an inch in diameter, quite in the centre of the bloom, scraping the base quite clean; this allows the adjoining florets to grow into a much larger size and incurve naturally towards the centre, and thus the bloom assumes the desired form.

Blooms which require dressing should be cut with a stem 6 inches longer than the tube in which the flowers are to be placed, the extra length of stem being required for the operator to draw the bloom down into the tube. Select tubes of the size required for each specimen so that the flange is not seen; cut off the leaves from the stem, slip the stem through the tube, bringing the latter close up, but not pressing on the petals at first; then take the flower in the left hand, and with the longest forceps as shown on fig. 19, page 132, take out any florets, one at a time, that are damaged or out of place. It is useless to allow such to remain, or any that are too stiff to incurve. The centre of a bloom will sometimes show a cavity known as an "eye." The common cause of this defect is "taking" the buds at a time not best suited to the variety, generally too late. Such blooms are not easy to dress. The short yellow quill-like florets, commonly known as "seed petals," which form in the centre, must be removed with the medium-sized forceps. The next thing to do is to draw the bloom down in the tube; this reduces in some instances the depth a little; however, this is necessary to gain the globose form so much desired. It is extremely difficult to say how far each bloom requires to be pulled down to the tube; the operator must be guided in this by the variety and the solidity of the bloom. The tube should hold the petals in their place, those in the centre incline towards the middle of the bloom, so that no "eye" will be visible. The flower stem is best fixed in the tube by means of small pieces of cork cut wedge-shaped. These are best soaked in water before using, rendering them softer and more easy to push into their places with the thumb. As the cork and stem are in the water contained in the cup the cork swells and remains tight in its place, but is easily withdrawn by the forceps should necessity require its being taken out. Some growers use plugs of wood to secure the stems in the tube, but I think they are too hard and likely to cause injury to the stems of some weak-growing varieties, likewise they cannot be so easily placed in or taken out of the tube; also that more time is taken up by preparing them than do the cork stops.

When all the details which appertain to dressing the blooms, and which I have endeavoured to explain, are completed, the arrangement of the petals should be the next consideration. The accompanying engraving, fig. 30, shows a bloom of Jeanne d'Arc necessarily reduced, the full size being 5 inches in diameter and $4\frac{1}{2}$ inches deep; this represents an incurved bloom about two-thirds dressed, the remaining part rough, and is thus sketched as a guide to beginners. The top or centre of the bloom is the correct place to commence dressing. If the florets there show an inclination to reflex, then, holding the flower in the left hand and with the small

forceps in the right, very gently draw the jaws up the edges of the florets from the base to the point. If this is done with care and good judgment the centre will be quite filled and the bloom a model of regularity. Great care must be exercised in applying the forceps, or the florets will be bruised. This may not show at once, but the marks may be too visible by-and-by, and spoil the appearance of the flower.

My remarks on dressing have been confined to the incurved family, because well-grown examples of other types—viz., Japanese, Reflexed, and Anemones require no dressing beyond the removal of a badly placed floret, as for instance several flat florets may appear in the disc of an Anemone bloom, or an irregular-shaped ray or guard floret may protrude unduly; in both instances they must be removed, thus rendering the blooms neat and symmetrical. Some Japanese varieties are rather addicted to showing an "eye;" such an unsightly object must be removed, first pulling out the "seed petals," then turning the bloom upside down, and by giving it a severe shake the florets next to the centre will generally fall into the place of the abortions previously removed. Well-grown reflexed varieties require no dressing beyond the removal of any long irregular florets that detract from the neat appearance of the blooms.

A GOOD BLOOM.

There is much misunderstanding amongst growers of Chrysanthemums, especially young ones, as to what qualities constitute a

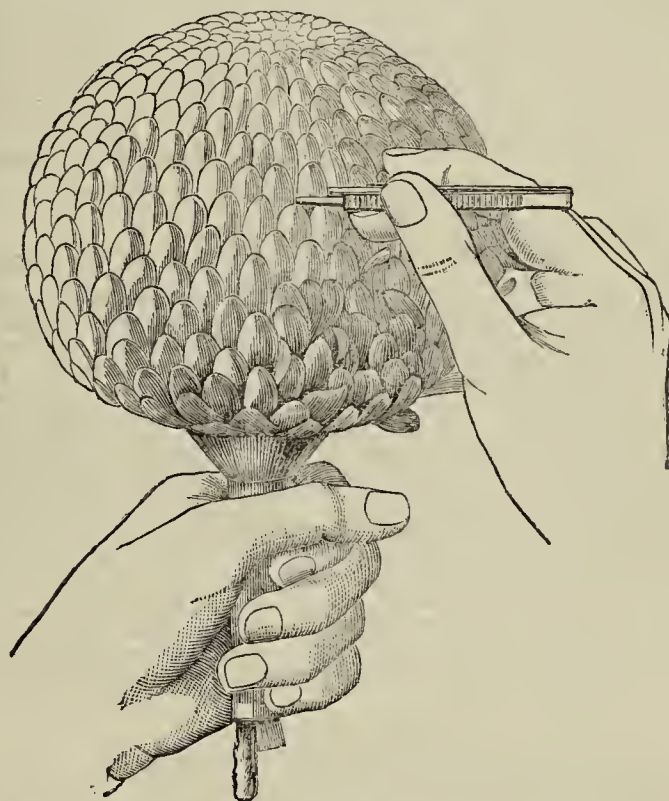


Fig. 30.—Dressing Chrysanthemums.

good bloom. Having had considerable experience, I will give what, in my opinion, is required in a bloom before it can be called a representative specimen. It is a fault amongst young growers (and some old ones too) to imagine that mere size is the desideratum to aim at. Size I grant is the first object a cultivator has in view, but it must be accompanied by other good points in a Chrysanthemum before it can rank as a first-rate specimen. I will state the several qualities of an incurved bloom as I think they ought to be classed—namely, size, depth, solidity, breadth of petal, form, finish, freshness, and lastly colour. In some localities, owing to atmospheric conditions, such as dry pure air and strong soil, the colour of the flowers is much deeper and richer than it is in other districts where the light is less intense, as it is in the vicinity of large towns, low damp situations, and light sandy soils. I prefer to measure and compare all blooms when they are dressed and arranged in the stands. Under other conditions, such as when growing on the plants or before being dressed, they are deceptive. All blooms after being dressed are smaller, especially in depth, than before any manipulation of the petals has taken place. They are always reduced somewhat by cupping, notably those that are not solid. The diameter of a dressed representative bloom of the Queen type should not be less than 5 inches nor its depth less than 3 inches; the blooms are often larger, but the size mentioned may be considered to indicate good average specimens. Then take Hero of Stoke Newington as a typical medium-shaped bloom; this should not be

ess than from $\frac{1}{4}$ to $\frac{1}{2}$ inches in diameter, and $2\frac{1}{2}$ to $2\frac{3}{4}$ inches deep. This variety produces some of the deepest flowers we have in proportion to the diameter of each. A smaller type is represented by Princess Teck, which possesses much solidity of petal; when in good condition 4 inches in diameter is a good size for this and $2\frac{1}{2}$ deep. Solidity is an essential point of merit. An experienced judge knows at once when he sees flowers which are not solid, as the florets do not lay evenly over each other. Solid blooms should bear squeezing between the finger and thumb without being injured or indented. Blooms of any particular variety which are not very broad in the petals are often more solid than those which have florets of greater breadth, these through their extra size not embedding so closely as do the narrower ones. Breadth of petal, without coarseness, is an acquisition, the breadth being due more to the nature of the soil used in growing the plants, and also to a low and damp atmosphere at the time of expansion, than to skill in culture. Good growers try their utmost to produce blooms with broad florets, but owing perhaps to the absence of the conditions named fail to achieve their object. Form is depth consistent with the diameter in proportion to the sizes named. Finish is the manner in which the flowers are dressed, whether smooth in outline or rough in appearance. Freshness is a point which carries more weight than perhaps almost any other with judges. Blooms devoid of freshness lose points at all times in competition, for adjudicators only have regard to the present condition of the blooms, taking no account of their state a week previously. A want of freshness can be detected at once, showing as it does around the bottom petals by discoloration and softness of the texture. Colour should be good in all cases, particularly the lilacs, pinks, maroons, and bronzes; the yellows should be clear, as for instance orange shades of yellow are easily seen if they are not up to the standard; primrose, too, is sometimes pale, being nearer dirty white; the lilacs show more than any other want of colour, and lose their colour quickly.—E. MOLYNEUX.

(To be continued.)

PRESTON SEEDLING AND FILBERT PINE STRAWBERRIES.

AS this is the time when most gardeners are making new plantations of Strawberries, and are anxious to procure the most prolific and remunerative sorts, I wish to introduce to your numerous readers what appears to me, if not a new Strawberry, yet it is but little known. I have it by the name of Preston Seedling. It was sent here by Mr. Lovel, of the Strawberry Gardens, Driffield, two years ago, and it has proved to be the most prolific Strawberry I have met with for many years. The fruit is very large, though not what may be termed handsome in the strictest sense of the term; the flavour is tolerably good, perhaps a little acid. When the fruit is quite ripe it becomes much sweeter than when gathered in an unripe condition. We had a good supply of fruit until the middle of August, when it was a useful addition to our dessert. Its chief recommendations are—it is an enormous cropper, and continues bearing for a long time. Another good useful late Strawberry is Filbert Pine. The fruit is medium size, cone-shaped, fine flavour, possesses a beautiful aroma, and continues in bearing quite as long as Preston Seedling. It is unquestionably one of the best late Strawberries known, and deserves a place in every garden.—Q. R.

THOUGHTS ON CURRENT TOPICS.

A VERY prominent topic of discussion of late has been introduced by "Saxoring," under the heading of "Flower and Fruit Shows." In his communication on page 75 your correspondent formulated two complaints, the first, the alleged practice of persons buying and borrowing garden produce and winning prizes with it at exhibitions; the second, the suggested unfairness of "real amateurs" having to compete at Rose shows with growers who have "acres of Rose farms," and "professional Rose gardeners who do all the budding and grafting." To my mind the former allegation is of far the more public importance, yet it has passed unnoticed, while the latter seems to have caused quite a flutter of excitement in the Rose world, and "Large and Small Rose Growers" has become a familiar theme in the Journal.

I AM not sure that I should not have kept my thoughts to myself on this subject had not Mr. W. H. Raillem pointedly alluded to me on page 157. I do not in the least object to the association, but fail to remember saying or implying a "wish not to hear anything more about Roses till next midsummer." I assure your correspondent I am such a thorough admirer of the Rose, and have loved it so long, that I should be very far from content with any such deprivation. It is quite true I am not a "specialist," and in one sense I can advance a claim that may, perhaps, entitle me to the honour of, say, a brief literary connection with the large and small growers who have so pleasantly taken part in the discussion. The "sense" is that humorously indicated by "F. H. G.," who (page 112) does not like to call himself a large Rose grower, because he is not quite 6 feet high. According to that standard I have been both a small and a large grower, as I could bud Roses just as well at ten years of age, weight perhaps 6 stones, as I could when nearly thrice that weight, and five times that age. Therefore I am not without a little experience. I

have also exhibited a little, judged a little, and have had the pleasure of awarding the first prize to several small and great growers, including Messrs. Cant, Cranston, and Canon Hole.

I DO not remember seeing the blooms of Mr. Raillem, who asks me what I should think of such a proceeding as the suppression of the owner's name from a prize card, the gardener's alone remaining, as "Mr. Blank, Swaggerfield Court." I should think that if any gardener did that to magnify his own importance, his action would be regarded with contempt by all sensible men. But I have seen the owner's name erased for a different reason, and I daresay Mr. Raillem can conceive occasions when the master of a gardener would prefer not to see even the mention of his name "in the papers." Every case must be decided on its own merits. I heartily wish the race of swaggering vainglorious gardeners were extinct, and pompous gardeners' tormenters ditto, and I am glad to feel that both are "dying out." And now having answered the question propounded, I will turn to the subject of exhibiting.

I HEARTILY sympathise, as many a "great" Rose grower will, with their smaller, but not less earnest, brother who has to be absent from his garden from 8.20 A.M. till 6.40 P.M., and with a salary too small to allow him to engage help in growing his Roses, and who, when he exhibits at the Crystal Palace, has to compete against a gardener to a gentleman who has a large estate, and others similarly situated. The "small Rose grower" is severely handicapped under those circumstances no doubt, just as the small tradesman is handicapped by the big merchant, and if the former cannot successfully compete with the latter on his own ground he must take his goods to another market. Let our friend search for and find a local show where the giants do not appear, and after he succeeds there take a step upwards. If he cannot win prizes at the smaller shows it is hopeless his attempting to do so at great gatherings of a national character. The directors of the Crystal Palace will make no special classes for "amateurs who do not have assistance more than two days a week." Such restrictions only work well at very local shows, if then, where "everybody knows everybody else," and are quite inapplicable to large exhibitions open to competitors from all parts of the country.

IF I am not under a misapprehension some of the most famous exhibitors of Roses in the amateur classes do not employ a gardener two days a week, nor even one day. Many have time "of their own," no doubt, to attend to their plants, but that fact would not, nor could not, exclude them from the classes proposed; and as for the "bar-gardener" classes, that would be of no practical advantage to the present complainants in the face of so many real amateurs who can well hold their own against the best of the blue aprons. The only practical suggestion, as it appears to me, that has yet appeared for giving small growers better opportunities for distinguishing themselves, is that of "F. H. G.," on page 157, of increasing as far as possible the limitation classes—that is, having certain classes which are not open to competitors in others that are stipulated. That is an established system at many shows, but it might perhaps be extended without weakening the displays, and at the same time bring in a few more exhibitors.

I AM inclined to think that more classes for twelve blooms might be provided with advantage, only allowing the same exhibitors to enter in two or three of them. In most or all large shows six classes of twelve blooms would be filled well—namely, twelve Roses distinct, any varieties; twelve Hybrid Perpetuals, distinct; twelve Teas and Noisettes, distinct; then the same number of blooms in three other classes in not less than nine varieties; the prizes in the three latter trio to be of somewhat lesser value, and closed against exhibitors in the former. There are dozens of persons able to enter twelve good blooms in nine varieties that could not stage twelve distinct. The higher prizes for the latter would induce competitors to enter them who were able to do so, while the "nines" would invite new and smaller growers. This plan answers well at Chrysanthemum shows; and in some of these there are classes for still smaller growers—namely, for six distinct blooms, and six blooms in three varieties in the different sections. By some such plan as that room would be found for the smallest of small Rose growers, and the more that can be induced to enter the lists the better, for the more earnest would not long remain content in the minimums, but would aim higher, and make room for other beginners in turn. I should like to see "small Rose growers" encouraged in every possible and practicable way; but "D., Deal," who is at least as earnestly desirous as I can be to bring the greatest number into the fold, shows conclusively, on page 206, that the object cannot be attained by provisions and conditions which are essentially indefinite, expansive, and open to misinterpretation, misunderstanding, and abuse.

THE mention of "D., Deal," reminds me of an observation over that signature in a report of a flower show which carried my thoughts back to a circumstance which showed that your correspondent's taste, in respect to flowers, differs very widely from that of a Royal Princess. Cockscombs are described on page 162 as "hateful things." The miserable abortions that are often seen I admit are the reverse of fascinating; but when perfection of culture is developed in a select strain, the result is not "hateful" to everybody. At the show to which I allude, and which was under Royal patronage, half a dozen Cockscombs commanded general attention, and Her Royal Highness was so delighted with them as to express a desire to have such plants. It is scarcely necessary to say that a choice of them was placed at the Royal lady's disposal, and plants were graciously accepted and much prized. Cockscombs grown as these were

afford evidence of cultural skill such is rarely more conspicuously displayed in stands of Roses or any other florist's flowers. In respect to those Cockscombs, I vote with the Princess that they were not "hateful," though of course this does not prove that all their admirers were not wanting in taste.

I ALWAYS read with pleasure the practical articles of "Utilitarian" on growing vegetables and fruit for profit, but I think in his last remarks he is a little "mixed." I do not exactly see that it can be highly profitable to grow Apples against walls, and am of opinion that, except in a very few districts, wall space could be more advantageously occupied than in growing the Devonshire Quarrenden. I think his article on Pears on page 176 much better than that on Apples and Plums on page 198. I have heard a good deal of Oullins Golden Plum as a profitable standard for market, and have seen not a few trees of it growing with great freedom, but I suspect instances are rare of its giving a rich return. I fear this Plum is over-rated for that purpose, and am very firmly of opinion that Rivers' Prolific and Denyer's Victoria would buy the land on which a plantation were established before Oullins Golden would pay the rent. I shall be very glad indeed to have proof to the contrary, as I know the variety last-named is excellent, and think it should have a place in all private collections, but growing for market is quite another thing.

WHILE on the subject of "marketing," I think the "Traveller," whose note is published on page 202, is rather a tantalising person. He seems to have said either a little too much or not quite enough, especially the latter. If he knows how Potatoes are to be treated to produce a good and profitable crop at Christmas, I am sure many persons who do not grow them for market would be glad to have the information; but perhaps the Channel Islanders did not tell him the whole story. Those enterprising individuals appear, from what we hear, to know how to live by and on the land, and some particulars about their methods of culture would be acceptable to gardeners generally in the "old country." It seems to me as if there were something behind the little note in question, and I confess I should like to fetch it out.

I AM glad to see that Mr. Abbey and myself are coming to terms, and I thank him for his lucid definition of fruit-bud formation on page 204. I have said a "fruit bud is an arrested wood bud," and I say so still; but that does not appear to be quite understood, or accepted; hence we are told that "a fruit bud is the embryonic leaves of a bud transformed into calyx, corolla, and staminate organs, the embryonic shoot changed into ovary and pistillate organs, a concentration of the vital forces on the organs of reproduction which otherwise are expended in growth." My worthy friend has nearly got above me at last; but how anyone can know all that and not perceive that a fruit bud is an arrested wood bud passes my comprehension. The very "transformation" of one part is explained, and the "change" in another elucidated. It is clear Mr. Abbey was either making a little harmless fun of my "metamorphosis" theory, or drawing me out; at any rate, he now not only admits its truth, but details the process. That point settled, all the rest is subsidiary; and if in our little controversy we have set younger gardeners—not to say inexperienced amateurs—"a thinking," we shall not have struggled in vain, for with the fact that was sought to be enforced fairly grasped the management of fruit trees becomes simplified, and fewer mistakes will be made in the future than have been committed in the past on pruning.

JUST another thought. I have been told that Mr. Abbey is still out of harness. Well, "more's the pity," not for him alone, but for the owners of good gardens which are not managed so well as they might be, for I happen to know he is a man of rare attainments, ripe experience, and exactly the reverse of one of those "kid-gloved gentlemen," which, as gardeners, are very properly going out of fashion. If, like the historical "Tittlebat Titmouse, Esq.," I should "come in" for "ten thousand a year," I should engage George Abbey as my gardener; but as that fortune (?) is not likely to occur, there is a chance for somebody else more worthy of his services than is—A THINKER.

HORTICULTURAL SHOWS.

BATH.—SEPTEMBER 1ST AND 2ND.

NEARLY every town and village of importance in this neighbourhood have their horticultural exhibitions, but these would not appear to detract from the popularity of the Bath fixture. All that is wanted is fine weather, but in this respect the Bath Committee are very unfortunate. The first day was all that could be wished, and a large and fashionable attendance was the result; but on the concluding day heavy showers fell, and this kept away many would-be visitors from a distance. The Show itself was a thoroughly good one all round, everything in season being provided for and well represented, and there being plenty of tent room the numerous and very appreciative visitors had a good opportunity of enjoying the treat provided by the efforts of the Honorary Secretary, Mr. B. Pearson, and the hard-working Committee, of which Mr. R. King is the genial Chairman.

FUCHSIAS.—These always occupy the premier position on the prize list, and the fairly liberal prizes offered invariably attract good competition. On this occasion they were not so good as we have seen them at Bath, and were certainly inferior to the best recently shown at Trowbridge, but they were much more effectively grouped. They were arranged in a grand bank, having groups of fine-foliaged plants on either side of them, and viewed from the ends of the tents they presented an almost unique appearance. Mr. J. Lye, gardener to the Hon. Mrs. Hay, was a good first for nine specimens;

this veteran grower and raiser of Fuchsias staging freely flowered but rather stiffly trained pyramids, averaging about 10 feet in height, the varieties being Doel's Favourite, Benjamin Pearson, Thomas King, Henry Brooke, Emily Bright, Pink Perfection, Lye's Favourite, Floribunda, and Final. Mr. G. Tucker, gardener to Major W. P. Clarke, Trowbridge, took the second prize with more freely trained plants, but which contained two that were very shabby. His best were Doel's Favourite, Bountiful, Miss Lucy Finnis, and Charming. Mr. G. Snell, gardener to Mrs. Counsell, was a good third with dwarfer, more bushy, and well-flowered specimens, the best of which were Arabella and Mrs. Bright. The first prize for six plants was awarded to Mr. J. Reddish, gardener to Mrs. Pinder, who had medium-sized beautifully furnished pyramids of Charming, Arabella, Load-me-Well, Thomas King, Bountiful, and Victoria. Mr. A. W. Southard, gardener to F. G. Walker, Esq., was second, his collection including good specimens of Mrs. Lye and Doel's Favourite. Mr. W. C. Drummond was third. With four plants Mr. A. Hawkins, gardener to T. Jolly, Esq., was a good first, showing Charming, Doel's Favourite, and Final. Several neat pyramids were shown in the classes for single specimens. With a light variety Mr. A. Hawkins was first, winning with a small beautifully flowered Miss Welsh, and Mr. Lye was second with a well-flowered plant of J. Lye. Mr. Tucker was first for a dark variety, staging a good specimen of Charming, and Mr. Lye was second with Lye's Rival.

STOVE AND GREENHOUSE FLOWERING PLANTS.—Mr. J. Cypher, Cheltenham, was very easily first with twelve flowering plants, these consisting of Allamanda Hendersoni, A. nobilis, Anthurium Andreanum, Bougainvillea glabra, Phænocoma prolifera Barnesi, Erica Aitoniana Turnbulli, Clerodendron Balfourianum, Ixora regina, Ixora Duffi, Allamanda grandiflora, Erica Marnockiana, and Lapageria alba, all shown in their well-known perfect style. Mr. W. Long, gardener to C. Gardiner, Esq., was awarded the second prize for a group which included several Ixoras, Allamandas, and Bougainvillea glabra in good condition. Mr. J. F. Mould, Pewsey, was a creditable third, his best plants being Allamanda Hendersoni, Erica Aitoniana turgida, and E. Marnockiana. In a corresponding class for six plants, and from which the exhibitors in the larger class were excluded, the first prize went to Mr. G. Tucker, who had medium-sized specimens of Stephanotis floribunda, Lapageria rosea, Allamanda Hendersoni, Rondeletia speciosa major, Bougainvillea glabra, and a stale Anthurium Schertzerianum. Mr. W. J. Mould, gardener to E. E. Bryant, Esq., was second, his group including well-flowered plants of Allamanda Hendersoni, Ixora amabilis, Erica Eweriana, and Rondeletia speciosa major. Mr. W. C. Drummond was third with a badly trained lot. Several lots of Ericas were shown, but none of them was particularly good. Mr. J. Cypher was first with six varieties, these consisting of neat plants of Iberyana, Marnockiana, ampullacea Barnesi, Austiniana, Hartnelli, and Turnbulli; Mr. J. F. Mould was a good second; and for three plants Mr. W. J. Mould was first, and Mr. W. C. Drummond second. The single specimen flow-ring plants were of average merit, Mr. Cypher being first for a stove plant with Allamanda nobilis very handsome, and Mr. W. Long second with a fairly good Ixora Williamsi. Mr. Cypher was also first for a greenhouse plant, staging a good Erica amula, and Mr. G. Tucker was second with Statice profusa.

FINE-FOLIAGED PLANTS.—Several classes were provided for these, and these were well filled. Mr. J. Cypher was a good first for twelve specimens, which comprised large beautifully coloured Crotons Sunset, Prince of Wales, Johannis, majesticus, and interruptus anreus, Latania borbonica, Cycas revoluta, Kentia Fosteriana, and other fine Palms. Mr. J. F. Mould took the second prize for a collection which contained well coloured Crotons Queen Victoria, Andreanum, and Sunset, and several good Palms; while Mr. W. J. Mould was third for a group much deficient in colour. Mr. W. C. Drummond was first for eight varieties, among which were a good Cycas revoluta and Bonaparteia gracilis. Mr. W. Dobson was second, and for a single specimen Mr. Cypher was first with a good Cordyline indivisa, and Mr. Drummond second.

FERNS.—There were several excellent groups of exotic Ferns, most of which came from the neighbourhood of Trowbridge. With fifteen varieties, Mr. J. Coke, gardener to A. P. Stancombe, Esq., was a good first, his group comprising handsome plants of Dicksonia squarrosa, Dicksonia antarctica, Neottopteris Nidus, Gymnogramma chrysophylla, Adiantum farleyense, Gymnogramma Lauchiana, and Lygodium scandens. Mr. W. J. Mould was second, and Mr. G. Tucker third, both having praiseworthy collections. The best nine varieties were shown by Mr. T. Truckle, gardener to T. Carr, Esq., who had good Davallia Tyermanni, Davallia Mooreana, and Adiantum gracillimum. Mr. W. C. Drummond was second, and Mr. W. Dobson third.

MISCELLANEOUS PLANTS.—Liliums were well shown by several growers and were quite a feature. Mr. A. A. Walters was first for three pots, staging L. lancifolium album in beautiful condition. Messrs. G. Cooling & Son were second with well-grown plants, and Mr. W. Dobson third. The best single pot of Lilium auratum was shown by Mr. J. Cypher, Messrs. Cooling being second, and Mr. W. C. Drummond third, the exhibits being most praiseworthy in each instance. One class for six varieties of Orchids was provided, and of these there were three exhibits. Mr. J. Cypher was easily first, having a splendid pot of Dendrobium bigibbum with thirty spikes, the best of them bearing seventeen blooms; Saccolabium Blumei, Cattleya speciosissima, Cattleya Dowiana with five lovely blooms; and Cattleya Gaskelliana. Messrs. Heath & Son, Cheltenham, were second, their plants being somewhat overshadowed by a huge trade card, and Mr. R. B. Cater, Bath, third, the latter having a pan of the charming Oncidium Jonesianum with three spikes of bloom. Tuberous Begonias were particularly good, notably the six specimens staged by Mr. J. Dyer, gardener to the Rev. Canon Bernard, who took first prize for beautifully flowered examples of Snowflake, Edith Box, Empress of India, White Swan, Dr. Masters, and J. Laing. Mr. W. Snell was a good second, his best being Marquis of Salisbury, Madame Arnott, a fine double pink; and Louis d'Or, good double yellow. Mr. J. Durbin was third, and Mr. Guisell, gardener to W. Clifford, Esq., was highly commended. Mr. J. Lye was first for six Coleuses, J. H. Clifton, Esq., second; and Mr. Lye was also first for six handsome silver variegated Pelargoniums. Tricolors were not so good, and with these Mr. W. C. Drummond was first and Mr. J. Lye second. Mr. G. Tucker was the only exhibitor of Gloxinias, and was fortunate in being awarded the first prize. Mr. W. Mattock was first for Balsams, and Mr. A. Hawkins second;

and Mr. Mattock was also first for six Verbenas. Mr. A. W. Southard had the best Petunias, the second prize going to Mr. J. Durbin, gardener to S. Tredwell, Esq. Several good lots of Cockscombs were shown; Mr. J. Weston, gardener to the Rev. C. C. Layard, was first, Mr. W. Mattock second, and Mr. J. Coke third. Zonal Pelargoniums were very good, notably the first prize six staged by Mr. G. Tucker, these consisting of *Lizzy Brookes*, Rev. Atkinson, Mrs. Strutt, *Evening Star*, Mrs. J. Gibson, and President. Mr. W. J. Mould was first for a new and rare plant with *Anthurium Veitchianum*, and Mr. J. F. Mould second with *Croton Bergmanni*, these plants being preferred by the Judges to Mr. Cypher's *Mormodes luxatum* with a strong spike bearing ten flowers.

CUT FLOWERS.—There was a better show of Roses than might have been expected. The best twenty-four varieties in triplets were staged by Mr. J. Mattock, Oxford; Mr. G. Campbell, gardener to S. P. Budd, Esq., being a good second, and Messrs. G. Cooling & Son a close third. The Teas were largely shown in each instance. Mr. W. Narroay was first for twelve triplets, and Mr. W. Davis was also successful in this class. The best twelve varieties, single blooms, were shown by Mr. W. Smith, Mr. Campbell being a good second, and Mr. W. Narroay third. Some of the best of the Roses shown were *La France*, *La Rosière*, *C. Darwin*, *Hippolyte Jamain*, *Princess of Wales*, *Marie Baumann*, *Madame Eugénie Verdier*, *Dupuy Jamain*, *Souvenir d'Elise Vardon*, *Perle des Jardins*, *Jean Pernet*, *Marie Van Houtte*, *Anna Olivier*, *Comtesse de Nadaillac*, *Catherine Mermet*, and *Maréchal Niel*. There was a very effective display of *Gladioli*. Mr. S. Bird, gardener to S. Dobree, Esq., was well first with thirty-three spikes, these including *Lulli*, *Meyerbaer*, *Sweet May*, *St. Crispin*, *Queen of Canaries*, *Undine*, *Purity*, *Vesuve*, and many other fine varieties at their best. Mr. G. S. Walters was second, and Mr. W. Brookes third, both having very creditable spikes. Mr. J. Tont was first for twelve varieties, Mr. S. Tottle second, and Mr. J. Mattock third. We never remember seeing better German and French Asters. With twenty-four blooms of the former Mr. W. Jones was first, Mr. A. A. Walters second, and Mrs. W. Jones third, and with French varieties Mr. F. Evry was first, Mr. W. Jones second, and Mr. T. Salter third. Messrs. Keynes, Williams & Co., Salisbury, had a grand lot of Dahlias, and were well first for twenty-four varieties, among which may be mentioned *Gloire de Lyon*, *Colonist*, Mrs. Gladstone, *Lord Chelmsford*, *Prince of Denmark*, *J. Wyatt*, *Miss Cannell*, Mrs. Langtry, *W. Rawlings*, *J. Ashby*, Mrs. Dodds, *Imperial*, and *Vice-President*. Messrs. Heath and Son also exhibited in good style, and took the second prize. Mr. H. Bush was first for twelve varieties, Mr. Humphries second, and S. Tottle third, all having good blooms of well known sorts. Messrs. Keynes, Williams & Co. were first for nine Fancies, these consisting of *Fanny Sturt*, *General Gordon*, *Rebecca*, *Gaiety*, *Salamander*, *J. B. M. Camm*, *Pelican*, and *H. Glasscock*; Mr. Humphries was second. Single Dahlias in twelve varieties, shown in bunches of not less than six blooms, were capitally shown by several growers, and in most instances they were most tastefully displayed. Messrs. Keynes, Williams & Co., were first, the varieties consisting of *Negress*, *Miss Tutt*, *Paragon*, *White Queen*, *Queen of Singles*, *Magnificence*, *Yellow Queen*, *J. Cowan*, *B. Barkaway*, *Mauve Queen*, and *Victory*. Mr. A. A. Walters was a good second. Mr. A. Hawkins was first for bunches of Verbenas, Messrs. Cooling & Son second, Mr. A. A. Walters third; while with twenty-four bunches of Zonal Pelargoniums Messrs. Cooling & Son were first, and Mr. J. Mattock second, both having collections of the best varieties. Messrs. Heath & Son were easily first for twenty-four bunches of choice flowers, and Mr. W. C. Drumm second. The vases of cut flowers were especially good, Mr. J. Cypher being first for a very light arrangement of choice flowers, Mr. W. Dobson second, and Mr. E. T. Hill third. Very beautiful also were the hand bouquets, M. J. Cypher winning the first prize, Mr. W. Dobson being a good second, and Mr. R. C. Drummond third.

FRUIT.—One good-sized tent was wholly devoted to the display of fruit, and although the competition was not so keen as last year, especially in the Grapes, there was yet a most interesting show of all kinds in season, and some including late Grapes that were not yet fit for the table. Only three collections of eight dishes were brought, and all were of nearly equal merit. Mr. W. Nash, gardener to the Duke of Beaufort, received the first prize, his dishes of small fruit being the best throughout. He had rather poor Muscat of Alexandria and well-finished Black Alicante Grape, a handsome Golden Gem Melon, and good Bellegarde Peaches, Brunswick Figs, Washington Plums, Moorpark Apricots, and Elruge Nectarines. Mr. W. Pratt, gardener to the Marquis of Bath, Longleat, was a close second, his Black Hamburgh and Muscat of Alexandria Grapes being very fine, but his smaller fruits were not first-class. Mr. Miller, gardener to W. H. Long, Esq., M.P., Rood Ashton, was third, he also having good Black Hamburgh and Muscat of Alexandria Grapes. The first prize, value £5, offered for eight bunches of Grapes in four varieties, was awarded to Mr. W. Taylor, gardener to Alderman Chaffin, Bath, but he only had a very slight advantage over his formidable opponent, Mr. W. Pratt. The premier collection consisted of handsome, heavy, and perfectly finished Alicante, Alnwick Seedling, Muscat of Alexandria, and Gros Maroc. One of the bunches of the latter was exceptionally good, and although not perfectly coloured was, perhaps, the finest ever shown, many gardeners thinking it must be Gros Colman. Mr. Pratt had extra large well-finished clusters of Muscat of Alexandria, Alicante, Black Hamburgh, and Mrs. Pince, and it was the want of finish in the latter that most probably gave Mr. Taylor the advantage. No third prize was awarded, but Mr. G. Bastin, gardener to G. Holloway, Esq., received an extra prize for a collection considerably behind the above-mentioned. The Black Hamburgh class was a fairly large one, but, on the whole, a poor lot was staged. Mr. W. Marchant was first with small well-coloured bunches; Mr. Pratt second with clusters more than double the weight of any others shown, but which had lost colour; and Mr. F. Edwards, gardener to J. Lysaght, Esq., was third. There was only one exhibitor of Gros Colman—viz., Mr. J. Miller, gardener to J. McPherson, Esq., and he was decidedly fortunate in securing the first prize, as both bunches and berries were small.

In the class for any other black variety Mr. W. Nash was easily first with well finished Alicante; Mr. E. J. Peacock being second; and Mr. A. Young, gardener to B. Thomas, Esq., Clifton, third, these also showing fairly good Alicante. Mr. Pratt was first for Muscat of Alexandria, having extra heavy bunches fairly well finished; Mr. J. Ellicott, gardener to H. W. Tug-

well, Esq., being second, and Mr. W. Taylor third, both showing very creditably. With any other white variety. Mr. A. Young was first with highly coloured Buckland Sweetwater; Mr. W. Iggulden being a good second with well-coloured Foster's Seedling; and Mr. W. Rye, gardener to J. Derham, Esq., third with Golden Champion in fairly good condition. Mr. A. Miller was the only exhibitor of Pine Apples, and was rightly awarded the first prize. Several Melons were shown, and, as usual, the majority were quite unfit to eat. Mr. E. Gibson, gardener to Earl Cowley, was easily first with a green-fleshed variety, showing Sutton's Perfection in perfect condition. Mr. J. Weston, was second with a good Golden Gem; and Mr. W. Long third with Victory of Bath. In the class for any other sorts, Mr. J. Compton, gardener to J. English, Esq., was first with Sutton's Scarlet Invincible; Mr. C. Holland second with Read's Hybrid; and Mr. S. Pearce, gardener to Captain Crothers, third; but in neither case was the quality first-rate. There were ten competitors with a dish of nine Peaches, Mr. W. Iggulden being first with a good dish of Barrington; Mr. G. Pymm, gardener to Mrs. Gouldsmith, second with a very fine and handsome dish of Exquisite; and Mr. E. Trotman, gardener to J. Colmer, Esq., third with a good dish of Vanguard. There were a similar number of dishes of six Peaches, exhibitors in the preceding class being debarred from again competing. Mr. W. Rye was first with a poorly coloured dish of Ford's Seedling; Mr. H. Lewis, gardener to Boddam Castle, Esq., being a good second with Royal George; and Mr. W. Carpenter, gardener to A. Cole, Esq., third with Bellegarde. Mr. W. Marchant was first for nine Nectarines, showing large Elruge, well coloured; and Mr. G. Pymm being second for a better dish of Pine Apple. Mr. W. Mattock had the best six Nectarines, Mr. F. Rice following, both showing fairly good Victoria; and Mr. J. Miller was third. Mr. G. Pymm was first for Cherries, Mr. E. Thomas second, and Mr. W. Haskell third, all having fine dishes of Morellos. The competition with three varieties of Pears was close and good. Mr. W. Rye was first, having good dishes of Doyenné du Comice, Madame Treyve, and Beurré d'Amanlis. Mr. W. Bannister, gardener to H. St. Vincent Ames, Esq., was a good second, his varieties being Pitmaston Duchess, Souvenir du Congrès, and Doyenné Boussoch; and Mr. A. J. C. Bess was third. There were twenty-five single dishes of Pears staged, Mr. T. Herve taking first prize for Williams' Bon Chrétien of good size and colour. Mr. Iggulden was second with Jargonelle, and Mr. E. Hall third with the same variety. A remarkably good lot of Plums were shown, there being as many as thirty-five dishes of Green Gages alone, and nearly as many in each of the other two classes. With the former Mr. E. Hall was first, Mr. J. Weston second, and Mr. W. Mattock third. In the class for any other dessert variety there were several good lots of Jefferson shown, but the preference was given to a fine dish of Washington shown by Mr. F. Dando, the second prize going to Mr. Miller for a good dish of Kirke's; and Mr. W. T. Smith was third with Washington, very highly coloured. Mr. J. Carpenter was first for culinary Plums, having a very fine dish of Fonthill, Mr. Bess following with a handsome dish of Goliath, and Mr. E. Hall was third with Fonthill. Apples were also plentiful and good. Mr. Hall was first for three dessert varieties, these consisting of Irish Peach, Quarrenden, and a seedling. Messrs. W. Woodman and J. Rogers were respectively second and third. Mr. Miller was first for three culinary varieties, showing fine dishes of Stirling Castle, Ecklinville Seedling, and Lodington. Mr. Bess was a good second, and Mr. H. Taylor third.

VEGETABLES.—A grand lot of these were shown both by gardeners and cottagers. In the former class for eight varieties Mr. A. Miller was a good first, this well-known successful exhibitor never probably staging a better lot; the kinds were Early London Cauliflower particularly good, Green Globe Artichokes, Old Red Tomatoes, Rousham Park Onions, Reading Russett Potatoes, the weakest dish shown, Ne Plus Ultra Peas, Snowball Turnips, and Ne Plus Ultra Runner Beans; Mr. T. Evry was second, and Mr. W. Smith third; four other good lots were shown. There were eleven collections of six varieties, Mr. E. J. Day taking the lead with good Incomparable Celery, White Spanish Onions, Perfection Tomatoes, Telegraph Peas, Reading Russett Potatoes, and Champion Scarlet Runner Beans. Mr. G. Snow, gardener to Col. C. W. Grant, was second, and Mr. J. Smith third, each having excellent produce. In a large class for four varieties Mr. C. Holbrook was a good first, Mr. R. Bolwell second, and Mr. J. Jones third. Tomatoes were well shown by several growers. Mr. Iggulden was first for a handsome dish of Carter's Perfection, R. B. Cater, Esq., second, and Mr. Peacock third. The baskets of salading were exceptionally good, Mr. T. Evry was first, and Mr. Tyleo second. Mr. G. Horsell was easily first for a collection of Gourds, having an immense heap in a great variety, Mr. W. Mead was a good second, and Mr. G. S. Bolwell third.

NOT FOR COMPETITION.—Mr. T. S. Ware, Tottenbam, had a grand exhibit of single Dahlias and Pompons in bunches, as well as Cactus and other Dahlias in variety. All were most tastefully set up, sprays of Asparagus being mixed with the blooms, and the bunches were bedded in moss and given plenty of room. This group attracted much attention, as also did another on the opposite side of the tent, and arranged by Messrs. G. Cooling and Son, Bath. In this instance cut Roses were principally exhibited, and of Teas Messrs. Cooling would appear to have unlimited quantities, large bunches of the best sorts and a whole box of W. A. Richardson in large bunches being shown. They also had a box of single Japanese varieties, single Dahlias in variety, and other interesting flowers.

CRYSTAL PALACE FRUIT SHOW.—SEPTEMBER 3RD AND 4TH.

AN exceedingly satisfactory Exhibition was held at Sydenham on Friday and Saturday last, one of the best that has taken place there for some years. The competitors were numerous in all the principal classes, and they staged some fine produce, especially remarkable for high merit being the handsome Grapes from Mr. W. Taylor, and the grand Pine Apples from Mr. C. Ross, which constituted the features of the Exhibition. An excellent method of arrangement was adopted by Mr. W. G. Head at this Show, the stages being disposed in two series of separate tables, with a convenient space between, instead of the two long continuous tables as before. So long as the competing collections can be placed near together the change is an improvement, for while it prevents, to a great extent, the crowding which frequently takes place, it also diversifies the general effect most agreeably, as Palms and other suitable fine-foliage plants were employed in the centre of the tables.

COLLECTIONS OF FRUIT.—The leading class of the Exhibition was that for a collection of fruit, not less than twenty dishes, to comprise four varieties of Grapes (two white, two black; two bunches of each variety), two Pines, two Melons, two dishes of Peaches, two of Nectarines, and two of Plums. There was an excellent competition, seven collections being entered, and some of these were so nearly equal in merit that they occupied the Judges a considerable time. Mr. J. H. Goodacre, gardener to the Earl of Harrington, Elvaston Castle, Derby, won the premier award (£12) with twenty-two dishes of good quality fruit, the majority well ripened, a point which evidently had considerable weight with the Judges. This collection included the following:—Grapes, Foster's Seedling, well ripened; Black Hamburg, medium-sized bunches of good colour; Muscat of Alexandria, very large handsome bunches, and Alnwick Seedling, bearing an excellent bloom; Hero of Lockinge and Conqueror Melons were good specimens; Walburton and Bellegarde Peaches were represented by fine fruits; Elruge and Victoria Nectarines of fair quality, Smooth Cayenne and Queen Pines of good size and well ripened, Hemskirk Apricots fine, Turkey Figs, Washington Plums, Morello Cherries, Strawberries, Jargonelle Pears, Warrington Gooseberries, Kirke's Plums, and Gladstone Apples. Mr. J. McIndoe, gardener to Sir J. M. Pease, Bart., M.P., Hutton Hall, Guisborough, was a good second (£8), showing a collection of thirty dishes, but if some of the less important of these had been omitted he would have rather improved the appearance of the collection as a whole. His Grapes included Duke of Buccleuch, with very large clean handsome berries; Black Hamburg, large bunches of fine colour; Trebbiano, handsome, and Gros Maroc, beautiful bunches and berries highly coloured. The other dishes were Scarlet Premier, Best of All, and Monarch Melons, the first named beautifully netted; Elruge and Humboldt Nectarines, Golden Eagle Peaches, very handsome; Princess of Wales, also large; Negro Largo and Brown Turkey Figs, Moorpark Apricots, Green Gages, late Duke Cherries, Large Red, White Dutch and Black Naples Currants, Whitesmith and Warrington Gooseberries, Clapp's Favourite Pears, Worcester Pearmain and Grand Duke Constantine Apples, Imperial Lemons, Exquisite Oranges, and Kirke's Plum. The third position after a close examination was adjudged to Mr. J. Roberts, gardener to Messrs. Rothschild, Gunnersbury Park, who had exactly the stipulated minimum number of dishes—viz., twenty. The fruits were all distinguished by their clean appearance, the following being especially noteworthy:—Dymond Peaches, Smooth Cayenne Pine Apple, Morello Cherries, Williams' Bon Chrétien Pears, Moorpark Apricots, Red Astrachan Apples, La Grosse Sucrée Strawberries, with Muscat of Alexandria, Madresfield Court, Trebbiano, and Black Hamburg Grapes in capital condition.

A second class was provided for a collection of twelve dishes of fruit, in which four competitors entered, Mr. J. Roberts in this case scoring an easy success, taking the first place with excellent examples of Gros Maroc and Muscat of Alexandria Grapes, Charlotte Rothschild Pine Apple, Williams' Bon Chrétien Pears, Brown Turkey Figs, Victoria Nectarine, William Tillery Melon, Morello Cherries, Marquis of Downshire Peaches finely coloured, Moorpark Apricots, Blenheim Orange Melon, and La Grosse Sucrée Strawberries. Mr. J. McIndoe followed, again showing Golden Eagle Peaches in splendid condition, Trebbiano and Black Hamburg Grapes being also of fine quality. Mr. A. Miller, gardener to W. H. Long, Esq., M.P., Trowbridge, secured the third position with good fruits, Black Hamburg Grapes, Bellegarde Peaches, Hunt's Tawny Nectarine and Brunswick Figs being prize-worthy dishes. With a collection of eight dishes Mr. Pratt, gardener to the Marquis of Bath, Longleat, won first honours, the Grapes in his contribution being very fine. Three bunches of handsome Muscat of Alexandria, weighing 11½ lbs., and the same number of Black Hamburg weighed 12½ lbs. Figs, Apricots, Peaches, Nectarines, Melons, and Plums were also of good quality. The second place was taken by Mr. S. Pullman, gardener to R. B. Sheridan, Esq., Frampton Court, Dorchester, whose Black Hamburg Grapes, Pine Apple Nectarines, and Dymond Peaches were the best dishes; Mr. H. Ocle, Bickling Hall, Aylsham, being third.

GRAPES.—Eleven classes were devoted to Grapes, and, excluding those in baskets, about 400 bunches were staged. They varied considerably in merit from absolutely green Muscats to some of the best finished Grapes that have been seen this season, but taking them generally well coloured samples predominated.

The large class for ten varieties, two bunches of each, was well filled, four exhibitors staging the requisite number. Mr. J. H. Goodacre was again the premier exhibitor, showing good fairly coloured but not extraordinary bunches of Muscat Hamburg, Duke of Buccleuch, Lady Downe's, Alicante, Foster's Seedling, Madresfield Court, fine bunches and berries; Muscat of Alexandria, large clean bunches; Alnwick Seedling, Black Hamburg, and Golden Queen. Mr. H. W. Ward, gardener to the Earl of Radnor, Longford Castle, Salisbury, was a close second, showing Muscat of Alexandria, Madresfield Court, Buckland Sweetwater, Alicante, Trebbiano, Alnwick Seedling, Foster's Seedling, Lady Downe's, and Gros Maroc, all clean well ripened samples. Mr. Wildsmith, gardener to Viscount Eversley, Winchfield, was third with good bunches of Gros Maroc, Alnwick Seedling, Muscat of Alexandria, Alicante, White Tokay, Gros Guillaume, Black Hamburg, White Frontignan, and Madresfield Court.

The next class for five varieties of Grapes, two bunches each, was important and interesting, also including some of the finest Grapes in the Show. There were six competitors, and Mr. W. Taylor, gardener to J. Chaffin, Esq., Bath, gained a remarkable victory, repeating his success of a few days previously at Bath, securing the premier honours for grand specimens, both in size of bunch, berries, and colour. The varieties were Alicante, large bunches superbly coloured; Gros Maroc, excellent in bunch and berry; Madresfield Court, splendid bunches, but with rather small berries; Muscat of Alexandria, richly coloured, one bunch being extremely handsome in this respect, and Alnwick Seedling with remarkably fine berries. These admirable specimens proved how well Mr. Taylor deserves his reputation as a Grape grower. One of the Alicante bunches was a model both as regards form and finish; and the berries in one of the bunches of Gros Maroc were so large and round that many gardeners thought the variety was Gros Colman. We have, however, ascertained from Mr. Taylor that both the Gros Maroc bunches were cut from the same Vine. The second prize was won by Mr. W. Pratt, but beautiful as were the Longleat Grapes, they were several points behind the first. His Muscat of Alexandria were extremely handsome; Lady Downe's, Black Hamburg (9½ lbs.), Mrs. Pince, and Alicante

being all meritorious. Mr. Elphinstone, Shipley Hall Gardens, Derby, followed, showing Gros Colman, large, and of fine colour; Gros Guillaume, large berries; Muscat of Alexandria, Black Hamburg, fine bunches, and Canon Hall Muscat. After the awards had been made it was found that a "shoulder" had been tied to the bunch of the last-named variety, and a protest was entered by one of the unsuccessful exhibitors.

Five classes were devoted to special varieties of Grapes—namely, Black Hamburg, Muscat of Alexandria, Gros Maroc, Madresfield Court, and Alicante—with one class each for any other white and any other black variety. Taking these classes in the order they are named, the following were the results of the competition:—

Black Hamburg.—Eight exhibitors competed with three bunches of Black Hamburg, Mr. Pratt winning first honours with large handsome bunches, but their appearance was slightly injured by the bloom having been partially rubbed off one of them. The second place was taken by Mr. Moorhouse, gardener to J. W. Temple, Esq., Groombridge, Tunbridge Wells, who also had large compact bunches, but rather small berries. Mr. W. Howe, gardener to H. Tate, Esq., Park Hill, Streatham Common, was third with medium sized bunches, well finished.

Muscat of Alexandria.—There were nine exhibitors of this favourite Grape, and again Mr. Pratt took the lead with clean beautiful bunches and fine berries, the three bunches weighing 9½ lbs. Mr. J. Roberts followed with smaller bunches, but very clean and well ripened, Mr. C. J. Goldsmith being a good third. Most of the other exhibitors staged samples that were far from ripe, one in particular having three very green bunches.

Gros Maroc.—This attractive Grape was well shown by seven competitors, Mr. Elphinstone securing premier honours with excellent bunches and fine berries, superbly coloured, and bearing a dense bloom. Messrs. Rivers & Son, Sawbridgeworth, were second, their bunches being smaller than the first, but beautifully coloured. Mr. J. McIndoe took the third prize for medium size, compact, symmetrical bunches, finely coloured. Nearly all those entered were notable for their colour and bloom, differing chiefly in size.

Madresfield Court.—The competition was smaller in this class, only five entering, and none of the specimens were in their best condition as regards colour, though in size of bunch and berries they were fairly satisfactory. Mr. J. Bury, gardener to A. Richards, Esq., Tewkesbury Lodge, Forest Hill, was awarded the first prize for capital well-formed bunches, the berries also large, but wanting in colour. Mr. H. Perkins, gardener to the Right Hon. W. H. Smith, M.P., Henley-on-Thames, was second with wonderfully large bunches and berries, but they were not fully ripe, and the centre bunch was slightly spotted, otherwise they were admirable examples of this beautiful Grape, which Mr. Perkins can evidently grow well. The third place was taken by Mr. F. Jordan, gardener to B. Foster, Esq., Godalming.

Alicante.—Nine exhibitors staged in the Alicante class, and the majority were good examples of this variety. Mr. W. Howe gained the first place for splendid bunches superbly coloured, defeating Mr. Pratt, who was second with large bunches weighing 9½ lbs., but somewhat rubbed and irregular in size. Mr. W. Tidy, gardener to J. R. Holland, Esq., Great Stanmore, Middlesex, followed with fair bunches.

With any other white variety there were thirteen competitors. Mr. J. Wallis, gardener to the Rev. W. Sueyd, Keele Hall, Newcastle, Staffs, was first with Mrs. Pearson in fair good condition for that variety, but not better than Mr. Berry's beautiful examples of Foster's Seedling, which were placed second. Mr. Perkins was third for large bunches of the same variety. Mr. W. H. Ward had the best "any other black," medium sized but handsomely coloured bunches of Alnwick Seedling. Mr. Hudson, gardener to H. J. Atkinson, Esq., M.P., Gunnersbury House, Acton, followed with the same variety, and Mr. J. McIndoe with Gros Colman, large, but not first-rate in colour. Amongst seven exhibitors of baskets of black Grapes Mr. W. Howe was first for beautiful highly coloured bunches of Black Hamburg, Mr. J. McIndoe was second with the same variety, and Mr. Hudson third with Alnwick Seedling weighing 13½ lbs. In the similar class for white Grapes Mr. C. J. Goldsmith took the lead with Muscat of Alexandria handsomely coloured, Mr. McIndoe was second with excellent examples of Duke of Buccleuch, and Mr. Osman, gardener to L. J. Baker, Esq., Ottershaw Park, Chertsey, secured the third place with Muscat of Alexandria finely ripened.

PINE APPLES.—Though the competition was not very keen with these fruits, the remarkably handsome specimens of Smooth Cayenne which gained Mr. C. Ross, Welford Park Gardens, Newbury, the first prize, constituted one of the principal features of the Exhibition. They were grandly formed noble fruits, richly coloured, and weighed 9 lbs. 2 ozs. and 9 lbs. 6 ozs. respectively. Mr. W. T. Smith and Mr. McIndoe, who followed in the order named with the same variety, both had good fruits, but far behind those from Mr. Ross, who has previously given us some good examples of his skill in the cultivation of Pine Apples. The Queen Pines were of an ordinary character, Mr. W. T. Smith and Mr. McIndoe being respectively first and second.

PEACHES AND NECTARINES.—These fruits were numerous and well shown in the several classes devoted to them. Eight entered with four dishes of Peaches, Mr. J. McIndoe leading with large ripe fruits of Stirling Castle, Princess of Wales, Golden Eagle of fine colour, and Violette Hâtive, also highly coloured. Mr. C. J. Goldsmith had Lady Palmerston, Prince of Wales, Barrington, and Royal George in his second-prize collection; and Mr. H. G. Ocle, who was third, had Desse Tardive, Barrington, Royal George, and Lord Palmerston. No less than seventeen entered with one dish of Peaches; and Mr. W. H. Divers, gardener to J. T. Hopwood, Esq., Ketton Hall, Stamford, won the chief prize with admirable fruits of Prince of Wales, large and finely coloured. Mr. W. T. Smith was second; and Mr. J. Ridout, gardener to T. B. Haywood, Esq., Woodhatch, Reigate, was third with Violette Hâtive.

Seven collections of four dishes of Nectarines were staged, Mr. Wm. Elphinstone winning first honours for medium-sized finely coloured and ripe fruits of Elruge, Pitmaston Orange, Pine Apple, and Violette Hâtive. Mr. G. H. Richards, Somerley Gardens, Ringwood, Hants, followed with Pine Apple, Victoria, Pitmaston Orange, and Elruge, Mr. J. Roberts being third for Victoria, Downton, Balgovan, and Murrey, most of the others shown being unripe. Of the fifteen single dishes of Nectarines Mr. M. Hanagan, gardener to R. C. Naylor, Esq., Hooton Hall, Chester, had the best

ripe well coloured fruits of Pine Apple. Mr. S. Pullman and Mr. A. Evans followed with the same, none of the others being so ripe as they should be.

A class was also provided for a collection of six varieties of Peaches and six of Nectarines, in which Mr. Elphinstone secured leading honours with good fruits of Peaches Princess of Wales, Royal George, Bellegarde, Barrington, Walburton Admirable, and Noblesse; Nectarines, Victoria, Elruge, Pine Apple, Pitmaston Orange, Albert Victor, very green; and Violette Hâtive. Messrs. T. Rivers & Son gained the second place, showing handsome examples of Peaches, English Galande, Stirling Castle, Dymond, Princess of Wales, Lord Palmerston, and Dr. Hogg; Nectarines, Albert Victor, Pine Apple, Goldoni beautiful colour, Rivers' Orange, Otway, and Dryden. Mr. W. H. Divers, who was third, had Peaches Prince of Wales, Dr. Hogg, Violette Hâtive, Rivers' Early York, Grosse Mignonne, and Goshawk; Nectarines, Albert Victor, Lord Napier, Pine Apple, Stanwick Elruge, Humboldt, and Violette Hâtive.

PLUMS.—A capital show of Plums was formed by the exhibits in the three classes for red, purple, and yellow varieties. There were eight collections of four dishes of red varieties, Mr. G. H. Wingfield, Brighton, having the best—Magnum Bonum, Prince of Wales, Victoria, and Cooper's. Mr. J. Wells, gardener to R. Ravenhill, Esq., Windsor Forest, followed, showing Pond's Seedling, Goliath, with Denyer's and Frogmore Victoria. Mr. Ward was third for Pond's Seedling, Font Hill, Goliath, and Victoria, all of good size and well ripened. Mr. Wingfield was again first in the purple variety class amongst eleven exhibitors, showing fine fruits of Diamond, Mitchelson's, Purple Gage, and Goliath. Mr. Richards followed with Diamond, Prince Englebert, Kirke's and Belgian Purple; Messrs. Rivers & Son taking the third place, having Belgian Purple, Late Prolific, and Prince Englebert in good form. Seventeen entered with four dishes of yellow or green Plums, and here again Mr. Wingfield was first for Washington, Green Gages, Golden Drop, and Egg Plums. Mr. Neighbour, Bickley, followed, having White Magnum Bonum, Jefferson's, Green Gage, and Washington; Mr. J. Wells taking the third place with Jefferson's, Oullins Golden, and Washington, very fine.

MELONS.—The competition was strong in the two classes for scarlet and green-fleshed Melons. In the former fourteen entered. Mr. J. Lambert, gardener to H. W. Segelcke, Esq., Herne Hill, took the lead with Hero of Bath. Mr. O. Goldsmith, Polesden, was second with Oliver Goldsmith, and Mr. McIndoe third with Scarlet Premier. In the green-flesh variety class Mr. G. Pullman was first with Golden Perfection, Mr. W. Wildsmith second, and Mr. J. Morgan third, both with neat fruits.

FIGS.—Ten exhibitors staged two dishes of Figs. Mr. M. S. Fuller, Lancing, Sussex, being first with Brown Turkey and Brunswick of good size and well ripened; Mr. Richards was second for the same varieties, and Mr. Wallis third with White Ischia and Brown Turkey.

APPLES AND PEARS.—There was a fair display of these, but it seemed to be somewhat too early for the majority, especially in the Pear classes. With a collection of twelve varieties of Apples Messrs. J. Butler, A. Waterman, and W. S. Fuller were the prizetakers, also with three dishes of Apples the two first were in the same positions, followed by Messrs. G. & J. Lane, St. Mary Cray. For ten dishes of Pears Messrs. Butler, Waterman, and Hunter were the successful competitors, and with three dishes Messrs. Wingfield, Butler, and Waterman were placed in the order named.

In the fruiterers' class, for a collection of fruit, Mr. G. H. Wingfield was first, followed by Mr. G. H. Redman and Mr. E. Peters, all of Brighton. Mr. C. J. Goldsmith had the best six dishes of Tomatoes—namely, Stamfordian, Trophy, Vick's Criterion, Acme, and Read's Perfection. Mr. C. Jennings, gardener to J. Freeman, Esq., Farnborough, and Mr. Waterman were second and third, also with good fruits.

PLANTS AND CUT FLOWERS.—Prizes were offered for a group of early-flowering Chrysanthemums, but it was too soon to obtain these in their best condition. Mr. N. Davis, Camberwell, had far the best and most effective group, easily winning the first prize, his collection comprising some bright and pretty varieties, such as Blushing Bride, Flora, La Vierge, Madame Desgrange and G. Wermig. Mr. Piercy was second, and Mr. H. James third. The only other class for plants was six Cockscombs, but they were not of remarkable merit, Mr. R. Spinks, Horley, Mr. J. R. Tranter, and Mr. J. Lambert being the prizetakers in that order.

In the cut flower classes Gladioli were capitally represented, the Asters from Mr. J. Walker, Thame, Mr. J. Jones, Mr. W. Sloper, and Messrs. Saltmarsh & Son were fine. Hollyhocks were admirably shown by Messrs. Webb & Brand, Saffron Walden, in the open class, and by Mr. H. Whitton Bedale, Yorkshire, in the amateurs' class. The collections of stove and greenhouse flowers were of great merit, Mr. T. N. Penfold, Mr. A. Gibson, and Mr. H. James gaining the awards in the order named, Mr. Prewett of Hammersmith also having a meritorious collection, including some fine Orchid flowers.

MISCELLANEOUS.—Special prizes were awarded to the following exhibitors: Messrs. T. Rivers & Son, for a handsome group of Vines and fruit trees tastefully arranged. Messrs. W. Paul & Son, Waltham Cross, for an extensive collection of Apples; to Mr. J. R. Hannah, gardener to Sir H. E. Maxwell, Bart., M.P., for a huge bunch of Trebbiano Grape weighing 2½ lbs.; to Messrs. J. Laing & Co., Forest Hill, for an effective group of Tuberosa Begonias and fine-foliage plants; to Mr. T. Garratt for African Marigolds and Zinnias; to Mr. R. Mann for African Marigolds; Mr. W. Gordon, Twickenham, for a group of Lilies; and to Mr. R. W. Proctor for a collection of Roses, Pinks, and Carnations. Messrs. G. Bunyard & Co., Maidstone, showed a collection of fine Apples, as also did Messrs. Cheal & Son of Crawley; and a basket of beautiful fruit of the Duke of Buccleuch Grape was staged by Messrs. Wm. Thomson & Sons, Clovenfords, the berries very large and clean, but a trifle green in colour. First-class certificates were awarded to Mr. J. Douglas for Picotee Terra Cotta, and to Messrs. Webb and Brand for Hollyhock Grace, which have been previously described.

THE NATIONAL DAHLIA SHOW.—SEPTEMBER 3RD AND 4TH.

THIS Exhibition was held at the Crystal Palace, Sydenham, on the same days as the fruit Show, and the two constituted a most extensive and varied display. The Dahlias were represented by numerous admirable collections, affording ample proof that these plants are by no means losing favour with cultivators. The general quality of the blooms was satisfactory, and the competition was so close in some of the principal classes that the Judges

had a formidable task in determining their relative positions. In the large class for forty eight indeed they found it necessary to award two equal first prizes, though some thought that sufficient difference could be detected to avoid this. The show and fancy flowers have a stat-ly symmetry of form that will always find them many admirers, but to the general public the exquisitely neat Pompons and graceful single varieties were more pleasing, especially now that exhibitors set their flowers up in such an elegant manner with their own or other foliage.

SHOW VARIETIES.—In Class A for forty-eight blooms, distinct (nurserymen), six collections were staged, equal first prizes being accorded to Messrs. Keynes, Williams & Co., Salisbury, and Mr. Turner, Slough, both having superb blooms clean and bright. The Salisbury stands comprised the following varieties: Hugh Austin, Prince of Denmark, Harrison Weir, Henry Walters, Defiance, Georgiana, Prince Bismarck, Constance, Joseph Ashley, Colonelist, Rebecca, Mrs. Harris, Mrs. John Laing, T. Goodwin, Rev. J. M. B. Camm, Mrs. Foreman, Royal Queen, Seraph, Thomas Hobbs, Henry Glasscock, Illuminator, Mrs. Jeffard, Rosy Morn, Imperial, Cardinal, Shirley Hibberd, Mrs. Langtry, C. Wyatt, Ethel Britten, Mrs. Spofforth, Mrs. Stanscombe, Mrs. W. Slack, Vice-President, Harry Keith, William Rawlings, Buttercup, John Wyatt, General Gordon, Miss Cannell, Mrs. Glasscock, James Cocker, Mrs. Gladstone, Lord Chelmsford, Gloire de Lyon, and several unnamed seedlings. The Slough collection included the undermentioned varieties: Mr. Wm. Slack, John Wyatt, Georgiana, Statesman, Sunbeam, J. Service, Prince of Denmark, Mrs. Hodgson, Harry Keith, Flag of Truce, John Bennett, Mrs. Kendall, J. Stephens, Ethel Britten, Imperial, Bendigo, G. Rawlings, T. J. Saltmarsh, J. Ashley, Mrs. Langtry, Thos. Hobbs, Mrs. S. Hibberd, Prince of Denmark, J. H. Keynes, Rosetta, Seraph, Burgundy, H. W. Ward, Mr. G. Harris, Herbert Turner, Constance, Champion Rollo, John Standish, J. Cocker, Hon. Mrs. Wyndham, Mrs. Jeffard, Clara, Rev. J. Godday, Hope, Wm. Rawlings, Cecilia, Ovid, Mrs. Gladstone, Mrs. Harry Turner, and unnamed seedlings. Mr. W. Boston, Bedale, and Messrs. Heath & Son, Chelmsford, were third and fourth. There were seven exhibitors of twenty-four show blooms, the winners being Mr. John Walker, Thame, Messrs. C. Kimberley & Son, Stoke near Coventry, Messrs. Harkness & Sons, Bedale, and Messrs. Saltmarsh and Son, Chelmsford. For twelve blooms, also from nurserymen, Mr. G. Humphries, Langley, Chippenham; Messrs. Rawlings Bros., Romford; John Burrell & Co., Cambridge; and Cheal & Son, Crawley, succeeded in obtaining the honours in the order named.

Three classes for show varieties were similarly devoted to amateurs, and some fine blooms were staged in the premier collections. With twenty-four blooms Mr. R. Petfield, gardener to A. J. Thornhill, Esq., Diddington, Buckden, Hunts, secured the first place with even, symmetrical, and fresh blooms of the following:—Miss Cannell, J. Ashby, Seraph, G. Rawlings, Constance, J. Stephens, Mrs. Langtry, Prince Bismarck, Primrose Perfection, Imperial, Flag of Truce, J. W. Lord, T. J. Saltmarsh, J. Cocker, Mrs. Gladstone, S. Hibberd, Earl Ravensworth, J. Vick, Harrison Weir, W. Rawlings, Mrs. G. Rawlings, John Standish, Royal Queen, and John Wyatt. Mr. H. Glasscock, Rye Street, Bishops Stortford, was a close second, showing very fine blooms. Mr. T. Hobbs, Bristol, was third, and Mr. T. Garratt, Bishops Stortford, fourth. Fourteen competitors entered with twelve show varieties, Mr. C. Hockney, Greenfield House, Stokesley, winning the premier honours for handsome examples of Wm. Rawlings, Earl Ravensworth, Harrison Weir, Criterion, Pioneer, Clara, Prince Bismarck, Mrs. Gladstone, James Vick, Ethel Britten, Shirley Hibberd, and Goldfinder. Mr. J. Tranter, Upper Assenden, Henley-on-Thames, was second with a good collection, of which the following were notable:—John Henshaw, George Barnes, James Cocker, Joseph Ashby, Hope, and John Bennett. Mr. W. H. Apethorpe, Albion Brewery, Cambridge, and Mr. H. Whitton, Bedale, were third and fourth. Of the ten exhibitors in the six variety class Mr. J. Perkins, London Road, Chippenham, was the most successful, taking the first prize with Mrs. Langtry, Mrs. Gladstone, Hope, J. Stephens, Mrs. Harris, and Aurora. The other prizes were secured by Mr. A. Tunbridge, gardener to the Rev. W. Trimmer, Broomfield, Chelmsford; Mr. H. Steer, New Eltham; and Mr. T. W. Girdlestone, Sunningdale, Berks.

FANCY VARIETIES.—These were not nearly so numerous as the show varieties, but were very satisfactory in quality, and their bright varied colours render them greater favourites with some persons. Messrs. Keynes, Williams & Co. had some handsome blooms in their premier stand of twenty-four varieties, and were followed by Mr. C. Turner, Mr. W. Boston, and Mr. H. Clarke, Leeds. Mr. J. Walker, Thame, had the best twelve fancy blooms in a class of nine exhibitors. His varieties were C. Wyatt, John Forbes, Peacock, John Salter, Professor Fawcett, Mrs. Browning, Fanny Sturt, Tippy Bob, Florence Sturt, Flora Wyatt, Chorister, and Prospero. Mr. G. Humphries was a good second, Mr. Campbell, Blantyre, third, and Paul & Son, Cheshunt, fourth.

The best amateurs' twelve fancy blooms came from Mr. C. Hockney, who had excellent specimens of Rebecca, H. Glasscock, Prospero, Mrs. Saunders, Polly Perkins, Flora Wyatt, Mrs. N. Hall, Miss Large, Peacock, Gaiety, Fanny Sturt, and G. Barnes. Mr. R. Petfield followed, showing A. F. Barron, Mrs. Saunders, W. G. Grace, and Henry Eckford in fine condition. Mr. H. Vincent, gardener to J. Hart, Esq., Keymers, Sussex, and Mr. H. Glasscock were third and fourth amongst five exhibitors. Fifteen stands of six fancy varieties were entered, Mr. A. Whitton, Askew, leading with C. Wyatt, Flag of Truce, Mrs. N. Hall, Mrs. Saunders, Hugh Austin, and Lottie Eckford. Mr. J. Perkins was placed second, but many thought his blooms were entitled to the first place. The best varieties were Rev. J. M. B. Camm, Rebecca, Chorister, Lottie Eckford, and Egyptian Prince. Mr. J. G. West and Mr. W. H. Apthorpe were third and fourth.

The premier show bloom was a fine example of John Standish from Mr. J. Walker, and the premier fancy bloom was an equally beautiful specimen of Henry Eckford from Mr. Turner.

The Turner Memorial prize for twelve show and six fancy varieties did not bring many competitors, only three collections being entered. Mr. J. G. West, Cornwallis, Brentwood, being the successful exhibitor with neat blooms—Show varieties:—Mrs. Gladstone, Prince Bismarck, Mrs. S. Hibberd, C. Wyatt, T. J. Saltmarsh, Mrs. Langtry, Mr. G. Harris, Miss Cannell, Wm. Rawlings, Georgiana, and Goldfinder. Fancy varieties:—Rebecca, Henry Eckford, Hugh Austin, Chorister, Gaiety, and Mrs. N. Hall.

POMPON VARIETIES.—A charming display of these neat and graceful Dahlias was formed by the numerous collections entered both by nurserymen and amateurs. Five stands of twenty-four varieties were contributed, Mr. Turner winning premier honours, and Messrs. Keynes, Williams & Co. were placed second, but many preferred the latter, and the Judges might as well have awarded equal first prizes in this case as with the forty-eight show varieties. The best of Mr. Turner's were Golden Gem, Dora, Little Arthur, Isabel, Rosetta, Lady Blanche, Fair Helen, and Ernest. In Messrs. Keynes and Williams' stand very notable were Golden Gem, Darkness, Lady Blanche, Dora, Northern Light, Mabel, and Gem. The only fault that could be urged against the stand was that too many yellow varieties were included, while, on the other hand, Mr. Turner had several very dull coloured varieties. Messrs. J. Cheal & Son were third, and J. Gilbert, Ipswich, fourth. With twelve Pompons Messrs. Paul & Son, Cheshunt, were first, showing neat and pleasing blooms of Royalty, Pure Love, Fair Helen, Dove, Gem, Darkness,

Numerous seedlings were exhibited, and first-class certificates were awarded for the following :—

Nellie Tranter (J. R. Tranter) a beautiful yellow self variety, a very fresh and bright tint, the bloom of good substance and excellent form.

Bendigo (C. Turner).—A handsome show variety of a warm crimson colour, the bloom very deep and symmetrical.

Florence (C. Turner).—A show variety of a bright yellow hue and excellent form.

Defiance (Keynes, Williams & Co.).—A magnificent bloom of a peculiar scarlet shade. A fine show variety, very deep, and of great substance.

Colonist (Keynes, Williams & Co.).—A show variety of excellent form, very distinct, the colour a peculiar terra-cotta orange, tinged with crimson.

R. T. Rawlings (Rawlings Bros.).—Another bright yellow show variety; making the third certificated at this Show.



Fig. 31.—EASTON LODGE, DUNMOW. (See page 232.)

Fanny Weimer, Lady Blanche, and Little Bobby. Messrs. J. Henshaw, J. Burrell & Co., and Apthorpe were the other prizetakers, while for six Pompons Messrs. H. Glasscock, J. West, A. Tunbridge, and J. Bullard were placed in that order.

SINGLE VARIETIES.—Only two classes were appropriated to single varieties—namely, one for twelve and the other for six. In the first-named there were seven entries, Mr. Turner being accorded first honours for some charming varieties, bright in colour and neat in form. They were Defiance, Duchess of Westminster, Negress, Ellen Terry, Juno, Mary Anderson, Mrs. Bowman, Dorothy, Harlequin, Paragon, Rupert, and Yellow Queen. Messrs. Keynes, Williams & Co. were second, their best varieties being Chilwell Beauty, Queen of Singles, Mauve Queen, Magnificent, and Negress. Messrs. Cheal & Son and Paul & Son were respectively third and fourth. Mr. T. W. Girdlestone was deserved awarded the first prize for six single varieties, showing extremely graceful, light, and pleasingly coloured blooms of Walter Ware, Marion Hood, Sunningdale White, Sunningdale Star, Brightness of Sunningdale, and Calico, rosy mauve margined with white, a very pretty variety, and, with most of the others, have been raised by the exhibitors. Mr. H. Vincent and Mr. Spinks were second and third with pretty varieties.

Mrs. Theobald (Rawlings Bros.).—A beautiful variety of the show type, rich rosy mauve, very neat in form and of good substance.

Alice (J. Burrell & Co.).—A charming neat Pompon variety, crimson tipped with white, very pretty and distinct.

Dandy (Turner).—A warm crimson self Pompon, excellent shape.

Don Juan (Turner).—A black maroon self Pompon, the blooms small and most symmetrical.

Mrs. Coninck (T. S. Ware).—A single variety, with broad finely formed florets, white at the base, deeply tipped with rosy lilac.

Amos Perry (Turner).—One of the Paragon type, but of a deeper richer colour, with a narrow margin of a lighter shade.

Chilwell Beauty (Turner, Cannell & Sons).—A very distinct single variety, the florets bright orange in the centre edged with scarlet, the general outline of the bloom being good and the florets broad.

Black Knight (H. Cannell & Sons).—Certificated as a decorative variety; the blooms of medium size, very freely produced, and intensely deep maroon, nearly black.

Charming Bride (H. Cannell & Sons).—This was also certificated as a decorative variety; the florets being white tipped with crimson, and the blooms of good form.

Miscellaneous.—Several collections of Dahlias not in competition were exhibited, and notable amongst these were the stands from Messrs. H. Cannell & Sons, Swanley, which comprised a fine selection of the leading varieties in each section. Mr. T. S. Ware, Tottenham, contributed a varied collection of singles and Pompons very tastefully arranged with Asparagus sprays. Messrs. Cheal & Son, Crawley, also had a choice display of single and other varieties, and seedlings were shown by several growers.

EASTON LODGE, DUNMOW.

THE county of Essex generally is not remarkable for its picturesque beauty, and the majority who have not explored it seem to have formed the idea that it is one of those flat uninteresting tracts of land such as are often found on the banks of rivers, especially on the opposite side of the German Ocean. As regards that portion of the county which borders the Thames, and with which Londoners at least are most familiar, this is quite true, but a few well-chosen excursions inland, and particularly to the north of Chelmsford, will reveal landscape attractions that were quite unexpected. The beauty is of a quiet homely character, the land undulating and in some districts pleasingly wooded, giving typical English rural prospects which, though less striking than those in the more holdly varied and hilly counties, yet have a refreshing and peaceful effect that all lovers of country scenes can fully appreciate. One such district is found in the neighbourhood of Dunmow that was formerly so noted for its peculiar "Flitch of Bacon" custom, and a drive of four miles from this little town to the residence of Lord and Lady Brooke, Easton Lodge, effectually dispels any illusions formed respecting the uninteresting character of Essex scenery, while at Easton itself is found one of the grand old parks for which England is famed.

Dunmow is readily reached by the Great Eastern line from Liverpool Street to Bishops Stortford, and from there a branch line runs to Dunmow, but Takeley on the same branch and Elsenham on the Cambridge line are nearly equal distances from Easton Lodge. A public road extends through the park, and a most agreeable thoroughfare it is in the summer and early autumn when the trees are in their best condition. The park comprises over 1000 acres, and is beautifully wooded, the great features of the place being the old Oaks, some of which have attained enormous dimensions with large gnarled boles and widely spreading heads that are most picturesque. Some that must date back several centuries have now little more than a trunk-like shell remaining to show what giants they were in their prime, but there are plenty of others which are still in full vigour, and for a kind of sturdy nobility we have no trees to equal a full-grown Oak; none of the quick-growing trees so usually planted can be compared with them. Sometimes, however, Oaks are seen planted in most unsuitable positions, a remarkable instance of which recently came under notice. An avenue of closely planted Oaks had been formed leading to a mansion, and a sorry appearance they had, for a great length of time would be needed to enable them to assume anything like their proper proportions. In such a position a quick-growing tree of any kind would have been far more appropriate, and if Oaks are to be seen at their best they must be scattered in small clumps, or preferable as single specimens, as they are at Easton.

Approaching the house by the public road a good view of the south-west part is obtained, and the first impression is that the "Lodge" is a very modest title for such a substantial and handsome structure. It is built chiefly in the Tudor style, only one small portion in the Elizabethan style remaining of the original house erected by Sir William Maynard in 1593. The old house was nearly destroyed by fire in 1847, and the present structure erected in its place at the cost of £12,000. The illustration (fig. 31) shows the north-east side, and is from a photograph by Mr. Stacey of Dunmow. On the left is a remarkably old and handsome *Catalpa syriaca*, which flowers abundantly, and at the time the photograph was taken it was very beautiful, loaded with its large heads of funnel-shaped spotted flowers, like small *Gloxinias*. The principal flower garden is situated on this side of the house, and though of simple design is extremely effective, and has been capitally planted this season, attracting the admiration of many visitors. The beds generally are arranged in the form of a hell, the base of which is nearest to the house. There are four outer long beds forming the outline, filled in the centre with *Pelargonium Manglesi* and *Verbena venosa* mixed, a row of *Iresine Lindenii* round this, and a broad outer band of *Cerastium tomentosum*. These have a beautiful appearance, and the mixture is one of the most pleasing we have seen. Next to these outer beds is a series of eight smaller beds, four of which, in opposite, are filled with *Pelargonium Vesuvius* edged with a double row of *Lobelia Brighton Blue*, two are filled with *Pelargonium Bijou*, and two with *Pelargonium Maréchal MacMahon*, each being edged with the *Lobelia*, like the others. An inner series of eight horseshoe-like beds are planted alternately with *Tropæolum Vesuvius* edged with *Cerastium tomentosum*, and a dwarf *Ageratum* edged with *Pyrethrum Golden Feather*. The centre circular bed has *Centaureas* in the middle, surrounded by a star of *Coleus Verschaffeltii*, angles of *Pyrethrum*, and margined with *Echeverias*. In other portions of the garden are several other good beds, notably a long scroll near the conservatory, planted with *Lobelia Brighton Blue* edged with *Antennaria*, and with small circles in the loops of the scroll filled with *Biota aurea* in the centre, surrounded by *Coleus Verschaffeltii*, and the whole design is enclosed by a band of *Golden Harry Hieover Pelargonium*. A large carpet bed opposite this has also been very tastefully designed, having a groundwork of *Antennaria* with a tracery of *Alternanthera amœna*, *magnifica*, *paronychioides* and *aurea*, and a few scattered *Chamæpeuces*

and *Grevillers*. The whole of the bedding is very unpretentious, but extremely effective, and it has been repeatedly proved that the simple well-chosen methods of planting are the most satisfactory.

The garden altogether comprises about twelve acres, of which $3\frac{1}{2}$ acres are included in the kitchen garden. Rosos are an important feature at Easton, about 2300 plants being placed out in the quarters specially reserved for them. Numerous varieties are grown either as bush or standard trees, but chiefly as the former, and of some varieties like *Charles Lefebvre*, which is a great favourite with Lady Brooke, there are many heds. Other favourites are *La France*, *Baroness Rothschild*, *Dr. Andry*, *Capitaine Christy*, and *Marie Baumann*, together with the floriferous little *William Allen Richardson*, which is grown against a wall and has been very satisfactory. All the Roses are treated liberally in the shape of manurial applications, and they thrive very satisfactorily, yielding great quantities of flowers to supply the large demands. The glass houses are not very numerous, but there is a neat conservatory that is kept well furnished, and which has a particularly beautiful appearance in November when the *Chrysanthemums* are in flower, as these form another specialty at Easton are then effectively arranged on the stages and up the roof so as to constitute a kind of floral avenue. In the kitchen garden are vineries, Cucumher and Melon houses, frames, &c., with a Peach house (erected a short time since by Messrs. Boulton & Paul) 80 feet long, and planted with Princess of Wales, Barrington, Stirling Castle, Early Louise, and Nectarines Lord Napier and *Violette Hâtive*, healthy trees that have already yielded well and give excellent promise for the future.

The kitchen garden is well stocked, and, like the whole of the garden, kept in admirable condition, very creditable to the gardener, Mr. H. Lister. There is a good number of fruit trees, Apples, Pears, and Plums, some old, but others in vigorous fruit-bearing condition. Very notable is a large specimen of the *Myrobalon* or Cherry Plum, from which as much as 10 bushels of fruit has been obtained in one year. This is much valued for preserving, and is a favourite fruit in the district. Apples are a rather short crop this season, but small fruits have been abundant, Gooseberries succeeding wonderfully well, and yielding fruit of exhibition size.

The lawns, shrubberies, and walks around the house are well attended, and the garden generally gives the best evidence that it is under good management.—L. CASTLE.

GRAPES COLOURING.

WHITE Grapes undoubtedly colour best when not too heavily shaded with foliage, and, on the other hand, black Grapes seem always to colour best when beneath a heavy shade of leaves. Black Grapes seem to lose colour if exposed to the sun after having coloured well beneath the foliage. There seems some subtle distinction in the composition of white and black Grapes that makes this difference; we may not be able to define it, but experience tells us that such is the case, and we must be guided by experience and treat the different colours differently. Muscats seem especially to like a very thin shade of foliage, and some growers go the length of allowing them to have the full blaze of the sun. I prefer to have some shade on them, as when fully exposed to the sun, though they take a deep golden colour, they at the same time shrivel a little, and in some cases become brown. They are, when in that condition, too sweet for my taste; I prefer them a shade less golden, provided they are quite plump and fresh. Golden-coloured Muscats, without the peculiar brownish gold of full exposure to the sun, are more likely to keep well than those which are roasted into the more deep and even brownish gold that is sometimes seen, and which, by some, is considered perfection.

This month, September, has opened grandly for the finishing of all Grapes, and the sun, which at present is so steadily shining, will do wonders for all vegetation, and for colouring "the fruits of the earth" that still remain to be matured. Late Grapes should keep well this year if we have a continuance of this sunny summer weather; but I would advise all who wish their Muscats to keep for some time, not to expose them to the direct rays of the sun, but to maintain a partial shade of foliage.—READER.

GLADIOLI AT THE CRYSTAL PALACE.

THE unexpected, we are told, always happens, and the saying was certainly fulfilled in this part of the Exhibition held on Friday and Saturday last. Knowing that two new competitors in the nurserymen's class were about to enter the field, I, in common with some others, was looking forward to the grandest display of these flowers which had ever been held. I had weighed in my mind how these new men would stand in comparison with the older exhibitors—Messrs. Kelway and Campbell. But when I got there I found that neither of these redoubtable champions had entered the lists, and that virtually the contest lay between them, for the two other collections were far behind. These two competitors were Messrs. Burrell, How House Nurseries, Cambridgeshire, and Messrs. Harkness of Bedale in Yorkshire. Neither of them had been to the manner born. One had been an amateur Rose exhibitor in the north, and like some others, carried away by his love of the flowers, had passed away from the amateur to the grower, and has very successfully competed during the past season. The others were in business of another kind, but have taken mainly to flower culture, have been most successful as Rose exhibitors in the north, and have now established their name as very successful growers of Gladioli, thus giving another illustration that a man may, despite his never having been brought up to it, become a successful horticulturist.

In looking at the two collections we could perceive at once the deficiencies of both, and their excellencies as well. Mr. Burrell's collection, which was placed rightly first, exhibited great depth of colouring, well finished spikes, and good quality, while Messrs. Harkness' were deficient in colour, there being a too great preponderance of light flowers, a fault which was found with Mr. Campbell's collection last year. The flowers, too, had been too much shaded, although this is perhaps more necessary in Yorkshire than it would be further south. All the collections, whether in the nurserymen's or amateurs' class, exhibited the effects of the recent very hot weather. It was the same with them as with Roses after the hot weather in the early part of July—they were rushed into bloom and were consequently small. I know that in my own case many flowers that I had fondly hoped would have stood by me on the show day had to be rejected, as the lower blooms had all passed.

Taking, then, the collection which gained the first prize, I may remark that it was a most even lot; the spikes had from six to ten flowers expanded. They were rich in colour, but would have gained a little, I think, if the stands had been covered with haize, and a little foliage had been added. Amongst the most noticeable flowers were the following:—Ovide, a very bright carmine-coloured flower, tinted with lilac. I was surprised to see this in such good form, as I had almost discarded it. Leviathan, a very large light-coloured flower; Duchess of Edinburgh (Kelway's), this very much surprised me, not by its excellence, for that I knew it always possessed, but by its being there at all. I have never been able to get it into bloom until October, but here there were three or four spikes of it in excellent condition; it is without question a very grand flower. In the same way I was surprised to see Phœbus, a grand high-coloured flower of Souchet's, but which I discarded long ago for the same reason. Mount Etna, a grand high-coloured scarlet flower; Flamboyant, another of the same type; Grand Rouge, a splendid flower in the way of Meyerbeer, perhaps even brighter in colour, but I question if it is superior to that old and grand flower; Le Vesuve is another of the same type, very brilliant, but not so large as Mount Etna and Grand Rouge; Atlas, a very fine light-coloured flower, white, striped with lilac; Crepuscule, a flower which I did not think a great deal of when it came out, but here it was very pretty, a delicate soft porcelain white; Cervantes, bright and good rose, tinted with lilac; Legouvé, the best bloom of this old and once favourite flower that I have seen for some time; Caméleon, slaty lilac flamed orange; Mabel, this I think is, taking it all in all, the best Gladiolus we have, it is very close and compact in form of spike like Meyerbeer, the colour is a clear beautiful waxy white, with delicate carmine markings, a most chaste and lovely flower; Dr. Fostain, another very bright flame colour; M. Mann Me's, very good, but one of the most delicate kinds we have; Baroness Burdett Coutts, a very large flower, forming a grand spike of lilac. It is very attractive, although perhaps it may to some extent dominate the other flowers in a stand, and serve them the same as Paul Neyron does a stand of Roses; Dalila, a very favourite flower of mine, with a soft pleasing shade of salmon rose, a good spike, and undoubtedly the finest we have of that shade of colour; Archduchesse Marie Christine, a fine large flower, but somewhat too loose both in the flower itself and in the spike; Addin, a very bright flower of dark amaranth colour, with white lines; and Rossini, another old flower which I had long since thought ought not to be grown, but here it was very bright and good; Mdle. Marie Nines, bright and clear, but my experience of the variety is that it is very difficult to keep; Horace Vernet, a very favourite flower of mine, with its rich deep crimson colour; Colorado, a very bright flower; Andre Leroy, deep cherry red, striped with a darker shade with white lines; Hesperide, white ground with rosy salmon stripes, and Lacepede, rosy violet, shaded white, and striped with lilac. Besides these Mr. Burrell had some promising seedlings, one in the way of Shakespeare, and another light colour with a margin which was intended to be permanent, and if so would be likely to be very valuable. Before dismissing Mr. Burrell's exhibits, I may state that many of these flowers were cut from bulbs which he had collected for three years, thus disposing the idea of deterioration, and that a large proportion of them were from bulbs which had been cut in two previous to planting. The soil and climate of Cambridge are no doubt favourable, with a rainfall of only 22 inches and a higher temperature in autumn than most places possess; it seems more to resemble that of Fontainebleau and Montreux, where the great bulk of Gladioli is grown in France, than any climate in England with which I am acquainted. I have always thought that parts of Lincolnshire around Spalding would be favourable, and this seems very like it.

Messrs. Harkness & Sons' exhibit was a most creditable one, and for a début at a metropolitan show, I think nearly as remarkable as Mr. Burrell's. There were two defects in it; there were too many white and light-coloured flowers, and too much foliage. This gave it a dull appearance, especially when contrasted with Mr. Burrell's close to it, while at a little distance the flower appeared hid in the too great quantity of greenery. These are drawbacks which can be easily remedied. There was one noticeable feature in this collection, the manner in which some of the old flowers came to the front—such flowers, for instance, as Colbert, a bright-looking red flower; Didon, an old white; Orphée, of which there were some of the best spikes I have seen for some time; Pactoli, an old yellow in very good condition, were very good, and proved that some of the old flowers, when well cultivated, can still hold their own. Africaine was very fine, and is unquestionably a very desirable variety, contrasting so well with light flowers. Leviathan and Celume were also good, while Ondine, pure white, was shown in remarkably good form, being probably the best white we have.

With regard to the amateurs' class little need be said. I do not think

the writer will be accused of "bumptiousness" when he says his own were very far ahead of the others, although they were not equal to those he exhibited last year. The stand included Dalila, with ten flowers expanded; Ahricote, a most lovely shade of clear apricot colour; Meyerbeer, with fourteen expanded flowers; Mabel, white seedling; Tamerlane, very dark; Pyramide, bright and good; Baroness Burdett Coutts, large and well coloured; Horace Vernet, Adolphe Brongniart, Mount Etna, and Grand Rouge. The second prize was taken by Mr. Whetton, Bedale. His flowers, both in their excellencies and defect, bore a striking similarity to those of Messrs. Harkness. Owing, no doubt, to their being neighbours and friends the same system of shading had apparently been adopted. Mr. Catley of Bath gained the third prize, and amongst the flowers were some of Mr. Kelway's varieties, but they were not in good form. It is much to be wished that more encouragement were given to this fine autumn flower, which seems to be taken up warmly in the north, as all florist's flowers are.—D., Deal.

ROYAL HORTICULTURAL SOCIETY.

SEPTEMBER 7TH AND 8TH.

THE Fruit and Dahlia Shows at South Kensington formed an extensive display in the conservatory on Tuesday and Wednesday last, Grapes being particularly well shown. Groups of plants and flowers also added considerably to the interest of the occasion.

FRUIT COMMITTEE.—Present: John E. Lane, Esq., in the chair, and Messrs. John Burnett, T. J. Saltmarsh, G. T. Miles, J. Roberts, W. Warren, William Paul, G. Goldsmith, G. Norman, J. Willard, P. Crowley, R. D. Blackmore, and G. Bunyard. Mr. Bannister, Cote House, Westbury-on-Trym, showed a seedling Grape, said to be a cross between Muscat of Alexandria and Black Hamburg, the berries oval, of medium size, and of a fine golden colour. The Committee wished the Grape to be shown again in two months' time. Mr. W. Carmichael, Bignor Park, Pulborough, also showed a seedling Grape, said to be from Muscat Champion. It was sown in April, 1884, and fruited at midseason, 1886; the berries were large, globular, and red. Mr. G. T. Miles was awarded a cultural commendation for large handsome fruits of President Strawberry, which were much admired. Mr. Burnett, Deepdene Gardens, showed fruit of Pear Burré Pres d'Artois. Mr. J. Blundell, West Dulwich, exhibited dishes of Boddart's Green Gage and Cox's Emperor Plums, also Cox's Pomona Apples. Mr. W. Allan, Gunton Park Gardens, Norwich, sent a bunch of Grapes under the name of Foster's Seedling, which it was thought resembled White Tokay. The Commissioners of Western Australia contributed a collection of dried fruits, principally Raisins, which were highly commended. A vote of thanks was accorded to MM. Vilmorin, Andrieux & Co., Paris, for twenty varieties of Haricot Beans. Mr. Mortimer, Farnham, exhibited twenty-four fruits of Sutton's Imperial Green Flesh, beautifully netted and of fine flavour. Mr. T. Lockie had a seedling Melon, named Oakley Court Seedling, a green-flesh of good quality. Mr. T. Spencer showed a seedling Melon, a cross between Hero of Bath and Munroe's Little Heath. Messrs. James Veitch, Chelsea, exhibited a large collection of Carrots, comprising over twenty varieties, scarlet, yellow, and white. W. Roupell, Esq., Harvey Lodge, Roupell Park, exhibited a collection of Grapes, comprising good bunches of Muscat Hamburg and Madresfield Court, the latter being exceedingly fine; ten bunches of these were shown in capital condition. A collection of highly flavoured Grapes was also shown, comprising Purple Constantia, Grizzly Fontignan, Dr. Hogg, La Bruxelloise, the Raspberry, the Strawberry Grape, and the Trebbiano.

FLORAL COMMITTEE.—Present: G. F. Wilson, Esq., F.R.S., in the chair, and Messrs. H. Bennett, W. Bealby, T. Baines, H. Herbst, J. Hudson, R. Dean, A. L. Lendy, J. O. Brien, J. Dominy, C. Noble, H. Turner, G. Paul, G. Duffield, E. Hill, J. Douglas, W. B. Kellock, H. Cannell, J. Walker, and Dr. M. T. Masters.

G. F. Wilson, Esq., F.R.S., Weybridge, was awarded a vote of thanks for *Lilium auratum*, with five large flowers, the petals broad with numerous spots. A vote of thanks was awarded. A vote of thanks was accorded to Mr. R. Dean, Ealing, for a collection of very fine seedling Pentstemons, brightly coloured and large flowers. Messrs. J. Veitch & Sons, Chelsea, showed several new plants, for which certificates were awarded. They also had a fine specimen of *Nephrolepis rufescens tripinnatifida*, which has been previously certificated, and *Selaginella gracilis*, an elegant species from the South Sea Islands. Messrs. Laing & Mather, the Nurseries, Kelso, N.B., were awarded a vote of thanks for some seedling Carnations. Mr. Mortimer, Farnham, showed flowers of *Chrysanthemum G. Wernig*. Mr. G. Humphrey, Kingston Langley, Chippenham, had several distinct seedling Dahlias. Mr. Bannister, Cote House Gardens, Westbury-on-Trym, sent a good variety of Mignonette named White Perfection. Mr. John Walker, Thame, contributed a pretty stand of quilled Asters. Mr. Munday, Basingstoke, sent flowers of *Cactus Dahlia*, named Empress of India, striped with crimson and maroon. Mr. Garlandvay, Stanhope Park, Greenford, showed a dark-coloured single Dahlia, and Major General Carey de Bavoire, Guernsey, showed a *Cactus Dahlia* named Fanny Carey, of a dark scarlet colour. Messrs. Heath & Son, Cheltenham, exhibited a plant of *Oreoglossum mirandum*, not a very good variety, and a plant of *Dendrobium ciliatum*, a curious species, with a brownish deeply fringed lip. Messrs. F. Sander & Co., St. Albans, showed a basket of plants of *Galeandra Devoniana*, bearing a large number of its purple-lipped flowers. A vote of thanks was accorded. A cultural commendation was awarded to Messrs. Hooper & Co., Covent Garden, for a fine plant of *Dasyliion glaucum*. A vote of thanks was accorded to Mr. T. S. Ware for cut flowers, and to Mr. Gordon of Twickenham for a collection of *Lilium auratum*, representing several fine varieties.

CERTIFICATED PLANTS.—*Vanda Dearei* (Baron Schröder).—A distinct species with curving leaves 18 inches long. The flowers are nearly 3 inches in diameter, the sepals and petals obovate, creamy white petals and sepals, the column white, and the lip yellow.

Phrynium jucundum (J. Veitch & Sons).—A handsome variegated plant from Dutch Malaya, the leaf-blades lanceolate, about 6 inches long, freely variegated with white.

Davallia retusa (J. Veitch & Sons).—An elegant Fern, with bipinnate fronds. The pinnules retuse, rather triangular in shape, and light green; the stipes reddish.

Dahlia Lady E. Dyke (H. Cannell & Sons).—A yellow Cactus variety, with handsome, fresh, and bright blooms.

Dahlia Mrs. Kennett (Cheal & Sons).—A single variety, very distinct, striped with yellow and deep scarlet.

Certificates were also awarded for the following Dahlias, which are described in the Crystal Palace Show report:—Colonist (Keynes, Williams, and Co.), Black Knight and Charming Bride (Cannell), and Mrs. Theobald (Rawlings Bros.).

FRUIT.

Nineteen classes were devoted to Grapes, and the competition was close in the majority of cases, but as the exhibits were in several cases the same as at the Crystal Palace we have only briefly noted them in the order of the schedule.

With two bunches of Alicantes Mr. W. Taylor, gardener to J. Chaffin, Esq., Bath, was first with the grand bunches shown at the Crystal Palace and noted in our report. Mr. J. Hollingworth, gardener to J. F. Campbell, Esq., Woodseat, Uttoxeter, was second with good bunches weighing $7\frac{1}{2}$ lbs., smaller in the berry; and Mr. Howe, gardener to H. Tate, Esq., Park Hill, Streatham Common, was third, there being five exhibitors.

Eight pairs of Alnwick Seedling were staged, Mr. W. Taylor being again first with two beautiful bunches, closely followed by Mr. J. Driukwater, gardener to C. Bill, Esq., Farley Hall, Cheadle, Stoke-on-Trent, and Mr. Goodacre, Elvaston Castle Gardens, Derby.

Six exhibitors of Black Hamburgs entered, Mr. J. Roberts, gardener to Messrs. Rothschild, Gunnersbury Park, Acton, leading with compact well coloured bunches; Mr. J. Hudson, gardener to H. J. Atkinson, Esq., M.P., Gunnersbury House, Acton, being second with smaller samples; and Mr. T. Spencer, gardener to H. C. Moffat, Esq., Goodrich Court, Ross, was third, his bunches being somewhat rubbed.

There were only two lots of Black Prince, Mr. C. Goldsmith, gardener to C. A. Hoare, Esq., Kelsey Manor, Beckenham, having very compact and well finished bunches, for which the first prize was awarded; and Mr. J. Baird, gardener to C. A. Daw, Esq., Homefield, Ealing, was second with much thinner bunches.

Buckland Sweetwater were capitally shown by four exhibitors, Mr. Lockie, Oakley Court Gardens, Windsor, being first with very handsome bunches and large berries well ripened. Mr. J. Roberts was second with smaller but very compact bunches; and Mr. H. W. Ward, gardener to the Earl of Radnor, Longford Castle, Salisbury, was third with good bunches.

Duke of Buccleuch was shown by four exhibitors. Mr. W. Allan, gardener to Lord Suffield, Gunton Park, Norwich, took the first honours with well ripened samples. Mr. John Wallis, gardener to the Rev. Walter Sneyd, Keele Hall, Newcastle-on-Tyne, was second with medium-sized bunches and large berries, but not quite so well coloured, Mr. Goodacre being third.

Foster's Seedling was well represented by seven pairs of bunches, Mr. J. Roberts leading with beautiful bunches well ripened. Mr. G. T. Miles, Wycombe Abbey Gardens, High Wycombe, a very close second with fine bunches, but not quite so highly coloured, Mr. Ward being third with good samples.

For Gros Colman, Mr. Elphinstone, Shipley Hall Gardens, Derby, was first with good bunches and berries; Mr. G. T. Miles second, and Mr. S. T. Wright third, the two latter not having quite such well coloured bunches.

Gros Guillaume was exhibited by four competitors, Mr. H. W. Ward securing the first place with very large bunches and good-sized berries, but they had been considerably rubbed, the appearance of one bunch being quite spoiled. Mr. T. Spencer followed, and Mr. Miles was third, none of these being well coloured.

Six competitors entered with Gros Maroc, the exhibits being all of considerable merit, especially the two fine bunches with which Mr. W. Taylor took the first prize. Mr. Wallis was second with smaller bunches, but bearing a dense bloom, and Mr. Elphinstone took the third place for compact well-coloured samples.

The competition was keen with Lady Downe's Seedling, there being nine entries. Mr. T. Osman, gardener to C. J. Baker, Esq., Ottershaw Park, Chertsey, secured the first place with compact bunches, well coloured. Mr. Hollingworth was second with good specimens, and Mr. J. Wallis third.

Madresfield Court was represented by six exhibitors, Mr. W. Taylor again taking the first position with two beautiful bunches, the berries not quite so large as some of the others. Mr. Bury, gardener to A. Richards, Esq., Tewkesbury Lodge, Forest Hill, was second with well-coloured bunches, and Mr. Goodacre third with handsome bunches, bearing a fine bloom.

With Mrs. Pearson Mr. T. Osman was first, showing two very large but green bunches, Mr. J. Roberts was second with riper samples, and Mr. J. Wallis was third with lesser bunches, but apparently the ripest of all. There were four entries.

Mr. W. Pratt, Longleat Gardens, Warminster, had the best two bunches of Mrs. Pince, taking the first prize, but they were not in first-rate condition as regards colour, though the size of the bunches and berries was satisfactory. Mr. J. Horsfield, gardener to Lord Heytesbury, Heytesbury, was second with smaller berries, but with a dense bloom; Mr. A. Miller, gardener to W. H. Long, Esq., M.P., Rood Ashton Court, Trowbridge, being third with large bunches.

Muscat Hamburg was shown by five competitors, Mr. Goodacre being first with very fine bunches and good berries. Mr. Cooper, gardener to M. Yeatman, Esq., Widmore, Bromley, was second, and Mr. Horsfield third.

There was a good class of Muscat of Alexandria, nine competitors staging fine specimens. Mr. W. Pratt was easily first with enormous bunches weighing $10\frac{1}{2}$ lbs., large in berries and well coloured. Mr. R. Gray, gardener to Earl Stanhope, Chevening, Sevenoaks, was second, also with large bunches clean and of fine colour, Mr. Roberts being third with good specimens. Mr. Hollingworth was first with two bunches of White Tokay, weighing 7 lbs., and Mr. Wallis second, these being the only samples shown, and both were rather green.

In any other variety class Mr. T. Spencer was first with Pearson's Golden Queen, of good size and colour for the variety, but very bright and

clean. Mr. J. Wells, gardener to B. Ravenhill, Esq., Fernhill, Windsor Forest, was second with Gros Colman, very fine, and Mr. Hollingworth was third with Trebbiano. There were eight entries.

Special prizes for nine Tomatoes were offered by Messrs. Carter & Co., High Holborn, Mr. T. A. Beckett, Cole Hatch Farm Penn, Amersham, being first with Carter's Perfection, very handsome; Mr. C. J. Waite, gardener to Col. Hon. W. P. Talbot, Glenhurst, Esher, and Mr. L. Harris, High Wycombe, were second and third with the same varieties.

Messrs. Sutton & Sons, Reading, also offered prizes for Tomatoes, which were won by Mr. Lockie with Sutton's Main Crop, very handsome; Mr. Waite with Sutton's Perfection, and Mr. Beckett third with the same. Seven dishes of fine fruits were shown. Special prizes were offered for six roots of Sutton's Early Gem Carrots, and there were thirteen exhibitors; Mr. G. H. Richards, Somersley, Rugwood; Mr. W. Meads, Beckett Gardens, Shrivvenham; Mr. R. Lye, gardener to W. H. Kingsmill, Esq., Sydmonton Court, Newbury, being third, all showing good samples.

DAHLIAS.

Three classes were provided for these, and those in competition, together with the many blooms in miscellaneous exhibits, formed an excellent display. The principal class was that for twenty-four show or fancy blooms, and there were seven entries. Mr. Charles Turner, Royal Nurseries, Slough, was awarded the first prize for an excellent stand, the blooms being of good size, even, and perfectly fresh. The varieties were as follows, the names being given in the order the blooms were placed, read from left to right:—Back row—Julia Wyatt, Harry Keith, Henry Walton, Prince Bismarck, Mrs. Forman, Duchess of Albany, Hon. Mrs. P. Wyndham, and Wm. Rawlings. Second row—Imperial, Coustancy, Hugh Austin, Gaiety, Jas. Cocker, Mrs. Foster, J. N. Keynes, and John Standish. Front row—Mrs. Gladstone, Beudigo, Royal Queen, Sunbeam, Herbert Turner, Charles Wyatt, Mrs. Langtry, and Clara. Messrs. Keynes, Williams & Co., Salisbury, and Mr. John Walker, Thame, Oxon, were placed equal second, both showing some fine blooms. In the stand of the former firm Henry Walton, Mrs. Geo. Rawlings, and Mrs. Gladstone were conspicuously good, and Seraph, Royal Queen, and Julia Wyatt were noticeable in that of Mr. Walker. The third prize was adjudged to Messrs. Rawlings, Bros., Old Church, Romford, whose blooms were beautifully fresh, but somewhat small. Four stands of twenty-four Pompons were in competition, all being good. Mr. Turner was again first, showing the following varieties:—Back row—Fanny Weiner, Isabel, Golden Gem, Rosetta, Cupid, Comtesse von Sternberg, Darkness, and E. F. Jungker. Second row—Favourite, Little Princess, Gem, Dora, Ernest, White Aster, Heidwig Polwig, and Louis Rodani. Front row—Titania, Lady Blanche, Nympe, The Khedive, Eccentric, Thos. Moore, Rosalie, and Fair Helen. Messrs. J. Cheal & Sons, Crawley, were a good second, their flowers being fresh and bright; and Messrs. Paul & Son of Cheshunt secured a meritorious third. Messrs. Cheal showed single Dahlias splendidly, and gained an easy victory in the class for twenty-four blooms; the flowers were very large, perfectly fresh, and the colours remarkably clear. We have never seen a better stand. Mrs. Walker, Juno, White Queen, Mrs. Bowman, and Edith were exceptionally fine. A good but somewhat uneven stand won the second prize for Mr. Turner, and Messrs. Paul & Son of Cheshunt were third. There were four entrants.

MISCELLANEOUS.

The miscellaneous exhibits were numerous, and they formed a highly attractive feature of the Show. A large and varied collection of plants and cut flowers came from Messrs. Paul & Son, The Old Nurseries, Cheshunt. Boxes of Cactus and show Dahlias, of hardy herbaceous plants, and of Roses were beautiful in front, and baskets of the graceful *Kerrya japonica* variegata, *Acer negundo* variegata, the purple-leaved *Prunus Pissardi*, the Purple Nut, *Corylus purpurea*, and others, with cut blooms of Lilliums, &c., formed an effective background. Messrs. H. Cannell & Sons, Swanley, Kent, provided a large collection of Dahlias, comprising boxes of Show, Fancy, Pompons, Single and Cactus varieties. In each section the blooms were excellent, and several varieties, which are elsewhere named and described, received first-class certificates. Messrs. Charles Lee & Son, Royal Vineyard Nursery, Hammersmith, arranged a much-admired group of hardy ornamental trees and shrubs, pleasantly relieved by a few Roses, Clematises, and Lilliums. A beautiful collection of Dahlias and hardy flowers, amongst which Lilliums predominated, represented the well-known firm of T. S. Ware, Tottenham. The Dahlias were arranged with sprays of *Asparagus plumosus*, and some of the Lilliums were cut, others growing in pots. The New Plant and Bulb Company, Lion Walk, Colchester, staged a group of Lilliums interspersed with Ferns; and Messrs. Kelway & Son, Royal Nurseries, Langport, Somerset, were represented by boxes of herbaceous flowers, including boxes of charming Pyrethrums and Asters, and by a fine group of Gladioli, comprising some scores of beautiful varieties. Messrs. Cheal & Son showed Asters and hardy flowers, together with some sixty or seventy dishes of fruit. Messrs. J. Veitch & Sons, Royal Exotic Nursery, sent a collection of vegetables, Carrots, comprising most of the varieties in cultivation, and a large collection of Apples. Several boxes of Cactus Dahlias came from Mr. C. Turner; Mr. Geo. Prince, Market Street, Oxford, staged boxes of Roses and Dahlias; Messrs. Vilmoren, Andrieux and Co., Quai de la Megisserie, Paris, exhibited a box of Asters, and Messrs. Wm. Paul & Son, Waltham Cross, staged ten boxes of charming cut Roses, together with a basket of the pretty Japanese Rose, *Rosa rugosa*, and a fine collection of Apples. Messrs. Lane & Son, Berkhamstead, sent six Vines in pots, all well fruited, some containing excellent bunches. Dishes of Plums were also shown by this firm. Three excellent boxes of Quilled Asters were exhibited by Mr. Walker of Thame. Mr. Goldsmith, Beckenham, sent a collection of Melons, and Messrs. W. & J. Birkenhead, Fern Nursery, Sale, exhibited a simple but effective trap for cockroaches, beetles, &c. It consists of two wooden boxes, one within the other, the upper being covered by two pieces of glass which slope to the centre, where there is a hole about $1\frac{1}{2}$ inch long by 1 inch wide for the ingress of the insect. Escape is quite impossible, and the insects are removed by a circular hole in the bottom of the box. This trap is cheap and appears to be efficient. Mr. Chapman, Alresford, sent a brush for cleaning sashes, that also seemed adapted for pot-washing.

MAKING NEW STRAWBERRY PLANTATIONS.

THE Strawberry is one of the most commonly cultivated fruits. The Gooseberry may be more generally grown, but it is not more popular, as when the Strawberry is bearing ripe fruit all other fruit is neglected for it, and the desire of all who possess a garden is to have a Strawberry bed and gather quantities of this exquisite fruit. It is the most easily cultivated of all fruits, as ordinary culture will produce fruit, and it is only mismanagement which causes the plants to be sterile. I have known some fail to flower, and I have known many others which flowered, but failed to perfect their fruits, and in both cases the fault rested with the cultivators. But the after cultivation of Strawberries is not so important as the attention required in making a new plantation, and when this is properly done there is no danger of subsequent failure for many years at least. Shady positions should never be selected for a Strawberry bed, as there the plants will, as a rule, make a superabundance of foliage, but little or no fruit. Some may be inclined to think that by planting them in the shade they will be able to have a good supply of late fruit, but this is a mistake, as it is by planting late varieties that this is secured.

It is no use attempting to grow Strawberries successfully under the "odd corner" system. They certainly will cover any "odd corner" with foliage, but they require a good position to obtain abundance of high-class fruit from them, and the first and foremost thing to do in either introducing them for the first time, or making a new plantation anywhere, is to select a spot well exposed to the sun and where the soil is of a substantial nature. Strawberries can be grown in light soil, but they do best in heavy material, and a stiff soil will always produce more robust plants and finish finer crops of fruit than light soil. I have known Strawberries planted in very light soil bear excellent crops for a year or two if the weather happened to be moist at the time the fruit was swelling, but when the season chanced to be dry at that time they were almost a total failure. It is when the fruit is swelling and ripening that the quality of the soil is tested. Many are heard to complain that their Strawberry plants were full of bloom, the fruits formed freely, but most of them were lost before ripening; and that is the evil of planting in light soil, as it is very rarely the crop fails in heavy material, and the fruit as a rule swells to the last berry.

In many cases the surface soil of a garden is very fine and light, whilst the subsoil is heavy, and if trenching was done there before the Strawberries were planted it would benefit them highly. The subsoil should then be brought well up to the surface, and the whole of the quarter for the Strawberries should be trenched before any manuring is done. It is generally understood that Strawberries delight in a rich soil, but there is a danger of giving them too much manure, especially at first. I have known beds to be originally composed of almost half manure and the plants made astonishing growth in it, but this was all, as leaves took the place of fruit in a great measure, and these strong plants were by no means so fertile as those of medium strength. A very moderate supply of manure will grow Strawberries well for the first season, and afterwards they can be easily and advantageously fertilised by mulching in early spring, which is the best of all times for this operation. In dealing with Strawberries from this point of view, the newly trenched ground and soil being dug for the reception of young plants should only have a medium coat of manure worked into the surface, but what is used should be as good as possible. It must be remembered that a new Strawberry plantation ought to remain in prime bearing condition for four, five, or six years, and if a quantity of weedy manure is introduced to the soil at the first it will give endless trouble or may lead to the plantation having to be dug up prematurely. There is never any satisfaction to be had from a plantation which is constantly full of weeds, and when these are introduced with the manure it is a difficult matter to keep them down or clear them out. The best and shortest way of preparing the ground for Strawberries is to clear everything from the surface, dig or trench it if necessary from 1½ foot to 2 feet deep, then fork a quantity of good clean manure into the surface and plant. If the soil is inclined to be light, use cow manure; if rather heavy, introduce stable manure. As a rule it is not an advantage to plant Strawberries where Strawberries were before. Like many other things, a change of soil is very beneficial to them, and they may follow Potatoes, Onions, or any kind of vegetable crop which is being cleared off about this time.

As to the best time for planting, I do not think there is a better than the end of August or very early in September. The young plants have then time to form roots and become well established before November, and once this is accomplished they will bear a light crop the first summer after planting. It is

always a very great advantage to have strong runners to place out, and if these were cut off and lifted some time ago and planted closely in a nursery bed to form roots they may now be transplanted without receiving a check. Secure a ball of soil with each if possible, and plant without breaking this. Newly dug or forked ground is always loose, and as the young roots establish themselves much more quickly in firm soil than loose material, when the whole have been planted the ground around each plant should be firmly trodden down. We find that those of the Black Prince type do very well with a distance of 2 feet between the rows and 18 inches between the plants, but the more robust-growing ones should have at least 6 inches more room each way.

—J. MUIR, *Margam Park, South Wales.*

SMALL ROSE GROWERS—HER MAJESTY.

I HAVE received a note from the gentleman who signs himself "W. R. Raillem," without date or address, postmark a town in Suffolk. He rallies me on my "poverty;" ironically assumes me to be a "millionaire" parson! forgetting that pluralities are abolished. I own with shame my extravagance and reckless expenditure. Vaulting ambition over-leapt itself. Of course I hoped to win the prize for the best H.P. at Kensington and perhaps elsewhere. Well, Her Majesty suggests one thought more. Loyal imperialist that I am, I was speaking very disrespectfully of Her Majesty to a friendly nurseryman, who tried to soothe me, saying, "Depend upon it, sir, next year Her Majesty will take the prize everywhere for the best H.P. in the show." But suppose some dispute Her Majesty being an H.P.? To avoid wrangles, let committees in preparing schedules avoid the letters H. and P., and assign the prize for the "best Rose in the show, not being a Tea Rose or Noisette." After a fair trial given, one year more will be time enough to take in hand the question whether Her Majesty is to be catalogued as an H.P. or not, and settled as the Hybrid Tea Rose question was.—F. H. G.

A DRIVE IN SURREY—KINGSWOOD WARREN.

CALLING on Mr. Rapley at Bedford Hill House, Balham, a short time ago, he was found making preparations for a drive to Kingswood Warren, the seat of H. Cosmo Bonsor, Esq., M.P.; and as Mr. Rapley appeared more than willing to "make room for another," and as the other evinced no reluctance to occupy it, the pair started on a ten-miles drive to the destination indicated. There was little or no time for seeing the gardens at Bedford Hill House; but a glance was had at the *Tubercus Begonias* that have been in splendid condition; and the *Carnations* in pots for autumn and winter flowering compelled a pause on account of their sturdy vigour, thick broad glaucous foliage, and the stout uprising flower stems of the more precocious varieties. The cuttings were inserted in February, and the plants, stood in a sunny position in the open air, are now well established in 6-inch p.t.s, and in condition to produce fine blooms in abundance, and to maintain a supply throughout the winter and spring months. "They like a little peat in the loam," remarked the cultivator, and it is certain they enjoyed what they had; "but after all," he further remarked, "there is more in good watering than anything else, and a blunder in that respect soon throws them wrong, and they are not easily got right again." These observations are jotted down in the hope that they may be of service to somebody who fails in growing these coveted flowers to his satisfaction. *Carnations* are favourite flowers at Bedford Hill, one of the young gentlemen of the family, Mr. George Brand, being a great admirer of them, especially the border varieties, of which he has a very extensive collection, procured from Chelsea and other places. He has also raised some seedlings of promise, and will not unlikely enter further into the interesting pursuit of intercrossing. The display has been very fine, and has confirmed what has so often been said in these columns, that free-growing *Carnations* rank amongst the very best plants for suburban gardens and more or less smoky districts. Bedford Hill is famed for *Calceolarias*, the Rapley strain being quite in the front rank; but the plants for next year are in their infancy, clean, crisp, and fresh, in a cold frame in the coolest and dampest position that can be found, those being the conditions in which they are the most happy in the summer. The flower garden was remarkably gay, and it is not easy to imagine more brilliant beds than of the old Waltham Seedling semi-Nosegay *Pelargonium*, and which, moreover, continues flowering as long, if not longer, than any other variety in cultivation. The conservatory was fragrant with *Buvardia jasminiflora*, which, when well grown, is one of the most delightful of plants at this period of the year. Some plants stood outdoors were growing like Willows, and producing fine trusses of flowers equal in texture and purity to the *Stephanotis*, and more delicately sweet. The plants are easily grown, and it may be said of them as of the *Carnations*—"they like a little peat in the loam, but there is more in good watering than in anything else." *Thunbergia Harrisii* and *Allamandas* intermingled on the roof of a stove had a beautiful effect, and the former is, perhaps, not so much grown as its merits deserve. This is not much like a "drive," however, but we shall start directly, and have been having a rush round till our steed, to use a flower-showy phrase, was "placed in position." Just before being "staged," which a horseman would call "on the box," we peep into a pit at some *Tomatoes*. "What is that big one?" was the hurried inquiry, for gardeners are naturally inquisitive, and received for reply, "Oh! that is *Ne Plus Ultra*, sent out by Williams; fine, isn't it?" It was very fine indeed, and its quality was equal to its appearance, for it must be confessed that a "hands off"

policy was not rigidly adhered to at the moment. And now we leave the fine old grounds of Bedford Hill House; it may be for the last time, for the builders have pushed up to the gates, and Mr. Brand has determined to remain no longer near them, but has secured another estate well beyond the outposts of the invading army of speculative builders, that appear to lay siege to every open space or pleasure ground in the environs of the metropolis.

At last we start, and sure enough the very first gentleman's park we see, after skirting Tooting Common, is "in the market." This is Furzedown Park, Mr. Seely's fine property. It is natural to suppose that the owner will hold out against the builders, and prefer not to have the desmeane "cut up." But they will have it sooner or later, and by-and-by it will be quite a long "drive" to get out of London. We are, however, out at last and nearing Mitcham, which we can smell before we can well see, for it is famous for herb culture, notably Lavender. This is the great crop of the district. Field after field is occupied with it; stacks are made of it, and barns filled with the fragrant spikes. The soil is warm, rather light, and resting on gravel. The plants are grown for a time about 18 inches apart, and eventually thinned to twice that distance, the ground being inter-cropped with Lettuces and Cabbages till the Lavender spreads and requires the whole space. Mr. Rapley thinks Mitcham must be a healthy place, as he sees so many old people in it, and wonders if the herbs and Lavender act as an antiseptic. As is well known moths do not like Lavender, so it may possibly be that "microbes" do not relish it either; and as time goes on it will, perhaps, be found that these are the origin of half the diseases that attack mankind. Mitcham is a curious straggling old village, many of the cottages being made of wood—or at least the "walls" are formed of overlapping boards. It is a cheap method of building, no doubt, but some of the domiciles look cosy and comfortable, with bright garden plots in front of them and climbers trained round the windows. On the whole, Mitcham is not a place to fascinate; it suggests a village trying to be a town, but just failing in the attempt, and is, therefore, "neither one thing nor the other." I once invested in a bottle of Lavender water "fresh from the still," so the man said, "and would last twice as long as the adulterated stuff sold at the shops." He was quite right as to the lasting, for I have had it ten years and it is not done yet. He was taking a load of it to London—at least, so he said—and it was the custom to give the carters three or four bottles which they could dispose of for refreshment. I was fresh from the country then, and thought myself fortunate in my bargain. The cork neatly sealed and the bottle properly labelled suggested something good. It proved, at least, "pure," and was, no doubt, "fresh from the still of Nature." It was clear spring water, collected, it may be, miles from where Lavender grows; but it cost me 9d. It is preserved as a standing monitor, and I have not invested in a London "bargain" of unknown value since, and thereby have been the gainer. That man, no doubt, made a trade of carting about boxes and bottles of his "pure" (Lavender) water, and I was only one of his many "supporters." The moral of this is, Let no honest countryman visiting London think that everybody there is as honest as he is, as he will assuredly be "taken in," and, it may be, purchase experience at a greater cost than "9d."

On we go to Sutton, which is famed, among other things, for its Rose shows. Sutton is a beautiful town, and there are not wanting signs of at least a good number of its inhabitants being a flower-loving people. The town occupies much space, and there appears to be quite as many trees as houses. These ornaments of Nature abound even in the main thoroughfare, and, emerging into the suburbs, beautiful groves extend on each side like boulevards, and have a particularly cool and agreeable appearance. It is very pleasant to see this evidence that trees are really cherished in one town in England, and that is Sutton in Surrey. Beyond the town are the Metropolitan Schools (I think that is the name) from whence so many good vegetables have come, as grown by Mr. Osman, and successfully exhibited at the Crystal Palace and other shows. The land surrounding the great building is evidently well cultivated, and if the whole of the fields of Britain were similarly managed we should hear less about depression.

We travel onwards and upwards to Banstead Downs, the great emporium of loam for London gardeners. It is a yellow turfy loam of good body, and carts are constantly at work carrying the coveted turves away. One load of really good loam is worth half a dozen of the worthless stuff that many gardeners have to use, as not only are better results obtained by the former, but it can be used, and is used, twice over in many gardens, first for Chrysanthemums and various kinds of plants, then for Cucumbers and Melons, and then again often for Potatoes in frames and Tomatoes. There is nothing much dearer than cheap soil, and nothing much more unreasonable than to expect gardeners to produce the best results from bad material.

Over the Downs is Kingswood Warren. It is approached through Heather and Bracken. It is a beautiful estate splendidly timbered, and fortunately owned by a gentleman who has not only the means, but the disposition to improve it. The mansion is a fine castellated building that has been restored and enlarged by its present owner. New lawns have been made, and terrace walls with flights of steps leading to the panels. One part of the forest comprising several acres is now being transformed into a pleasure ground by Mr. Thomas, the eminent landscape gardener, and when completed will have a beautiful effect from the mansion. The park is being enlarged to bring into prominence several fine trees; glades are opened out and vistas formed, one with the church in the distance, and seen from the front door, being a striking feature. Grass rides traversing the wood, or home preserves, quite near to the mansion, are alive with pheasants. There must be thousands of them; and the splendid groups of Scotch Firs here and there are extremely ornamental;

but perhaps the most interesting trees, to gardeners, are two famous Cedars of Lebanon. They may be octogenarians, or even centenarians, but whatever their age, they were removed to their present position only a very few years ago by Mr. Barron of Elvaston, and appear as healthy as if they had not been disturbed. Mr. Barron was engaged by Sir John Hartopp, Bart., a former owner of Kingswood Warren, to move these trees, and they are monuments of the transplanters' skill.

There are two gardens on the estate, which have been for some years under the management of Mr. Charles Blurton—a "Rangemore man," and undoubtedly competent. One of these gardens is devoted wholly to the culture of vegetables and hardy fruit, the other including also herbaceous and other flowers for cutting, with houses and pits for the production of plants, Peaches, and Grapes. In the former garden the rows of Peas were remarkably fine. A bountiful supply had been maintained, and, judging from the successional rows of *Ne Plus Ultra*, will be continued till frost occurs. This is simply the result of the Celery trench system. Trenches are dug out and manure dug in them, and the rows being wide apart, the growth of the Peas is characterised by a vigour and productiveness that could not be approached by the orthodox close sowing on the level, and earthing up so as to throw off the rain from the roots. By this latter plan Peas are starved in many soils, by the former supported; a short and fitful supply resulting in one case, and a bountiful and prolonged yield in the other. It would be well if cultivators generally chose the better way. The pyramid fruit trees were bearing sparsely, and consequently making vigorous growth. It was a matter of regret to the gardener that they had to be "restricted" to the position, as he knows quite well if they had room to grow they would soon bear thrice the weight of fruit that is possible under the present circumstances.

Potatoes were being lifted, and many of the unwieldy tubers of the International Kidney were diseased. Covent Garden Perfection was yielding well and pronounced of good quality; Vicar of Laleham better, and the yield remarkable, but perhaps the finest crop of all was Reading Russett—a Potato of high quality, handsome shape, and no waste in peeling. This variety is probably destined to be very extensively grown for second early and mid-season use.

The glass structures at Coombe Warren are old and ill-placed. They were right enough once, no doubt, but the garden appears to have extended beyond them. When the time for remodelling this part of the establishment comes round—and everything cannot be done at once—it is not difficult to see that a very great improvement can be effected. But the old houses produce good Peaches, excellent Black Hamburgh Grapes, and serviceable table Muscats; but the Vines are evidently worked hard. At one end of the Muscat house a Vine of Madresfield Court was carrying a heavy crop, and the cracking of the fruit can only be prevented by heating the pipes and maintaining a dry atmosphere—so dry that it is inimical to the Gros Guillaume near it, and in consequence of the different treatment required by these two Vines one of them will have to be removed. Several letters have appeared as to the splitting of the fine Grape in question, and the experiment noted is at least suggestive.

The mention of a good collection of herbaceous plants and a magnificent bed of German quilled Asters must bring to a close these random jottings, and it only remains to add that the courtesy of Mr. Blurton, as extended to his visitors, was such as to induce them, if they should ever be on wheels again, to turn the horse's head towards Kingswood Warren.—A CITY MAN.

BARLOW WELL-DRESSING.

A SHORT distance from the town of Chesterfield in Derbyshire is situated the picturesque village of Barlow, surrounded by hills and dales and magnificent scenery. Like some other parts of the county, the village has for many years past been noted for the ancient custom of well-dressing. Thinking it may interest many readers of this widespread Journal who take great interest in floral work, and as the custom of well-dressing is almost unknown in some counties of England, I give a brief description of the decorations of the present year.

The annual festival was held in the feast week which commences on the nearest Sunday to St. Lawrence. Two large wells were splendidly decorated with flowers, Ferns, &c. The chief one, which is situated on the main road near the church, consists of a large pump surrounded by a well-built stone wall open at the front, and was erected in the year 1840, over which is placed a large Gothic arch; on each side the arch on the front is a large spire, the whole having the appearance of a church porch. The chief designs of the decorations, which were splendidly drawn out by the Rev. C. Dyson, vicar of the parish, being the representations of Childhood, Youth, Old Age, and Death, all being handsomely made in various colours of flowers, the groundwork throughout the structure being of a rich green moss. The first design, which was the representation of Childhood, consisted of a boy and girl about the age of six years. The boy, who was taking hold of the girl's hand with his left, was busily engaged in catching a butterfly with his hat in his right hand. The girl, who had just lost one of her boots, was looking behind to pick it up; both attired in a rich blue dress made of blue Cornflowers, black boots made of a small wild black flower; the boy wearing a scarlet tie made of Geraniums, yellow stockings made of annual Chrysanthemums, black hat trimmed with red made of a small wild flower and red Stocks; the girl wearing a white apron and white stockings made of double white Feverfew, and dark bonnet made of dark French Marigolds. On the top, in large white letters made of double white Feverfew, surrounded by a beautiful border of yellow annual Chrysanthemums, were the words, "Happy Childhood."

The second design, which was the representation of Youth, consisted of a young gentleman and lady about the age of twenty years, just starting out for a walk on a fine summer's evening; the lady carrying on her left arm a beautiful basket of flowers, attired in a rich light dress with yellow sash, made of the finest light double Stocks and yellow Marigolds, a rich dark cape made of dark Sweet Williams, black hat trimmed with yellow, made of yellow Marigolds and a small black wild flower, and boots to match; the young gentleman being attired in a rich crimson coat with yellow buttons, made of crimson Candytuft and yellow Marigolds, a scarlet vest made of Geraniums, white trousers made of double white Feverfew, red stockings made of double red Stocks, light tie, gold scarf pin, dark hat, gloves in right hand, and boots to match. The features of this couple were remarkably good, for although the young gentleman was offering his lady-love a beautiful white Rose, she was evidently in a deep study, as if some solemn question had just been asked. On the top, in large white letters, surrounded by a beautiful border of red, was the word "Courtship."

The third design, which was the representation of old age, consisted of an old gentleman and lady about the age of seventy years returning home by the footpath from a short afternoon walk enjoying the beauty of autumn. The old lady, who is getting tired and weary with the journey, approaches a stile. Here the old gentleman was seen handing her over with his right hand, having his walking stick in his left, and wearing a crimson coat of the old style with yellow buttons made of crimson Candytuft and yellow Marigolds, white breeches made of white Feverfew, yellow leggings made of Marigolds, dark hat, white cuffs, spectacles and boots to match. The old lady was attired in a bright red dress and pink cape both made of double Stocks, a yellow head dress made of Marigolds, and boots to match. On the top in large white letters surrounded by a beautiful border of orange Marigolds were the words "Honour Old Age."

The fourth design, which was the representation of death, consisted of an angel ascending to Heaven with the departed, and was beautifully made of different colours of flowers, chiefly Feverfew, Pinks, Blue Buttons, &c. On the top in large white letters surrounded by a beautiful border of yellow annual Chrysanthemums were the words "Rest at Last." On the right hand of this design made in a twining manner of gold letters in a white ground were the words "In the Hour of Death Deliver us." Underneath and appropriate to the above designs were the four seasons of the year—spring, summer, autumn, and winter—in large white letters surrounded by a beautiful border of yellow Chrysanthemums. On the top of the pump was the English coat of arms all in flowers, with the words in red berries on a white ground "Dieu et Mon Droit;" and in yellow letters on a white ground "Peace and Plenty." The remaining portion of the pump was beautifully decorated with Ferns, Heath, and a variety of drooping flowers such as *Lilium lancifolium* and white Lilies arranged with good effect. In the centre of the basin was a water fountain in good working order. The floor of the structure was covered with green sods. Each spire on the front was decorated with the finest flowers obtainable worked in various forms of stars, &c., including a cricket bat, ball, and stumps, and round the front of the arch, in large white letters, were the words, "Thanks be to Him who giveth all." On each side was a row of different coloured annual Chrysanthemums.

Having given a brief description of the above, which is supposed to be the finest example of floral decorations ever seen in the county, I fear space will not permit to give every particular of the second, which is situated in the north of the village. The structure resembled the above, except that there was an open well in the centre instead of the pump. The chief designs were the coat of arms in large size, and the Prince of Wales' Feathers, both very beautifully made in various colours of flowers. On the top of the former were the words, "God save the Queen," and on the top of the latter, "God bless the Prince of Wales," and round the front of the arch, "How manifold are His works," all being made in large white letters. The flowers used at this well were chiefly wild ones, which had a very pleasing appearance. The work was quite equal to the first, the front being remarkably good. Great praise is due to all who took part in both decorations, which were greatly admired by a large number of visitors who came from different parts of the country. A large marquee was erected near to each, where dancing took place each evening. Those readers who reside in the neighbouring towns and villages, and are spared until the festival of 1887, the writer would recommend them to pay a visit, where they would find every comfort and enjoyment, and return home thoroughly satisfied with their visit to Barlow Well-dressing.—EDWARD MARGERESON, *Florist, Barlow, Chesterfield.*

OLD AND NEW ROSES.

[A paper by Mr. Joseph H. Bourn, read before the Massachusetts Horticultural Society.]

(Continued from page 212.)

BORN in the East, the Rose has been diffused, like the sunlight, over all the world. Syria, according to some writers, took its name from Suri, a species of Rose indigenous to that country. From the Celtic word "rhudd," signifying red, we trace a resemblance in the names by which various nations distinguish this plant—Rhodon, Rosa, Rosier, Rosaio, Rosal, Rosiera, Rosenstock. Classical writers, from Homer to Horace, extol the Rose above all other flowers; and those who loved beauty must have been its greatest admirers. The Rose is "the honour and beauty of flowers," says Anacreon; and it is spoken of at the Persian feast as

"The floweret of a hundred leaves,
Expanding while the dew-fall flows,
And every leaf its balm receives."

In the beginning of the ninth century Charlemagne manifested an appreciation of this particular flower, and later the hanging gardens in Hispania, under the Moorish dominion, were richly and heavily decorated in brilliant bud and bloom of Roses. How elegantly Cowper describes the expanding Rose, filled with the rain drops of the passing shower, as "weeping for the huds it had left with regret;" and Cowley sings of a Rose, surpassing these we have on earth, that the angels scattered from gilded baskets:—

"Some did the way with full-grown Roses spread,
Their smell divine, and colour strangely red;
Not such as our dull gardens proudly wear,
Whom weathers taint and winds' rude kisses tear."

The Empress Josephine was passionately devoted to the Rose, and sought for every novelty which the nations of Europe possessed, in order to gratify her pleasures in the garden at Malmaison; and it is said of her, that in all her greatness, a single Rose in her hair surpassed the jewelled diadem. In almost the last letter Mr. Longfellow penned, he spoke of arranging some wonderful Newport flowers in his library under the lamps, "fancying myself back in the days of the troubadours playing at the floral games of Toulouse."

Memory bears us up the stream of time, when we are to believe the Roses in the famous gardens of the East were as pure and steadfast as now, relics of Eden's bowers, "sweet nurslings of the vernal skies, bathed in soft airs." The same resistless beauty was doubtless manifest, flaunting in the shades of early morn; the same sunshine loved them then, because they were so fair; the same closing and fading of the petals were descried under the dropping of the dews in the gloaming. The ages certainly have not detracted from the loveliness of beauty's queen, nor has constant association made the Rose less alluring. The admirer of the Rose in summer time in this favoured locality can sit before his favourite flower in mute admiration, and find refreshment, rest, and peace in the parterre, as he surveys with delight his collection, whose brightness and sweetness bring tender memories, solaces, and hopes, while the reflections awakened by floricultural nomenclature afford new sources of enjoyment. He seems for a brief period to dream of other climes, in the companionship of distinguished friends and acquaintances, all attired in richest apparel. The counts and countesses, dukes and duchesses, princes and barons, lords and marquises, queens and empresses, sultans and presidents, cardinals and doctors, generals and captains, senators and reverends, ladies and knights, madames and mademoiselles, are a royal family, grand and graceful when expanded to fullest beauty "of flowers purple, red, and white, like sapphire, pearl, and rich embroidery," amidst Rose buds blushing through their bowers of green, more lovely still the more concealed.

"There a noble crew
Of lords and ladies stood on every side,
Which, with their presence fair, the place much beautified."

And so we talk, when the earth is clad in snow-white robes, "of the sweet season that bud and bloom forth brings." Now our thoughts again revert to the delights of spring and summer, full of sunny days and Roses. They carry us also to the primitive home of our cherished flower, where the objects of admiration are never exhausted; where the Syrian and Musk Rose, replete with dewy wine, cover the sacred ground. No frost there visits the grass. Emblems of life continually exist, and Roses glow in gem-like tints, hanging in cataracts from the grey walls of the fortified villages, topped by a crown of foliage. Amid such scenes the traveller exclaims in wonder, "Who can paint like nature!" as he views this shadowy curtain of gorgeous colours on mouldering stone-work when the sun goes down behind the amethyst-tinted hills.

"Soon we shall see the swelling huds,
As on by one their tender leaves unfold;
As if they knew that warmer suns were near,
Nor longer sought to hide from winter's cold."

Transitory, almost ephemeral, is a Rose's brief life of joy; but its sweetest gift is preserved in soft perfume as we drink the breath of the crushed, rosal leaves, after they have fallen and withered.

"She did not care to see their glorious hues,
Fearing the richer perfume she might lose."
"Yet, though thou fade,
From thy dead leaves let fragrance rise,
And teach that virtue lives when beauty dies."
"And yst may sweet things with us stay;
As in the garden Roses blow
In white and red,—just as they lay
In white and red so long ago."



KITCHEN GARDEN.

LATE VEGETABLE MARROWS.—A market grower was informing us the other day that he was now selling his Marrows at 30s. a ton, and, as they were much overgrown, we thought the price exceedingly high, as old overgrown Marrows are never good, and all who wish to enjoy them in perfection should use them when they are quite small and tender. The recent

hot weather has induced many of them to mature quick'y, and several plants are now bearing a crop of full-sized fruit. If these are allowed to remain no more young fruits will form, and the supply of useable Marrows will cease. If, however, the old fruits are cut a fresh set of young ones will soon follow, and a full supply of Vegetable Marrows of the best quality will be produced until the plants are cut off by frost in the early winter.

RIDGE CUCUMBERS.—These have been fruiting very freely of late. Indeed it is astonishing the quantity of fruit they bear, and close cutting is one of the surest ways of securing a succession. Many fruits are often left until they become quite yellow, and, as in the case of the Marrows, these matured fruits are entirely against young ones forming, and where good late crops are desired the fruit must be cut as soon as ready for use. Attention should also be given to watering, as the roots should never be allowed to become so dry as to cause the leaves to droop. Liquid manure may now be given them with advantage.

CAULIFLOWER.—These have been exceedingly good this season. The grub at the root—often so hurtful—has been quite harmless; the plants have attained a large size, and produced excellent heads. In many exhibits of vegetables of late, Cauliflower have been a leading dish in the collections. The heads cut in July and August were from plants sown in heat in February and March, and besides these it is always well to secure some from autumn sowings. Seed of approved varieties should be sown at once, that the plants may be dibbled into frames in October to stand the winter and head as early as possible next summer. There will now be many Cauliflowers heading, and as it is very important that they be kept white and tender, tie the leaves over the top of them as soon as it is noticed that they are being exposed to the light. Where caterpillars are troublesome, dust the plants over with lime. If there are too many heads going to be in at once, take a spade and cut the roots close to the stem on one side of some of the plants. This will partially check them and retard their swelling for a little.

CELERY.—Crops generally may now be earthed up. The rows intended for use in October and November should now be fully earthed. Those for December and January may be earthed about half way up, and the latest of all will be benefited by having a little soil put to the roots. We find when Celery is left very late without any earthing up the leaves are very apt to spread out and fall so much that they crack near the root. A little earthing to keep them upright prevents this. Some time ago we earthed up several short rows with a special mixture of ashes and sand with the object of having the stems extra clean for exhibition, but during the hot weather experienced afterwards the ashes became so hot and dry that they caused the plants to droop, and the plants are now inferior to the main crop, which is very good. Another time we would substitute sawdust for the ashes. The utmost care must be taken in all cases of earthing that none of the soil drops into the centre of the plants, and dusting them with soot or a little lime now and then will keep them free from worm marks.

MISCELLANEOUS.—Continue to clear off all old crops as fast as they become useless. Place them together in an odd corner to be mixed up with manure and be used again in the spring on flower borders and vegetable ground. Preserve the freshest of the Pea sticks. Take Onions that are ripe under cover. Destroy all weeds before they seed. Cleaning one part and allowing another to remain infested is fruitless work, as the seed will blow about everywhere. Plant Cabbage extensively; sow more late Radish and Onions; plant out large quantities of Lettuce and Endive; keep a sharp look out that slugs and snails do not destroy the young plants. Dust them with lime or put a handful of bran down with a Cabbage leaf over it, when they will congregate under the leaf and can then be "removed."

FRUIT FORCING.

PEACHES AND NECTARINES.—*Earliest Forced Trees.*—The trees have now shed their leaves, and they may be syringed with water at a temperature of 140° to 150°. It must not, however, be used carelessly; if too hot it will injure the trees, and if lower in temperature it is innocuous as regards scale and the eggs of red spider. The trees being loosened from the trellis and tied in small bundles for facilitating cleansing operations, wash the woodwork with brush and soap, reaching every angle and crevice. Limewash the walls, and if required paint the wood and iron work. Pruning will be a light affair—merely thinning the shoots where too crowded or too weak for carrying fine fruits, no shortening being necessary, except for the production of shoots for extension. Wash the trees with soft soap solution, 6 ozs. to the gallon, and afterwards dress with an insecticide, being careful not to dislocate the buds. Tie the trees to the trellis loosely, leaving sufficient room for the swelling of the branches and shoots. Remove the loose surface soil down to the roots, and supply a couple of inches depth of rather strong loam containing a sprinkling of half-inch bones. Avoid heavy surface dressings, they only exclude air and render mulchings of little value. If the lights have been removed, they should be replaced as soon as the borders are in a thoroughly moist condition, or before they become saturated by the cold autumn rains. For very early forcing Alexander and Waterloo Peaches are valuable on account of their size and colour, but under fixed roofs they have a tendency to over-maturity of the buds, common also to Early York and Noblesse, the best antidote for which is the removal of the roof lights as soon as the wood is sufficiently ripened, or in July. Under fixed roofs they in some instances are not satisfactory for very early forcing year after year.

Second Early forced House.—The trees will be shedding the leaves if the roof lights were taken off by the middle of August. In this, where we have Royal George, Noblesse, and Early York, we find the two last very much given to over-maturity of the flower buds; indeed, we have had

Early York blossoming and setting fruit in September, and the Noblesse cast its buds in a shower later on, but the Royal George and Elruge Nectarine—indeed, the small-flowered Peaches and Nectarines generally—have not the tendency to over-maturity of the buds, as is exhibited by the large-flowered varieties. Hale's Early and Early Alfred, also Dr. Hogg, have large flowers, and do not show the premature development of the buds nearly so markedly as the Alexander, Waterloo, Early York, and Gros Mignonne, with Noblesse, but they are never so reliable as Royal George and Stirling Castle, a form only of Royal George, and very excellent it is. Early Beatrice and Early Rivers have large flowers, but they are not nearly so liable to the same unseasonable precocity as the others named, so that the hypothesis of small flowers being not liable to over-maturity of the buds and the large-flowered varieties subject to it rests on something constitutionally cultural, and so far as we know is from too long subjection to a hot and dry regime. The removal of the roof lights prevents it if effected in time. When the leaves are all down treat it the same in every respect as the earliest-house trees, but the roof lights should remain off until the approach of severe frost and snow, and when replaced admit air to the fullest possible extent, so as to insure perfect rest to the trees, with freedom from severe frost and cold rain and snow.

Succession Houses.—Any trees that have a tendency to over-luxuriance should, as soon as the wood gets sufficiently firm, have a trench taken out one-third the distance from the stem the trees cover in extent of trellis and quite down to the drainage, so as to detach all roots, and this may be left open for a fortnight, then the soil may be removed with a fork down to the roots and picked from amongst them, laying in the roots in fresh material; good loam rather stiff being best, with about a sixth of old mortar rubbish. A good watering being given the roots will soon work freely in the fresh material, and the fruits invariably set well afterwards. In removing the soil care must be taken not to disturb the roots to an extent causing the sudden collapse of the foliage. Defer root-pruning and lifting until the leaves give indication of falling. The above plan is more especially necessary with young trees, the taking out of the trench being very effectual in assisting them to ripen the wood thoroughly.

Latest Houses.—The bright weather is greatly in favour of late varieties, which are something wonderful in size and beauty, and if given proper supplies of water and nutriment during growth are excellent in quality. A free circulation of air is necessary, utilising sun heat if the fruit is backward, as with ventilation in the early part of the day the temperature may run up to 85° or 90°, which is of infinitely more value than fire heat at a later period. The trees must have sufficient water, but a rather drier condition at the roots is advisable when the fruit is ripening. Keep the wood thin, stop any growing shoots to about 15 inches, and all laterals closely to one joint as growth is made.

MELONS.—The last plants are now well up the trellis and showing fruit blossoms. These should be fertilised daily, the atmosphere being kept dry, a little ventilation being given at night so as to insure a circulation of air and prevent the deposition of moisture on the blossoms. Stop the shoots one joint beyond the fruit. As soon as a sufficient number of fruits is set on a plant remove all the staminate and pistillate flowers, reducing the fruits to three or four on a plant, or according to their vigour. Earth up the plants after the fruit is fairly swelling, and be careful in syringing the foliage, only using it on bright afternoons, but keeping a genial condition of the atmosphere by damping in the morning and afternoon. Be careful not to give too much water, but encourage healthy root-action by moderate moisture in the soil. The temperature must be maintained at 70° to 75° by day artificially, and 80° to 90° by day from sun heat, with a night temperature of 65° to 70°.

Plants in pits and frames will not require further damping over the foliage, and should only have sufficient moisture in the soil to keep the foliage from flagging, which should be kept rather thin, and the fruit well elevated above it on flower pots, each fruit being placed on a piece of slate, applying good linings so as to finish the fruit satisfactorily, which requires a warm and dry atmosphere with free ventilation.

In order to enhance the flavour of late fruits maintain a brisk heat by day with enough ventilation to insure a circulation of air constantly, and keep water from the house after the fruit commences ripening, and do not afford any at the roots, or only to prevent flagging. The October-fruiting plants will be swelling, and must be assisted with tepid liquid manure whenever they become dry. Keep the laterals well in hand, also a sharp look out for canker, and rub quicklime into the affected parts, repeating as the appearance of the soil renders necessary, for it is next to hopeless striving to avert the evil at this late period of the season, only so far as to secure the ripening of the fruit is concerned. If there be any fear of cracked fruit cut the Vine about half way through a little below the fruit. It will check the flow of sap, but the chief cause of cracking is a close atmosphere, causing the deposition of moisture on the fruit during the night. Ventilate freely, and keep the air dry both as a preventive of canker and cracking.

PLANT HOUSES.

Dendrobiums.—When such kinds as D. Wardianum, Devonianum, crassinode, and others have completed their growth and commenced ripening they should be exposed to full sun. If they have been allowed to grow under moderately light conditions no harm will be done by placing them in the sun at once; but if the shade used has been of a permanent nature exposure must be gradual, or premature ripening will take place. This must be avoided if plump well-developed pseudo-bulbs are expected. Whether these varieties flower well or the reverse depends entirely upon the manner in which they are ripened. As they advance,

and the foliage is naturally ripened, less water, a cooler and a drier atmosphere, should be provided for them. Water should not be withheld suddenly, but gradually. *D. nobile* that was pushed early into growth will have developed fine large pseudo-bulbs, and if they are to flower profusely they must be exposed to the sun at once, or they will not become sufficiently ripened to flower on the growths that have been made this season. Any plants of this and other varieties that have not finished growing should be kept in brisk heat and more light afforded them than has been necessary up to the present time. Light, air, and a drier atmosphere are essential at this season of the year to complete and ripen the pseudo-bulbs before the approach of autumn, for if this is not accomplished before then a bountiful supply of flowers cannot be expected.

Thunias.—Seldom, indeed, do these flower satisfactorily when the growth of the plants in spring is retarded and made late in consequence. Every attempt should be made to bring the growth to a standstill, and ripen them in a slightly lower temperature than the one in which they have been growing, fully exposed to the sun. Very frequently the house in which these plants are grown is too much shaded and they become drawn, the growths often attaining a height of 5 feet. Such growths are seldom well ripened and often die back or damp during the winter when at rest. If this calamity does not befall them they very rarely flower the following season. They should not be grown too hot, or subjected to too much shade. If a circulation of air is maintained daily, or whenever favourable, and sufficient light to solidify the growths as made, every one of them will flower, the pseudo-bulbs become well and early ripened, and success the following season insured.

Lælia anceps.—If grown moderately warm with the *Cattleyas* flower spikes will be visible, which will scarcely be the case if the plants have been in an intermediate temperature. Plants producing flower spikes are very subject to aphides, which should be destroyed at once, for they suck the juices from the tender flower stem, which eventually turns yellow. Light fumigations with tobacco is the best and quickest method of destroying these insects. If desirable to retard any of these plants for forming a succession of bloom, the most backward portion of the stock may be removed to a slightly lower temperature. It is a mistake to do this by placing the plants in too low a temperature, for more harm than good will result from such treatment. Such treatment checks the plants, and they fail to make satisfactory growth the following season. While subject to a cooler temperature a little less water should be given, which will insure the roots remaining in good condition.

Cypripedium Sedeni.—This beautiful variety grows and increases very rapidly in stove heat, and its flowers are very effective. The time of flowering depends entirely upon the temperature in which the plant is growing. With sufficient plants and growing them in slightly different temperatures a long succession of bloom will be produced. This plant bears retarding without injury; directly the flowers fade growth commences from the base.

Cypripedium Spicerianum.—Earlier than usual this year this variety is throwing up its delicate and beautiful flowers. If they are not wanted for a time, the plant may be retarded. By giving a lower temperature for a time, extra luxuriance has resulted. We have always been rewarded with two flowers on each spike, which this plant is capable of doing under liberal treatment and judicious rest. While in a lower temperature care is necessary in the supply of water, it must not be too liberal; the water used should be tepid, cold water falling upon the foliage after removal to a lower temperature causing the leaves to be spotted.

THE BEE-KEEPER.

RENEWING WORN-OUT COMB.

THE older a comb is the less serviceable it becomes in a hive. Three years is quite long enough for any comb to be in use, especially in the brood nest, and for these reasons—1, Because many cells are filled with pollen, which is generally found in every hive in greater quantities than are required, and, 2, Because the cells become less every time a bee is hatched in them. Hives with comb twice seven years undisturbed by man may and have done well, but it is very ill-advised in anyone to trust to instances of this kind. In a small hive the lessening of the number of cells available for breeding purposes is nothing less than ruinous, while in a larger hive it hardly seems profitable to have cells filled with pollen which might be used to a better purpose. In a small hive a cell rendered useless means an egg wasted and a worker lost; in a large hive it is not quite such a serious matter, because there are more cells which can on necessity be utilised by the queen for breeding purposes. There are several ways in which new comb can be obtained to take the place of old in bar-frame hives, but it will be sufficient to give two, and the best of them is, after taking away all the old combs, either uniting the bees of two hives together or else strengthening the hive the comb of which it is desired to renew in the manner pointed out a few weeks ago, to put into the hive frames filled with foundation of the very best quality, and then feed as in the case of a skep, except that as the foundation will materially assist in the comb

construction, less syrup will be required than for a skep where every cell has to be formed from wax elaborated by the bees themselves. The next plan is to take out from one of the strongest stocks with new comb every alternate comb and put in the place of the frames so removed others filled with foundation, taking the others so removed from such stock and placing them and a frame of foundation also alternately in the stock the comb of which it is desired to renew. Both stocks will of course require feeding until the foundation is built out and food for winter is stored. The former plan has more than one advantage over the latter, and not the least is this, that in an apiary where comb is constantly renewed there is less likelihood of foul brood getting foothold, and also it is unnecessary to disturb any other stock; while if there is any disease in any stock, the moving of combs from one hive to another is the most ready way to spread it. The time for building up sugar-fed stocks is not yet over, and if it is desired to renew any combs it may still be done with a certainty of success. Comb built in autumn is preferable to that built in spring, unless foundation is used, and even then there is sometimes the same disadvantage, because in the spring bees are prone to build drone comb, while in autumn hardly any drone cells are formed at all; so the effort must be made to get every cell completed, and this, too, without any delay. Foundation must not at this time of the year be put outside the other combs, and in spring it is a very injurious practice to spread the brood by putting a frame of foundation in the centre of the hive. The time for all such manipulations, if they are to be performed at all, is immediately after the close of the honey harvest. The outside frames will probably contain honey of good quality, and therefore they may be broken up; but if the honey is not required they may, if of proper form and not containing drone cells, be brought nearer to the centre of the hive. In nine cases out of ten it is preferable to renew all the combs at once. Dzierzon does, I believe, approve of what he calls "spring pruning" of combs, and argues that if occasionally drone cells are formed where workers were before the reverse is often the case; but in practical apiculture, in this country at least, the practice is fraught with danger and is inimical to the true interests of a practical bee-keeper.

All that is required in moving hives is a perfect ventilation and fixity of combs. The former can be had by fastening a piece of wire netting on the top of the hive after removing the quilts and all other covering, and also fastening a piece of the same over the entrance, while the combs may be kept from moving either in the elaborate method given on page 105 of Cowan's *Bee-keepers' Guide Book*, or if the frames have shoulders by screwing some laths tightly over the tops of the frames, and if there are no shoulders, also putting in wedges to keep each frame in position, and as an additional precaution a rack may be used to pass along the bottom of the frames transversely, and they will thereby be held most securely in position. New combs travel very badly indeed, and it is very dangerous to have a hive which contains combs only a few weeks old. In previous numbers "A Lanarkshire Bee-keeper" has touched upon this point of moving hives, so that by referring back all the necessary information for guidance will, I think, be found.

Excluders of every description are a nuisance, and with proper hives they are totally unnecessary; they hamper the bees in their work and spoil the progress of a super. If there is, as there ought to be, a good breadth of sealed honey above the brood nest the cases will be very rare indeed in which the queen will pass this natural barrier. Not one single cell of brood has there been in any super in my apiary this year, and I am convinced that it would be a wiser policy to run what little risk there is of having a super occasionally marred by brood than to use excluder zincs. If brood is seen in a large super it can be cut out as soon as it is perceived, and a few days of fine weather will remedy the mischief; while if sections are in use it is the rarest possible occurrence to hear of the queen entering more than one, and this one may be put into the combs from which it is intended to run the honey.—FELIX.

TRADE CATALOGUES RECEIVED.

Sutton & Sons, Reading.—*Catalogue of Bulbs for 1886 (illustrated)*.
 Webb & Sons, Wordsley, Stourbridge.—*Bulb Catalogue for 1886 (illustrated)*.
 George Bunyard & Co., Old Nurseries, Maidstone.—*Illustrated Catalogue of Fruit Trees*.
 Dobie & Mason, 66, Deansgate, and 22, Oak Street, Manchester.—*Illustrated Catalogue of Flower Roots*.
 Compagnie Continentale d'Horticulture, 52, Rue du Chaume, Ghent, Belgium.—*Catalogue of New Plants*.
 Charles Turner, Royal Nurseries, Slough.—*Catalogue of Hyacinths and Choice Bulbous Plants*.



* * All correspondence should be directed either to "THE EDITOR" or to "THE PUBLISHER." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

Name of Insect (*C. D.*).—*Sirex gigas*, largest-tailed wasp. It will be more fully referred to.

Registration of Nurserymen (*J. J.*).—We know of no other medium for registration than horticultural and trade directories. Your own bill-heads are sufficient evidence of your being in business, and we fail to conceive that with a remittance or banker's reference you should experience any difficulty in purchasing goods at "trade" price. We feel confident there are nurserymen both at home and abroad who would supply you on that basis.

Insect on Chrysanthemums (*H. M.*).—Owing to the excessive heat of the weather while your last box was in transit to us the specimens enclosed were not only dead but dried. It has, however, been determined that they are the grubs or larvæ of a beetle which have been feeding externally on the leaves and stems. The species cannot be determined, but there are several already known as being thus destructive to cultivated plants. We would suggest that later on a watch be kept for any beetles amongst your plants, though it is probable that these hibernate and do not deposit eggs until the early summer. Something might then be done by way of application, in order to render the plants distasteful to the insects.

Judging Shallots (*W. B.*).—When judges differ and a referee is not called in to give a casting vote the responsibility of settling the point in dispute rests with the Committee. If the judges in your class awarded you the first prize, and the prize-card was affixed and remained there after the public had admittance to the Show, and, moreover, if the judges confirmed their decision on a re-examination, we suspect that you are entitled to the prize according to law; but please understand we do not advise your "going to law" or anything of that kind, as decisions are proverbially uncertain, and it is often an exceedingly costly process to win a case, saying nothing about the risk of losing. Regulation VII. in the schedule does not strictly apply to your case, though it has a slight bearing on it. If the alteration was made before the show was open to the public we think you have no claim to the prize. We do not think you acted wisely.

Vine Leaves Withering (*William*).—The premature ripening as represented by No. 1 leaf is either the result of a very dry atmosphere or defective root-action, and this latter may arise from an insufficiency of water or unsuitable soil. You say nothing about the growth, whether strong or weak, nor the treatment accorded; it is certain, however, the Vine does not receive the support that is requisite for maintaining it in a satisfactory condition. The No. 2 leaf appears to have been eaten by a weevil or caterpillar, and you had better make a search, with the aid of a light, an hour or two after nightfall. The leaf is also slightly scorched. We suspect the air of the house is too dry, and you may possibly err in your method of ventilation; also if the roots are inside the border it may not be sufficiently moist.

House for Tomatoes and Chrysanthemums (*A. B.*).—Considering that you want the house for Chrysanthemums after Tomatoes the larger house would be much the better, as the smaller houses whilst right for the Tomatoes would be less suitable for the Chrysanthemums. With the large house the side walls need only be a couple of feet out of the ground, as there will be sufficient head room through the increased width of the house. For heating, three rows of 4-inch pipes along both sides of the house will be required, and 2 feet from the side walls, so as to allow of a bed in which to grow the Tomatoes that are to be trained up the roof, trellises being fixed about 12 inches from the glass, and only extending about 6 feet up the roof, so that light could get at the central bed, in which Tomatoes could be grown also. The pipes must be kept above the ground. The pathways may be of laths. Bottom heat is not necessary.

Seeding Cucumbers (*A. C. J.*).—There ought not to be any difficulty in getting the fruit to seed at this time of year. Impregnate some of the most promising flowers when they are fully expanded, a dry fine day on which air is given freely being best for the operation, and the fruit will swell, and if there is seed in it will form a knob at the end. Fine even-swelled fruit are not equal to the knobby ones for affording seed. If there are any fruit with knobby ends we should let them remain, as they have been fertilised and contain seeds, so that you will have a better chance of ripening it than by fruit now fertilised, as the season is getting advanced for that purpose. The fruit should be left on the plants until it turns yellow, when it may be cut and kept in a warm house until the pulp becomes soft, when the seeds may be removed, washed, dried, and stored away.

Destroying Plantains on Lawns (*J. W.*).—The best plan we have tried is to lift the Plantains during moist weather with a daisy fork. If care is taken it will draw them up by the roots, and any that break off near the

top can have sulphuric acid (oil of vitriol) dropped on the part, and it will kill the root. Our plan in using it is to clean out an old blacking bottle, tie a piece of wire round the neck so as to form a handle to hold the bottle, which makes all safe in handling, then make notches at the end of a stick about as thick as the finger, then notches all round, and about 1 inch up the stick; some of the sulphuric acid being put in the bottle apply the notch end of the stick and it will retain sufficient of the acid to apply to each Plantain, putting it on the root. It will kill the Plantain by applying it to the centre of each plant; but we prefer to pick them up. Care must be used with the sulphuric acid, not trusting it to a careless or mischievous person.

Insects on Ferns (*Downton Lodge*).—The insects are brown scale, and have nothing to do with the soil. They are common to Ferns and many other plants. The best remedy is to pick them off whilst quite young, as when left to become brown and hard their shells only contain an innumerable host of young ones, and their disturbance in that state is wholesale propagation. The best plan to pursue will be to cut away the most infested fronds and burn them, and the others you may syringe with a solution of softsoap, 2 ozs. to the gallon of water, and petroleum at the rate of a wine-glassful to four gallons of the soap solution, and this should be kept well mixed by stirring briskly whilst being applied. Be careful to wet every infested part, and keep it from the roots, the plants being laid on their sides. If planted out use sponge and brush, and some approved insecticide, most of those advertised being efficacious if the directions are accurately followed.

Peach Tree Unfruitful (*M. L. G.*).—It would be much the best plan to well thin out the branches now, leaving no more than will be required for furnishing the tree and giving next year's crop. It would be a capital plan as soon as this is done to take out a trench about one-third the distance from the stem the tree covers in extent of trellis, and down so as to cut off all roots, leaving the trench open for about a fortnight; this will check the tendency to a late growth and encourage roots to form in the radius next the tree. The trench may then be filled up. When the leaves give indications of falling re-open the trench and remove the soil inward from the trench towards the tree, taking care not to injure the roots, and continue this working under the roots until you get so near the stem that a spade can be got under the ball, so as to cut off any roots that may strike down. It is well to leave the soil for a distance of about 18 inches or a couple of feet undisturbed, but removing the loose soil over the roots. Proceed to lay in the roots nearer the surface in fresh soil, and make it firm as the different tiers of roots are laid in the fresh material, covering the topmost roots about 3 inches. Mulch with 3 inches thickness of partially decayed manure about a foot further than the roots extend.

Resting Cattleyas (*A. B. C.*).—You must encourage your plants of *C. Mossiae* to complete the growths they have recently started from the base of the pseudo-bulbs. These growths must have been on the verge of issuing forth before you wrote to us; but even had this not been the case it is too early in the season to commence resting this variety of Cattleya. This season's growth could not have been thoroughly developed if made after the plants flowered in May and June, their usual time of flowering. The growth of the plant is not fully developed when the pseudo-bulb has been made and the flower sheath appears. It requires further development, which is not accomplished by subjecting the plants to rest, but by light and heat, a circulation of air, and a moderately liberal supply of moisture in the atmosphere and at the roots of the plants until the pseudo-bulb becomes firm. This treatment results in fine flowers, but the reverse those of small size, which are certain to be deficient in colour and substance. By resting your plant directly the pseudo-bulbs seem to be completed and the sheath appears, as was the case when you wrote to us, you prevent the plant making roots, which will end sooner or later in weakened growth and enfeebled health, and finally death. The production of back growths from the old pseudo-bulbs and a second from the leader displays to us that your plants are doing well, and you will be the gainer rather than the loser even if your plant failed to flower for one season. By destroying these growths or preventing them pushing by prematurely resting the plant you render it incapable of increasing its size or the number of flowering pseudo-bulbs. Orchid growers would willingly forego the flowers for a season to increase the number of leads or breaks of their plants. Your plants are growing slightly out of their season, but when plants are healthy they not unfrequently do this. We have a good number in the same condition, both of imported plants of last spring and the previous summer, but instead of trying to prevent their starting we are pleased to think they have broken so freely into growth. Nearly all the plants imported last spring are in this condition. These may not develop into pseudo-bulbs strong enough to flower, but they will do so another year. The plants in this condition must have every encouragement to complete this growth and ripen it, then there will be a fair season in which to rest the plan s. As they will grow longer they must be rested a little later in the spring than those plants that complete their growth earlier in the season. The principal object is to ripen these growths as thoroughly as possible, and then if the rest is short let it be complete by a slightly lower temperature than that given to the earlier ones, the atmosphere a little drier, and the plants given less water at their roots. If you do this, then start the plants into growth, and push them on in a little warmer temperature, or place them at the warmest end of the house—the position they should occupy now—they will grow with greater regularity, and the following autumn you will not regret the second growths having started.

Names of Fruits.—The names and addresses of senders of fruit to be named must in all cases be enclosed with the specimens, whether letters referring to the fruit are sent by post or not. The names are not necessarily required for publication, initials sufficing for that. Only six specimens can be named at once, and surplus fruits beyond that number cannot be preserved. (*Pomona*).—1, Scarlet Nonpareil; 2, Scarlet Nonpareil; 3, Kerry Pippin; 4, Ross Nonpareil; 5, White Paradise; 6, Brabant Bellefleur. (*Thomas Hogg*).—Nectarine Plum. (*T. S.*).—1, Keswick Codlin; 2, Fearn's Pippin; 3, not known; 4, Jefferson; 5, undoubtedly Victoria; 6, Kirke's.

Names of Plants.—We only undertake to name species of plants, not varieties that have originated from seed and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds

should bear spores. Specimens should arrive in a fresh state in firm boxes. Slightly damp moss or soft green leaves form the best packing, dry cotton wool the worst. Not more than six specimens can be named at once. (A. C.).—1, A variegated Orange, which you will find in some of the nursery-men's catalogues as *Citrus aurantiaca variegata*; 2, Is *Magnolia glauca*. (T. F. R.).—*Lycium europæum*. (J. T. W.).—The flowers are varieties of *Hibiscus syriacus*, one of the most attractive of summer-flowering shrubs. (Name Omit'ed).—1, *Solidago virga aurea*; 2, *Melilotus alba*; 3, *Lycostera formosa*.

Renewing Worn-out Comb (C. Scott).—Probably the article by "Felix" in the present issue gives the information you require.

COVENT GARDEN MARKET.—SEPTEMBER 8TH.

THE soft fruit being all over, our market has settled down to a quiet trade with heavy supplies.

FRUIT.

	s.	d.	s.	d.		s.	d.	s.	d.
Apples	1	6	to	4	Melon	each	1	0	to 2
Cherries	1	0	0	0	Oranges	100	6	0	12
Currants, Black ..	1	0	0	0	Peaches	per doz.	2	0	4
" Red	1	0	0	0	Pine Apples English ..	lb.	2	0	3
Figs	dozen	0	6	0	Plums	1	0	2	6
Grapes	lb.	0	6	3	St. Michael Pines ..	each	4	0	6
Lemons	case	10	0	15	Strawberries	per lb.	0	0	0

VEGETABLES.

		s.	d.		s.	d.			s.	d.		s.	d.
Artichokes	.. .. dozen	1	0	to	0	0	Lettuce	.. .. dozen	1	0	to	1	6
Asparagus	.. .. bundle	0	0	0	0	0	Mushrooms	.. .. punnet	0	6	1	0	0
Beans, Kidney	per bushel	2	0	3	0	0	Mustard and Cress	punnet	0	2	0	0	0
Beet, Red	.. .. dozen	1	0	2	0	0	Onions	.. .. hunch	0	8	0	0	0
Broccoli	.. .. hundle	0	0	0	0	0	Parsley	.. dozen hunches	2	0	3	0	0
Brussels Sprouts	.. $\frac{1}{2}$ sieve	0	0	0	0	0	Parsnips	.. .. dozen	1	0	2	0	0
Cabbage	.. .. dozen	1	6	0	0	0	Potatoes	.. .. cwt.	4	0	5	0	0
Capsicums	.. .. 100	1	6	2	0	0	,, Kidney	.. cwt.	4	0	5	0	0
Carrots	.. .. bunch	0	4	0	0	0	Rhubarb	.. .. bundle	0	2	0	0	0
Cauliflowers	.. .. dozen	3	0	4	0	0	Salsafy	.. .. bundle	1	0	1	6	0
Celery	.. .. bundle	1	6	2	0	0	Scorzonera	.. .. bundle	1	6	0	0	0
Coleworts	dcz. hunches	2	0	4	0	0	Seakale	.. .. per basket	0	0	0	0	0
Cucumbers	.. .. each	0	3	0	4	0	Shallots	.. .. lb.	0	8	0	0	0
Endive	.. .. dozen	1	0	2	0	0	Spinach	.. .. hushel	3	0	4	6	0
Herbs	.. .. bunch	0	2	0	0	0	Tomatoes	.. .. lb.	0	2	0	4	0
Leeks	.. .. bunch	0	3	0	4	0	Turnips	.. .. hunch	0	4	0	6	0

PLANTS IN POTS.

		s.	d.	s.	d.			s.	d.	s.	d.		
Aralia Sieboldi ..	dozen	9	0	to	18	0	Ficus elastica ..	each	1	6	to	7	0
Arbor vitæ (golden)	dozen	0	0	0	0	0	Fuchsia ..	per dozen	2	6	6	0	0
" (common)	dozen	6	0	12	0	0	Foliage Plants, var.	each	2	0	10	0	0
Arum Lilies ..	dozen	0	0	0	0	0	Heliotrope ..	per dozen	4	0	6	0	0
Bedding Plants, var.	doz.	0	0	0	0	0	Hydrangea ..	per dozen	6	0	12	0	0
Begonias ..	dozen	4	0	9	0	0	Ivy Geraniums	per dozen	0	0	0	0	0
Calceolaria ..	per dozen	3	0	6	0	0	Lilium auratum	per doz.	12	0	30	0	0
Cineraria ..	dozen	0	0	0	0	0	" lancifolium	per doz.	9	0	18	0	0
Cockscombs	per dozen	3	0	4	0	0	" longiflorum	per doz.	0	0	0	0	0
Crassula ..	per dozen	0	0	0	0	0	Lobelia ..	per dozen	0	0	0	0	0
Cyperus ..	dozen	4	0	12	0	0	Marguerite Daisy	dozen	6	0	9	0	0
Dracena terminalis,	dozen	30	0	60	0	0	Mignonette ..	per dozen	3	0	6	0	0
" viridis ..	dozen	12	0	24	0	0	Musk ..	per dozen	0	0	0	0	0
Erica, various ..	dozen	0	0	0	0	0	Myrtles ..	dozen	6	0	12	0	0
Euonymus, in var.	dozen	6	0	18	0	0	Palms, in var.	each	2	6	21	0	0
Evergreens, in var.	dozen	6	0	24	0	0	Pelargoniums, scarlet,	doz.	3	0	6	0	0
Ferns, in variety ..	dozen	4	0	18	0	0	Pelargoniums	per dozen	6	0	9	0	0

CUT FLOWERS.

		s.	d.		s.	d.			s.	d.	s.	d.	
Abutilons ..	12 bunches	2	0	to	4	0	Lily of the Valley, 12	sprays	0	0	to	0	0
Ageratum ..	12 bunches	2	0		3	0	Marguerites ..	12 bunches	2	0		6	0
Arum Lilies ..	12 blooms	4	0		6	0	Mignonette ..	12 bunches	1	0		3	0
Asters ..	12 bunches	0	3		0	6	Myosotis ..	12 bunches	1	6		3	0
Bouvardias ..	per bunch	0	6		1	0	Pelargoniums, per 12	trusses	0	9		1	0
Camellias ..	12 blooms	6	0		9	0	" scarlet, 12	trusses	0	3		0	6
Carnations ..	12 blooms	1	0		3	0	Roses ..	12 bunches	2	0		9	0
" ..	12 bunches	3	0		6	0	" (Indoor), per	dozen	0	6		2	0
Chrysanthemums	12 bches.	3	0		6	0	" Tea.. ..	dozen	0	9		1	0
" ..	12 blooms	1	0		3	0	" red ..	dozen	0	8		1	0
Corcopsis ..	12 bunches	2	0		4	0	" Moss ..	12 bunches	0	0		0	0
Cornflower ..	12 bunches	1	6		3	0	Primroses, Yellow,	dozen	0	0		0	0
Dahlias ..	12 bunches	2	0		4	0	hunches ..	0	0		0	0	
Epiphyllum ..	doz. blooms	0	0		0	0	Pyrethrum ..	12 bunches	3	0		6	0
Encharis ..	per dozen	2	0		4	0	Spiraea ..	12 sprays	2	0		0	0
Gardenias ..	12 blooms	2	0		4	0	Stephanotis ..	12 sprays	2	0		4	0
Gladioli ..	12 bunches	6	0		9	0	Stocks, various	12 bunches	3	0		5	0
Hyacinths, Roman, 12	sprays	0	0		0	0	Sunflowers ..	0	6		1	0	
Iris ..	12 bunches	0	0		0	0	Sweet Peas ..	12 bunches	2	0		4	0
Lapageria, white, 12	blooms	2	0		4	0	Sweet Sultan ..	12 bunches	0	0		0	0
Lapageria, red ..	12 blooms	1	0		2	0	Tropeolum ..	12 bunches	0	0		0	0
Lavender ..	dozen bunches	4	0		5	0	Tuberose ..	12 blooms	0	4		1	0
Lilium candidum 12	hlms.	0	0		0	0	Violets ..	12 bunches	1	0		0	0
" longiflorum, 12	hlms.	3	0		6	0	" Czar, Fr., ..	hunch	0	0		0	0

and discoloured. Some improvement has doubtless taken place in this crop, but the fine hot dry weather came too late to afford us a full, plump, clear-skinned grain, and some caution will be required in selling it. We may take it as a foregone conclusion that corn dealers will take full advantage of any inferiority of condition in the grain, and there must certainly be a limit to the reduction in the price of inferior grain beyond which we ought not to go. Till after the threshing it would be somewhat premature to come to a decision about selling, but if prices rule exceptionally low we shall certainly devote all the inferior grinding Barley to pig feeding. Our success in doing so last year would, of course, induce us to repeat a process which was so clearly our best possible course, and of which the results were so eminently satisfactory. So far as we are able to judge the samples from sound, well-drained, mixed soils are the best, and those from heavy lands are the worst. Of two ears upon our table that from mixed soil is full 5 inches in length without the beard, with handsome clear-skinned grain, while that from a heavy land farm is not so long by 2 inches, and is also inferior in every other particular. It is only after a critical inspection of the Barley upon the whole of our farms that we mention this, and we may add that reports from thin light lands are unfavourable.

In many districts Barley has been regarded as the only profitable crop under the depression, and a much larger area than formerly has been devoted to its culture. The fact of so much Barley having been spoilt for malting purposes last year, and the low condition of much of it this year, naturally gives rise to the inquiry, Is it desirable to extend the cultivation of Barley in this country? We have repeatedly cautioned our readers against flying to extremes in cropping, and we again say that we find it answers best to endeavour to improve on practice generally, so as to obtain larger crops of all kinds of farm produce, rather than to sacrifice some for the speculative growth of others. Wheat, Oats, Barley, Beans, and Peas may all still be grown profitably, if only the method of culture is sound, and the land clean, dry, and fertile. Pray note how we cling to this, how persistently we repeat that the soil must have due care, if we would have it yield us crops as full and abundant as is possible. The nature of the soil, its condition, its requirements, its treatment, are all matters to be thoroughly mastered if we would be successful farmers. We have recently heard frequent complaints of the crops on light land, and we must own that before being able to accord sympathy to the holders of such land we should like to know all about their treatment of it.

The mention of light land reminds us of a field under Mangolds this season where the soil is light and sandy. The crop is certainly a good one, but it has recently shown such clear evidence of suffering from drought that we know it might be better than it is but for a fault in culture, for which nothing can now atone. Artificial manure is of course highly necessary in root culture, but so too is farmyard manure. In such a light sandy soil as that of the field in question a double quantity of farmyard manure should be used for roots, simply because the large proportion of moisture contained in it insures them from harm from drought when once the plants are up and growing freely. This was not done, in point of fact the furrows were not half filled with dung, and during the hot weather the drooping foliage plainly indicated a cessation of growth, which must seriously affect the final result. Such a case as this is really only one of many where no thought is given to the special requirements of the soil. Mangold is so useful a crop that it should have much better cultivation than is usually given it. Stored with care the succulent roots are useful till midsummer, if only we have enough of them to keep up the supply so late as that.

Swedes and White Turnips also repay us well for careful cultivation, if only we use them in the right way. They are aids to successful farming which we would always have in season as good as is possible. This year they are generally good, and the sight of them has been very agreeable to us in



AMONG THE CROPS.

Good Barley will this year be one of our most profitable crops, for taken generally the Barley grain is coarse, small,

our walks among the crops. We have striven to study and apply to practice the lessons gained in such walks, and we would urge upon our readers the high importance of a study of the peculiarities of each season of growth, in view of gaining fresh information—hints for our guidance in the future. We have little faith in the man who knows all about farming and says he at any rate has nothing to learn. Sweet are the lessons of adversity, and we shall indeed find them so if they lead to better work in every department of farming, and enable us to hold our own in our keen competition with the markets of the world.

WORK ON THE HOME FARM.

Weekly purchases of sheep has brought our number up to nearly a thousand head, and, we must add, made a serious strain upon our farming capital, yet we still require another hundred for an off farm, and then we shall have perfected our plans for sheep-feeding for the season. The opportunity for doing this has arisen from the extraordinary growth of both green and root crops, and glad are we to be able to turn it to account. We have ploughed in several fields of Mustard, but one field with a fine crop of Mustard nearly 4 feet in height is being folded with sheep, because it adjoins an outlying grass meadow which they will go upon daily for a change. With a liberal allowance of cake and a run upon some Wheat stubbles those sheep will soon be ready for sale fat for the butcher, as they were forward in condition when taken to the Mustard. Upon another farm the sheep will go from Clover to white Turnips, which are so forward as to be now ready for them, not penny little roots, but splendid large ones and plenty of them. This crop of Turnips will be as useful in its way as the late crops sown specially for folding with ewes and lambs next March. If only flockmasters would confine the use of white Turnips to early and late folding, and would not allow pregnant ewes to go upon them at all, depend upon it we should not hear such doleful accounts of abortion as we now do so frequently. Surely it is high time that there should be an end of the practice which consists in running the risk of folding ewes upon Turnips before the lambing. We are always ready to listen to any plans of our shepherds, but we will not allow them to do a thing which we know to be wrong. If their services are worth having they will receive our orders with respect and carry them out faithfully. Let us urge upon every young man the importance of learning every detail of flock management practically, so as to be able to guide a shepherd. There is nothing like a master's eye, again say we. Only a day or two ago we looked through the ewes upon the home farm, and we detected two cases of fly-striking. Upon speaking to the shepherd about it he said he had only just examined those sheep, yet when he went back to them there were the maggots sure enough, and it only requires a little of Cuff's oil to destroy them.

A COOL SUMMER—DATES OF HARVESTS.

WHEN the summer of 1886 finally leaves us, says the *Daily News*, it will not be greatly missed. With the exception of a few warm days at the close of June and the beginning of July, the season has given us no settled weather at all, and so once more we have to chronicle a cool, changeable summer. While, however, the character of the season has been so poor, we must not run away with the idea that it has been bad to an exceptional or even to an unusual extent. The season has certainly been a little cooler than that of 1885, and much cooler than in 1884; but the summer of 1880 was quite as cool as the one which is just passing away, those of 1881 and 1883 were decidedly cooler, and that of 1879 was very much cooler. This comparison relates to the United Kingdom as a whole: if we take the eastern parts of Great Britain alone we find that the summer of 1886 has been cooler than in any year since 1880; while on the other hand, if we look only to the south of England we find that it has been warmer than any of the past eight years, with the exception of 1884 and 1885.

As regards the rainfall of the past season, the meteorological records show that taking the kingdom as a whole the summer has been wetter than those of 1884 and 1885, but much drier than in any of the five preceding years, and very much drier than in 1879. In the eastern and central parts of England, however, the season of 1880 was a dry one; while in the south of England the summer of 1883 was nearly as dry as this. The figures relating to the frequency, as distinguished from the amount, of rain tell a very similar tale, the number of days with rain being greater during the summer of 1886 than in 1884 or 1885, but decidedly less than in any of the six preceding years. It is therefore clear that both as regards temperature and rainfall the summer does not compare so badly with those of recent years. But then it must be remembered that these years have themselves been very poor. In the course of the past decade there has been only one hot summer, and that was in 1878. The season of 1884 was fairly good, but its warmth was due entirely to the excessive heats of August, the months of June and July being anything but summerlike.

Although the weather of the past few weeks has been upon the whole unfavourable to our cereal crops, it has not been so bad in itself as to afford any satisfactory explanation of the miserable reports that are now arriving from the agricultural districts. In the Wheat-producing localities as a whole the rainfall has not been in excess of the average, and in some portions of these districts it has been very much below the normal. Temperature again has not been excessively low, and there can be little doubt that had the Wheat crops commenced with a fair start the harvest reports

would have been very much more favourable than they are. We are therefore led to the conclusion that a good deal of the deficiency in the Wheat harvest of 1886 is due to the very cold winter and spring, and that even with a fine hot summer the yield would still have been short of the average. One injurious effect produced by the late spring was the retarding of the harvest time—always a mischievous process. Over the southern counties of England reaping has begun this year nearly a fortnight later than usual. In connection with this topic the following table, showing the date of commencement of Wheat harvest in West Wiltshire, may perhaps be of interest:—

DATES OF COMMENCEMENT OF WHEAT HARVEST IN WEST WILTSHIRE DURING THE THIRTY YEARS 1853 TO 1882, WITH AMOUNT OF DIVERGENCE FROM AVERAGE DATE.

Days.	Days.
1853. Aug. 13—6 later.	1868. July 16—21 earlier.
1854. " 18—11 "	1869. Aug. 5—2 "
1855. " 21—14 "	1870. July 27—11 "
1856. " 5—2 earlier.	1871. Aug. 12—5 later.
1857. July 29—9 "	1872. " 8—1 "
1858. " 29—9 "	1873. " 9—2 "
1859. " 23—15 "	1874. July 27—11 earlier.
1860. Aug. 27—20 later.	1875. Aug. 16—9 later.
1861. " 6—1 earlier.	1876. " 3—4 earlier.
1862. " 19—12 later.	1877. " 10—1 later.
1863. " 8—1 "	1878. " 1—6 earlier.
1864. July 27—11 earlier.	1879. Sept. 4—28 later.
1865. " 26—12 "	1880. Aug. 16—9 "
1866. Aug. 4—3 "	1881. " 6—1 earlier.
1867. " 10—3 later.	1882. " 15—8 later.

The table, besides being an agricultural record, is in itself also a meteorological register. In the cold season of 1860 we find that the harvest was twenty days later than usual; in the hot and dry season of 1868 it was as much as twenty-one days earlier; while in the disastrous season of 1879 reaping did not commence until September 4th, or nearly a month later than the average date. This year Wheat-cutting in Wiltshire was nearly a fortnight behind the usual time.

Every now and then it seems as though the seasons had completely changed; but if we will only take the trouble to go back far enough we shall find historical proof that we are not being dealt with more hardly than our ancestors. The records from time immemorial show that there have been occasional runs of bad weather followed sometimes by cycles of drought and heat. In the reign of Edward II. incessant rains were reported to have fallen every summer with only two or three exceptions, and fifty years later corn was again dear for some years owing to the wet seasons. After this there was a run of fruitful years until 1542, when commenced a period of rainy summers which lasted till nearly the close of the century. Again, in 1692 there commenced a long series of exceptionally bad seasons, traditionally referred to as the barren years, at the close of the seventeenth century. In 1773 Gilbert White remarks:—"Such a run of wet seasons as we have had the last ten or eleven years would have produced a famine a century or two ago." Then from 1792 to 1817 another cycle of bad seasons was experienced, after which the wet and dry years were pretty evenly balanced to 1877. Since then the general character of our summers is well known to us all. Whether any scientific explanation can be given of these periods of drought and wet, of abundance and of famine, is a question we must leave our philosophers to fight out among themselves. At present there is, so far as we are aware, no satisfactory solution of the mystery.

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude, 111 feet.

DATE.	9 A.M.					IN THE DAY.				Rain	
	Barometer at 32 1/2 in. and Sea Level	Hygrometer.		Direction of Wind.	Temp. of Soil at 1 foot.	Shade Temperature.		Radiation Temperature.			
		Dry.	Wet.			Max.	Min.	In sun.	On grass		
1886.											
August and September.											
Sunday	29	30.066	65.3	59.7	N.E.	63.5	78.8	52.2	106.5	45.3	—
Monday	30	30.024	68.4	62.8	N.E.	62.7	88.4	53.4	123.2	47.5	—
Tuesday	31	30.101	67.6	61.8	S.E.	63.7	87.8	56.1	124.4	49.3	—
Wednesday ..	1	30.125	66.2	62.2	Z.	64.5	84.2	59.0	117.7	52.2	—
Thursday	2	30.083	65.3	58.8	N.E.	65.2	66.2	58.6	80.4	53.8	0.232
Friday	3	30.090	61.9	60.6	E.	62.8	70.5	54.8	92.7	55.6	0.369
Saturday	4	30.045	64.5	64.1	N.E.	62.8	79.1	62.0	116.8	56.2	0.048
		30.076	65.6	61.4		63.6	79.3	56.6	108.8	51.4	0.589

REMARKS.

29th.—Fine and hot, but a little hazy early, and fog in early afternoon.

30th.—Bright and hot; a splendid August day.

31st.—Another glorious day: slight haze early.

1st.—Rather hazy early, very fine afterwards.


2nd.—Overcast morning, with steady fall of temperature; small rain began at 1 P.M., wet afterwards.

3rd.—Dull morning, bright after wards.

4th.—Slight rain at 5.15 A.M., thunderstorm at 8.0 A.M., with very heavy rain, thunder at intervals till 11 A.M., hail at 10.33 A.M.; fine, hot, and damp afterwards.

The warmest week this year, the temperature being about 9° above the average.—

J. SYMONS.



COMING EVENTS

16	TH	13TH SUNDAY AFTER TRINITY. Royal Horticultural Society Committees at 11 A.M. Cottagers' Show
17	F	
18	S	
19	SUN	
20	M	
21	TU	
22	W	

WHAT COOL ORCHIDS WANT.

ALTHOUGH numbers of Orchids grow and flower well in what may be termed a warm greenhouse temperature, it does not follow that they will succeed in all greenhouses. It is evident that some misunderstanding exists as to the essential requirements of Orchids, and it is certain that many plants have been ruined in consequence. The great majority of Orchids derive their sustenance mainly from the air, and this to be supporting must be moist. Rough fibrous material, such as spongy peat and moss, is suitable for the plants, not so much because of its innate virtues, but because it is such a good medium for holding, so to say, a large volume of moist air. Air fills all the interstices in the medium in which the plants are established, but if it is dry air they soon assume a sickly hue, whereas if it is properly moist they flourish.

Uniform moisture, such as Orchids delight in, cannot be maintained about the roots even by applications of water alone in a house having a dry breezy atmosphere. The medium employed in potting or basketing may be made wet enough at times, but if the air that follows the water—and it always does follow it—is dry the benefit conveyed by watering is momentary rather than sustained. Dry air, then, is inimical to the roots, and it is not less so to the foliage and pseudo-bulbs of the plants. Steady sustained moisture is the chief requirement of Orchids, the degree of moisture to be determined by the season of growth and temperature.

The atmosphere of even a warm greenhouse in which flowering plants generally are maintained in a satisfactory condition is quite unsuitable for Orchids. It is too dry for them, and to afford the requisite moisture would necessitate the house being kept too close for the other occupants. Orchids and Ferns will thrive together, but Orchids with Pelargoniums is an unnatural alliance. It is not a question of temperature alone, for this may be right for both, but of moisture in the air, on which success or failure mainly depends.

Many so-called cool Orchids are far better in frames in summer than in greenhouses with other plants, because the air of the frames can be kept in a far more equable state of moisture than is possible on the dry stages of a house and with the wind driving through the sashes. Several Orchids succeed excellently in frames in the summer, the plants elevated on pots inverted in saucers of water, the ashes between the saucers being also moist, at least in dry weather. During a dull and damp period and towards the autumn the air is naturally damp, and it may not be necessary to syringe either the plants, pots, or base on which they stand. Various forms of *Odontoglossums*, *Oncidiums*, *Cypripediums*, also *Lælias*, *Cymbidiums*, *Epidendrums*, *Masdevallias*, *Cœlogynes*, and sundry other Orchids may be kept in admirable condition in frames from early summer till early autumn, and they can be much better kept in warm greenhouses in the winter than they can in the summer, because in winter they do not

require so much moisture, and the houses can be ventilated without throwing the front sashes wide open; indeed a position can generally be found for the Orchids where the front sashes can be kept closed, but dry air must never rise up amongst them from hot-water pipes, or the plants will be almost certain to go wrong. A close stage is essential, and it must be kept more or less moist according to the weather and temperature. In some houses and under the management of some persons the plants do not suffer in a temperature of 45°, but that is fully too low for damp structures, and a few degrees more warmth will be found generally advantageous. From 45° to 50° may be regarded as a “comfortable” night temperature in conservatories in winter, and suitable for a great variety of plants besides cool Orchids.

Many Orchids succeed admirably in well managed vinerias that are started in February or early March. Vines will rest quite well in a temperature of 45°, or a few degrees higher; so will cool Orchids. The slightly increased heat and moisture that are necessary for starting the Vines also gently stimulate the plants, and both Vines and Orchids require a steady progressive temperature and increased moisture as growth proceeds. The shade from the Vines, that deepens daily as the sun gains power, suits the plants beneath, and the genial moisture that is needed for expediting the swelling of the fruit is equally enjoyed by the swelling pseudo-bulbs. Then as the Grapes colour the gradual reduction of moisture is invaluable for the ripening of the fruit above and the plants below. This is practically “warm greenhouse” temperature, for greenhouses in summer are as warm as vinerias; but there is a vast difference as regards atmospheric moisture in those structures, and that is exactly the reason why Orchids succeed in one case and so often fail in the other. Moisture they must have during the season of growth or they will make no satisfactory progress, and if they are not going forward they will soon go backward, as they cannot stand still for long.—EXPERIENTIA DOCET.

It is surprising to me to see doubts cast upon the successful cultivation of Orchids amenable to cool treatment when grown in a cool house, and I think when failure occurs it must be the cultivator instead of the cool treatment which is at fault. The way not to succeed with Orchids amenable to “cool treatment” is to place them in a greenhouse along with Pelargoniums, Fuchsias, and such like plants on a dry open stage with a cold harsh current blowing amongst the Orchids, and these, further, imperfectly watered. In hundreds of cases cool Orchids have been treated like ordinary greenhouse plants, and then the grower coolly says that it is the “cool treatment” which is at fault when the Orchids go wrong.

I daresay not one cultivator in a score who is successful in the cultivation of cool Orchids will differ from me when I say that to cultivate these plants successfully is to subject them to cool treatment. Very little artificial heat is required, only sufficient to prevent the temperature falling below 45°, and on cold, wet, or foggy days to maintain a buoyant atmosphere by dissipating excessive moisture. As the season advances the temperature must be allowed to take a natural rise. The staging should not be dry and open, but composed of slate, and this should be covered with shells, broken cinders, or fine coal with the dust sifted out. This should always be kept moist, which will cause a genial humidity about the plants. The plants must either be elevated on pots or on a light stage erected about 6 inches above the other; it would then be a double stage.

Ventilation is very important. It should be applied at the apex of the roof, and in such a manner that a cold draught does not blow on the plants; this must be especially guarded against, and the quantity of air admitted should be determined by the state of the weather. When the weather is mild and moist, or close, more air will be needed than when the air is dry, or when a cold cutting wind is blowing, with

strong sun heat. When this latter is the case the house should be more heavily shaded, and be kept well damped both between the pots and on the floor. The side lights should not be opened, but bottom ventilation is very beneficial when it can be applied under the staging by what are termed "hit and miss" ventilators. Whatever aspect the house has, shading must be applied so as to keep the sun from shining fiercely on the plants from early in March until about the commencement of October, and if the house has side lights the safest plan will be to tack on some tiffany or scrim the whole of the summer.

The majority of Orchids amenable to "cool treatment" should never be allowed to suffer by the want of water, winter or summer, as they are never completely at rest, and to dry them off like a *Dendrobe* would be to court failure. The safest guide is to keep the sphagnum healthy and growing, and when this thrives the Orchids will do the same. We apply water just as the sphagnum commences to have a white tinge, and it is applied with a syringe, which is far handier for the purpose than a water-pot.

The material used for potting is equal parts of growing sphagnum and very fibrous peat, with a good addition of charcoal and clean crocks broken to about the size of a hazel nut. The pots should be about three parts filled with cleanly washed crocks, the centre of the plant elevated about an inch above the rim of the pot, and the potting material be firmly packed about the roots. Orchids are now comparatively cheap, and it is generally the cheapest in the end to buy established plants from nurserymen who make a speciality of Orchids.—A. YOUNG.

I AM glad to find by the remarks of Mr. J. MacDonald (page 208 of the Journal) that my inquiry with regard to so-called cool Orchids has attracted attention. I should, however, like to explain that I was not referring to the treatment of Orchids with greenhouse plants, but in houses specially devoted to them. It is, I think, generally understood that orchidaceous plants, though not always requiring a high temperature, need more moisture and less air than the generality of greenhouse flowers, and careful shading. I append a selection from a list of Orchids which are said by one of the first nurserymen to be admirably suited for cool treatment, which, however, my experience does not confirm—*Anguloa Clowesi*, *Cattleya marginata*, *Coelogyne cristata*, *Cymbidium eburneum*, *Cypripedium Harrisianum*, *C. Sedeni*, *C. venustum*, *Laelia anceps* and *autumnalis*, *Miltonia Morelliana* and *spectabilis*, *Odontoglossum grande* and *Insleayi*, *Oncidium aurosum*, *crispum*, *curtum*, *dasytile*, *flexuosum*, *Forbesi*, and *prætextum*; *Sophranitis grandiflora*, and *Zygopetalum Mackayi*. All these I have found do better in the *Cattleya* house.

To sum up, a distinction should be made between Orchids which will stand to flower in a cool house, and those which will grow and flourish there.—A. SUBSCRIBER.

PRUNING AND TRAINING VINES.

THE observations and experiences of "Experientia docet" at page 173 are, to my thinking, eminently seasonable and suggestive. Spur-growing and restricting the growths is not the way to get Grapes on weak Vines, and to prune vigorous ones closely is to prevent their bearing. The system your correspondent advances is as "old as the hills;" known formerly as the rod system, there being both the long and short rod systems, and is certainly anterior to the spur system. In these days the rod system has lost its name, and is analogous with the resurrectioned one of "extension," which may mean anything or nothing, but under its proper term of rod is readily recognised by those having some few years' experience of Grape cultivation. I can remember when there were as many Vines on the rod as on the spur system, and the finest and most successful of Grapes exhibited at the local shows, as well as those honoured with medals by the London Horticultural Society (R.H.S.), were those grown on the rod system. The idea of the rod system was that of securing fruit on the wood of the previous year not having borne fruit—that is, wood or a cane allowed to grow to a certain extent without hindrance or the burden of fruit, as is the case with the shoots of a young Vine pruned on the spur system. Instead of the annual growths being cut back to one or at most two eyes, as in the case of a spur growth, the whole of those on the rod system

were leaders eventually shortened more or less according to the method adopted.

I have pruned Vines on the rod system, leaving about 15 inches for the short rod and 30 for the long rod, choosing the best eyes as ends nearest the length named. All the laterals or side growths fruited, or as many as were allowed to remain at disbudding, being cut away in the autumn or with the Grapes. This system gave some splendid bunches. There were no small, in fact, unless they were taken from shoots that arose from the lower part of the rods—i.e., of the annual length made; besides some "thumpers" at the top as the leading shoot of each rod was allowed to fruit on the last length made. I have a clear recollection of this long and short rod system; indeed, have seen a cane taken from the bottom to the top of the rafter in a season, and from one end to the other of a long house in the same time, and allowed to carry fruit, a bunch from every other shoot on opposite sides of the rod the year following, twenty-two bunches on the upright and over forty on the horizontal. This was growing wood one year to fruit the next, and is the same now practised with Vines in pots, with the difference that we got a much stronger cane from the Vines planted out and established in a border than in pots. The bunches were big, loose, uneven in berry, and not very satisfactory in finish. The whites were the more satisfactory; they did not show the bad finish nearly as much as the black. They were liked at table when there were parties and for the exhibition, which was perhaps once a month in the first case and once a year in the other; but for everyday use the small bunches of three-quarters to 1 lb., the produce of Vines on the spur system, were most in request. The bunches on the spur system were twenty to twenty-four on a rod in a house of 18 feet width; on the rod system we had, perhaps, half a dozen "thumpers," weight for weight per Vine not materially different, but there was a great difference in usefulness. The small bunches compact, large in berry, and fine in colour and finish, were liked because fresh and good, and the big bunches were not liked because they were too much for once and not presentable a second time.

It is with Grapes as with butter, which is liked best when in small lumps, even old butter looks most like fresh when made from the lump into pats. The rod system means big bunches, loose, coarse, and unserviceable; the spur system means medium-sized bunches, compact, stout in shank and footstalks, large even-sized berries, perfect in colour and bloom, with every other characteristic of high finish, and most serviceable in early, mid-season, and late, through their better keeping quality. Either system may be overdone. This is not, perhaps, what your correspondent alludes to in his observations on the unsatisfactory cropping of weak and gross-growing Vines, but I consider it has that tendency, extension meaning larger bunches and often badly finished fruit. Vines in a suitable border and house judiciously managed are, so far as I have seen and experienced, with few exceptions most satisfactorily treated on the spur system. Some Grapes are shy at fruiting where close pruning to the orthodox bud or a couple of eyes is practised; but they are rare when the Vines are sufficiently vigorous and the wood is thoroughly ripened. The most notable examples are in the large-bunched varieties such as *Gros Guillaume*; but even with these the most compact bunches and most perfect in finish are had from the eyes nearest the base, and the biggest, looser, and coarsest the nearer they are the top of the previous year's wood. Muscats also bear best from eyes some little distance from the base, and the like remarks might be further extended, but is the same in all cases—viz., the nearer the base the buds are left at pruning the more compact the bunches and better the finish of the Grapes, and the further the buds are from the base the more we increase the liability to looseness of bunch, to unevenness of berry, and uncertainty of finish. These are well-known axioms in Grape culture and I think they are, by the remarks of your correspondent, likely to be overlooked, quite unintentionally on his part, for it is perfectly clear his animus, if he have any, is not directed against the spur system so long as it affords satisfactory results, but against that apathy and inanition which discontent with things as they are does not result in efforts at improvement.

As an example of the mode of training alluded to on page 173, I may mention the Vines in the large conservatory at Chiswick. They seem to be trained on the rod and spur system combined, a sort of go between, neither the one nor the other particularly, but something of both. When a rod gets aged and gives too small bunches or too few on the spur system a young cane is trained in and the old rod displaced by the young, and it seems to be a continuous process—i.e., the training in of young canes to displace old rods so that there is no loss of crop; in fact, it is taking time by the forelock, not waiting a disaster before taking remedial steps, but foreseeing increased diminution of crop in present weakness, promptly meeting it by increased

vigour in an extension of growth, increased root-action, greater supplies of nutriment passed to enlarged parts through freer, because younger and wider channels. The system pursued is a modified rod and spur system of Vine cultivation. The principle is to train in a young growth wherever there is space or one is wanted to displace a rod weakened by fruiting, and so by rejuvenation of the Vines an abundant crop is had of bunches, large, medium, and small, all fine in berry and of good finish, so that every want and taste is catered for and met, whether it be the big bunch for parties or the medium and small for everyday consumption. This, I think, is the system your correspondent wishes to see extended in gardens, so as to increase the cropping of the Vines, secure crops of Grapes of greater interest and service to the proprietors and doing more credit to the cultivators. It is the principle of the rod denuded of its crudities, the principle of extension without its disadvantages, in that no growth is allowed to be made, but that having full exposure to light and air, especially those leaves that are to transmit elaborated and assimilated nutriment to the buds at their base, and which are to be pruned to or reserved for furnishing next season's Grapes. It is a certain means of keeping the roots active, and of reliance on a crop on parts not previously burdened and weakened by fruiting. The only danger is in overcrowding, common alike to the rod, spur, or that to which your correspondent has directed attention in a manner which should set Grape growers thinking how best they can act to increase the produce of their Vines. I thank "Experientia docet," as many others will no doubt without giving it public expression, which is to be regretted, as it might prove an incentive of something equally trite on other subjects of interest and importance.

Extension is the panacea propounded by our friend for weak and gross Vines, the roots in both cases not being practically under control. I have had Vines in "borders" of a yard wide with an 8-foot gravel walk and lawn in front. To get at the roots in such case was simply impracticable. They had rambled away. I found some in planting an Arbor Vitæ on the lawn at least 8 yards distant. A Vine filled a house 40 feet by 20 feet in one case, and that a Black Hamburgh. Some young canes were run up, and though they did not improve much in vigour the first year they were much stronger in the second, though the crop, through the fruit being borne on young wood, left at pruning 6 inches to 5 or 6 feet long, was much better; in fact, double in weight to what it was in the previous year. The Vines kept on improving. In a mixed vinery I once had charge of was a Vine labelled Alicante. It was an old vinery planted in 1837, roots all outside. The other Vines were fairly satisfactory in fruiting, but this particular Vine was sterile. Its roots went straight down by the wall; subsoil clay over freestone. They were in a cold wet medium, bare and fibreless to the depth of the border. Nothing was allowed to be done at the roots. The Vine must not be touched. The growth was gross as to length, long-jointed, and though it was late in starting it soon out-distanced all others in growth. It must be kept to its space, therefore was stopped, and it showed fruit on the laterals—poor things of bunches. A cane was run up, which ripened and gave fruit the year after, which, though it did not colour well, gave satisfaction, and that was everything.—G. ABBEY.

CHRYSANTHEMUMS AND THEIR CULTURE.

(Continued from page 226.)

ARRANGING IN STANDS.

THAT there is a right and a wrong method of arranging Chrysanthemum blooms in stands for exhibition is plainly exemplified at almost every show which is held throughout the country. To a beginner this matter may appear to be of little importance, but when he has had experience he will find that a considerable advantage is gained by arranging his blooms in the stands in a manner calculated to show them to the best advantage. An error into which nearly all young exhibitors fall is this, they cut the blooms with much too short a stem, thus fixing them in the tubes so that the blooms rest on the board, which dwarfs them in appearance considerably. The correct method of arranging in the stands is to place the blooms at such a height from the board that the size of each is displayed to the best advantage. The stem should be cut 1 inch longer than the tube; this allows for elevation, when cups are not used of the pattern as shown by fig. 25. When the blooms are required to be higher than the stem will allow, and cups without springs are used, narrow strips of brown paper wrapped round the stem of the tube will raise the blooms to any required height. If they are placed too high in the stands they look ungainly; there is a certain point at which they look the best, and this I will endeavour to make as clear as possible. I will take a stand of

twelve incurved flowers, giving the names of those varieties which I consider make a representative collection, arranged according to the colours of each so as to harmonise agreeably. This is a point requiring much consideration, as nothing is worse to the eye than two flowers the colours of which kill each other, so to speak, by being staged in the wrong place. I will also give the height at which the back, middle, and front row flowers should be placed from the board measuring from the bottom florets; the names of the blooms in each row read from left to right as follows—Queen of England, 5 by 3 inches; Empress of India, 5 by 3 inches; Alfred Salter, 5 by 3 inches; Lord Alcester, 5 by 3 inches; Princess of Wales, 5 by 2½ inches; John Salter, 5 by 2½ inches; Jeanne d'Arc, 4½ by 2½ inches; Prince Alfred, 5 by 2½ inches; Jardin des Plantes, 4½ by 2½ inches; Hero of Stoke Newington, 4½ by 2½ inches; Refulgence, 4 by 2½ inches; Princess of Teck, 4½ by 2½ inches. The blooms in the back row should be elevated 1½ inch from the stand, those in the middle 1½ inch, and those in the front row fixed 1¼ inch above the board or stand. By fixing them at these heights every bloom is shown to the best advantage. The figures following the blooms denote their sizes, the first one representing the diameter, while the second gives the depth. A selection of varieties could be made to appear much larger on the boards by including such as Golden Empress and Golden Queen of England in the middle row in the place of, say, Princess of Wales and Jeanne d'Arc; the last named would then be brought into the front row in the place of Princess Teck and Jardin des Plantes; but such a stand as that is seldom if ever seen. Therefore I think it far better to enumerate those varieties which are in more general use than to mislead by including the unlikely ones. Reflexed and Anemone flowers should be arranged in the same manner as the incurved.

The varieties of Japanese with long drooping florets require setting up a little higher on the board, just sufficient to allow the points of the florets to stand clear. The cupping of these should be done in a careful and judicious manner. Each variety requires special study, as the forms vary so much in character. Take Boule d'Or or Meg Merrilies for instance, neither of which possessing long drooping florets should be "cupped" in such a manner that the florets are placed in a horizontal position; the tube should be of sufficient diameter to support them in such a way that they retain their drooping character, not quite in such a perpendicular form as when growing on the plant, because in this way much of the size of the bloom is lost by not spreading them out to the best advantage. Place them in the tube then in such a way that the florets droop easily; the relative length of these of each variety must guide the exhibitor in fixing the height from the stand. It would be almost impossible to define accurately the height in inches of each flower. The number of varieties of Japanese so far exceeds the incurved that a "selection" if given would perhaps not be available at a given date. Owing to the interlacing of the florets of some sorts and recurving of others the blooms in this section are not so easily arranged in the tubes as the incurved type. The best way to proceed is the following: Take a bloom of any of the long-petalled varieties, turn it upside down, slip the tube over the stem, place the stem of the flower in the mouth of the operator; this sets both hands at liberty. If the florets are interlaced at the back of the flower, with both hands disentangle them and spread them out evenly, then with one hand hold them in position, and with the other hand slip the tube into its place close under the base of the florets. Tightly hold the stem of the flower and the tube in the hand, turning it into position so that the correct height to fix the tube in position can be ascertained; by slipping up or down at will, the florets can thus be brought into the required form, then with the cork as previously described make the bloom fast in the tube. The new type Anemone Japanese owing to their long guard florets require treating in the same manner as the others.

Pompon and Anemone Pompons are generally shown in bunches of three flowers, one on each stem, with their foliage. In arranging these in the stands the flower stems for back row should be cut 7 inches long, for the middle row 5½ inches, and for the front row 4½ inches; the blooms are placed in a triangular position, two at the top and one below, just sufficiently low to allow of the bottom flower being plainly seen without in any way interfering with those above. As varieties varying in size of flower it is difficult to say how much the front flower requires to be lower than those above; therefore the size of the flowers must guide the grower in this respect, but 1 inch will allow for the arrangement in most instances. The peduncles of some varieties are so weak that supports are necessary to show the blooms to the best advantage, in fact, all are much improved by fixing them firmly and exactly where wished. Nothing is better for this purpose than galvanised wire, about the thickness of small knitting needles, cut the same length as the flower stem. About 3 inches from the point at the top give the

wire an easy bend of say 1 inch from the straight; this gentle curve holds the blooms free from each other. Of course the two longest wires are bent in an opposite direction; then bind fine wire around the stem and the stout wire, and the blooms will be kept in the proper position, and can be set into the cups at will. The front or shorter flower should have a leaning towards the front when staged on the boards. All the leaves being retained on each stem much improves the appearance of this class of Chrysanthemums. Arranged and fixed in the manner described the flowers travel securely any distance. Only the cups containing the water are used in staging these types. Uniformity in the size of the blooms is a point to consider as being necessary to insure success, and an harmonious arrangement of the colours should be adopted. A white and a deep lilac or a purple go well together; never place two pinks or two yellows close together.

Naming should be done with accuracy; misnaming causes much confusion in the season following, if not at the time. An exhibitor not naming his flowers correctly often causes nurserymen much trouble and annoyance. Many people go to shows and see flowers well shown; they take the names and order the varieties, consequently, if wrongly named at the show, when the plants bloom in the following season they are quite different to those expected, because the nurseryman has sent the varieties true to name. Hence there is annoyance to the purchaser as well as to the nurseryman; and it behoves all growers of Chrysanthemums to be particular in naming their specimens. There are various methods of naming the flowers adopted by growers, but the most satisfactory way that I am acquainted with is that adopted by the Kingston Chrysanthemum Society. It is stipulated in its schedules that all names must be written upon labels supplied by it, thus uniformity in the naming is insured in all classes of cut blooms in the show. Those supplied by this Society are adhesive, about 3 inches long by 1½ inch wide, each label bordered with a narrow blue line. This ornamentation is purely a matter of choice as regards the colour, but the method is good, as when the blooms are arranged in the stands at home the names, plainly written, are fixed on the board in front of them, when if any bloom has to be removed for convenience in packing its proper position is easily found again by the fixed label; hence the advantage of adhesive labels. Some growers have small cards with the names printed upon each; this is an excellent plan to enable the public to ascertain the names, but they are liable to be lost when laid loosely on the stand; also too much time is taken up on the morning of the show in placing them in their relative positions. I prefer the adhesive labels to all other methods of naming.

Attempts have been made by persons desirous of initiating a change of arranging the blooms in stands by staging them in a more natural manner, but the best attempt I have seen has ended in a failure. Such inventors may be pushed to adopt a fresh scheme because they cannot accomplish the dressing of the flowers in a satisfactory manner, therefore I attach little importance to the innovations. Societies have offered prizes for blooms staged without dressing and without tubes, but have always failed in their object—viz., to obtain a representative collection. Many varieties are too weak in the peduncles to admit of their being staged without support, hence the failure. Again, some kinds produce peduncles 9 inches long, and consequently in such instances no foliage can be staged with the blooms, rendering them gaunt-looking objects. I have seen the stands covered with green moss and the front edged with *Isolepis gracilis*, but surely well-grown flowers of Chrysanthemums do not require any adornment. The old-fashioned plan of placing paper collars under the blooms has become almost obsolete, and a very good thing it is; they never improved their appearance, but rather the reverse.

STAGING AT THE SHOWS.

The same care observed in "preparing for shows" should be followed in staging. Close attention must be given to all small matters. The plans as to how the necessary arrangements shall be carried out, and what part each person who goes to the show shall take in the final arrangements, should be well thought out. The most important point is to arrive in good time, so that no rush or hurrying over what is to be done need take place. When the show is reached unload the boxes from the conveyance as carefully as possible, and stand them under cover where neither the sun nor rain can harm them, and also be sure they are not placed in the way of any other exhibitor, thereby interfering with his convenience. Let it be borne in mind that all exhibitors have an equal right, or should have, to any privileges for the quick dispatch of minor matters in connection with staging. Be careful to exercise the greatest civility to all your opponents, and do not be above lending a hand to lift a box, or assist in any other reasonable way. These amenities go a long way towards establishing a friendly

feeling amongst exhibitors, and thereby making the visit to the exhibitions so pleasant as to create a desire to attend again. Look around for some quiet corner in the building, or a room connected therewith, where visitors cannot trouble you, as criticism of the flowers at that time interrupts far too much the work in hand. Many exhibitors waste much valuable time in walking around examining other people's exhibits and so on. Take one class at a time, re-arrange the flowers according to the colours as previously decided. This is easily done if the labelling of the blooms has been carried out as advised. Each flower should be examined separately, brushing off any dust which may have accumulated during transit with the brush, using it always in an upward direction in the case of incurved blossoms, always finishing off in the centre, which tends to preserve the incurved form. Some florets will be almost sure to be shaken out of place; these must be re-arranged with the forceps, preserving the form previously acquired, and in the case of the Japanese family, if the flowers are at all stale, or even fully developed, the florets will, in some instances, be shaken down, exposing too much of the centre or eye, which must be filled up. This is best done by taking the bloom out of the cup, holding it upside down, and giving it a vigorous shake. Place blooms at the height previously named; examine all again to see that no mistake has occurred in naming, and especially see that a duplicate bloom has not been accidentally placed in the stand where not required. Spread over the flowers thin sheets of tissue paper, which prevents dust accumulating, and also shades them from the sun, shelters from sharp wind and from the gaze of opponents, who are often anxious to know what they have to contend against in each class, and if they are weak in certain points they can marshal their forces, so to speak, to their advantage; therefore take all available means to keep them in the dark until it is too late for them to make any alterations in their stands. When all the flowers are completed and covered it is time to ascertain the various positions the stands are to occupy, so that when staging them no confusion need take place, as is often the case where the classes are not accurately defined on the tables. All good secretaries make this an essential point of observance. Some exhibitors are very fond of exposing their flowers as soon as they reach the show, staging them at once, thereby exposing themselves too much to the chances of defeat. Many exhibitors attempt to fill too many classes; it is far better to make fewer very strong. Always pay especial attention to the leading classes, making them as strong as possible, even if it can be seen that you are almost sure to win by points; but remember that there is safety in numbers. When the time arrives for staging commence with the small classes first, and always be punctual, remembering that if exhibitors are not ready at the time, the judges are not allowed sufficient time to make their awards as carefully as they would wish in some cases, as the public object to be kept waiting longer than the stated time for opening the show. When staging the flowers be sure that the card denoting the number for each exhibit is in its proper place; when this is ignored confusion often occurs, which might be avoided by using a little forethought.—E. MOLYNEUX.

(To be continued.)

HEATING BY HOT WATER.

[Read before the Members of the Preston and Fulwood Floral and Horticultural Society, August 7th.]

(Continued from page 221.)

TEMPORARY SUPPLY PIPES.—When the water pipe which feeds the supply tank is fitted with a ball-tap considerable labour is saved in filling the pipes and keeping them supplied with water. By this method any quantity of water can be drawn from the pipes without fear of the boiler suffering by being short of water at any time. The pipe from the supply should be fitted to the lowest point of the boiler or into the return pipe, which is preferable. Where two boilers are working side by side, conjointly or separately as occasion may demand, the supply pipe should be placed in the return beyond the main valves where the two returns unite into one. By so doing the one pipe will supply one or both boilers according to whether the valves are opened or closed. In large arrangements five or six hours and often more are taken up in filling the whole of the pipes and boilers by means of one ordinary supply pipe. One is sufficient in the majority of schemes, but not in such large ones as have been referred to. In such instances temporary supply pipes should be provided, so that they can be used when it is necessary to fill the pipes as quickly as possible. One or more of these may be provided, say one in the centre and the other at the extreme end of the pipes. Two-inch pipes should be employed, but they must be carried as high as the supply tank. These pipes should be under cover, then when they are not in

use, if fitted with a cap, they can be closed by screwing on the cap provided for the purpose. If the mains are laid side by side in the trenches these temporary pipes can be arranged on the return, but if one above the other they must be on the flow for the sake of convenience. Smaller pipes than those named may be used, but the size given will allow of an ordinary garden hose being attached to the nearest tap and placed in the end of the pipe. Considerable care is necessary, however, with these temporary feeders when fitted to the flow pipe. It is a very general plan in gardens where a large number of houses have to be heated to start the fire after the boiler and the pipes on the lowest level are full of water. All is safe until circulation has taken place round the houses nearest the boiler, but when the warm water makes its way to those on a higher level the second supply must be stopped, or the pipes somewhere on the mains between the supply and where the pipes are warm will certainly give way. This is due to a volume of air being driven by the cold water towards the boiler (if the pipes decline in that direction) where there are no means of escape for it, and the pipe gives way in consequence. When the supply is stopped, the warm water being forced up by the fire at the boiler drives the air, which is lighter, before it until it makes its escape at the first air tube provided for it. The third and fourth supplies may continue to feed the pipes until the water has been circulated in the houses near where the second was arranged, but they in turn must be stopped to insure safety. By this principle when houses are on different levels they can be heated as quickly, or nearly, as they are filled with water after a good fire has been secured.

BOILERS.—In considering the value of boilers of various makes it would be difficult to determine which are the best for heating horticultural structures or public buildings. It is not my intention to single out any one in particular, because local circumstances, the level of the ground, drainage of the stokehole, and the kind of fuel most readily obtained in the neighbourhood, must and should be thought about before any decision is arrived at. It is said that cast boilers are better than wrought iron ones, welded better than rivetted, horizontal tubulars better than vertical ones. The claim for the first is because they are less liable to incrustation from the use of water impregnated with lime than those made of wrought iron. This is perfectly true, but the cast boiler is more liable to break through expansion and contraction of its parts, especially if made in sections, than is

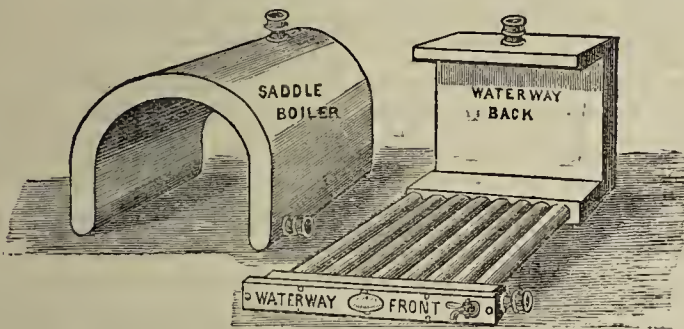
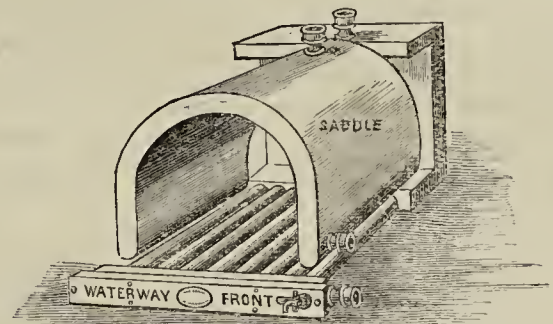


Fig. 32

the case with those made of wrought iron. Welded boilers are most reliable. Two common saddles were taken out here that had done duty for twenty years. They were not of large size, but this length of time speaks for the durability of those under notice. I do not think, however, that very large boilers can be so effectually welded as smaller ones, especially if they are complicated in their arrangements. I have never seen rivetted boilers that have been in use the period of time stated above, but if rivetted boilers were not durable and reliable they would not be so largely made for steam purposes. I have two large rivetted boilers capable of heating 20,000 feet of 4-inch piping between them that have been in constant work for nearly eleven years, and from all appearance they are as good as ever. Horizontal tubulars are claimed to be better than vertical ones, because more direct heating surface is brought in contact with the fire.

Boilers, although there are many makes, may really be classed under six heads—namely, the common saddle, improved saddles, coils, upright tubulars, horizontal tubulars, and those of conical shape. The common saddle is still a good boiler, but must give place to the improvements that have been effected. Fig. 32 shows the ordinary saddle boiler, and by its side the waterway back and patent bars of Messrs. F. & J. Mee. Fig. 33 shows the boiler complete, with the back and bars referred to, and as

worked by this firm in the late boiler contest at Liverpool in connection with the Royal Horticultural Society's great Show in Wavertree Park. This boiler gained the highest award in the contest in the class for 2000 feet of 4-inch piping, and therefore very little needs to be said in its favour. It is necessary, however, to say that the plate can be removed from the waterway bars for the purpose of cleaning out any sediment that may settle in them. This does away in a large measure with the need of sluice pipes in the ends of the boiler. The water bars are of wrought iron, and specially made for the purpose, their durability being beyond question. The ordinary cast fire bar in large boilers only lasts one season. The hollow bars I have examined after being in use for eleven years were perfectly sound, and only removed because the boiler had worn them through corrosion, caused by water falling on it through the brickwork. The back and bars can be placed to any existing boiler, and the power they add to a boiler was proved in Sefton Park at the Liverpool Horticultural Association's Show, when the bars and back were worked separately. The back can be added to any



A. BOILER.

OR DOUBLE ACTING WROUGHT IRON SADDLE BOILER.

Fig. 33.

common saddle boiler without the bars, which alone adds materially to its heating power. This boiler must be set in brickwork, and will burn any kind of fuel. Another advantage is that a very deep stokehole is not needed.

Mr. Joseph Bramham, 104, Dale Street, Liverpool, has kindly lent me a block of his saddle boiler and waterway back. Fig. 34 will show the two connected. It differs slightly from the one previously described, as will be seen from the engraving. This saddle is a special make, being wider and less in height than the common saddle, which gives a greater direct heating surface. This arrangement is good where coke is used for fuel. Fig. 35 is "Bramham's Allerton Priory," a terminal end saddle with four flues. As will be observed, very little heat can be lost by such a boiler, for directly it strikes the waterback it is turned through the two lower flues, and is compelled to pass through the other two before it reaches the chimney. If properly stoked no heat need be lost, and the boiler will practically consume the whole of the smoke. To the front will be observed the cap, which is a small boiler instead of the usual brick arch usually employed between the front and the boiler. The return pipes from this cap are connected to the large boiler on each side, while the flow pipe from it is carried into the main flow from the large boiler. Some may think there is very little economy in such an arrangement, but I can prove from experience that such is the case. I have these caps to my large boilers, and frequently

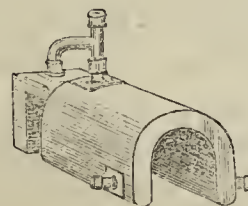


Fig. 34.

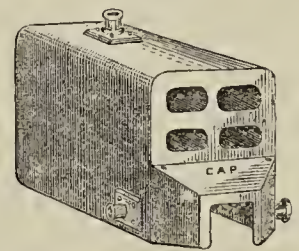


Fig. 35.

when working the flow is perfectly hot. This Allerton Priory boiler will burn any kind of fuel, and really only requires brickwork to the front and for the back flue; thus the main body of the boiler can be left bare. It can be bricked to prevent radiation or coated with some non-conducting material, as previously described for the mains. The "Gold Medal" boiler is very similar, but has only three flues—one large one, through which the heat passes after leaving the furnace, and then returns through two smaller ones to the chimney. There are several of these boilers very similar in construction—for instance, the

"Chatsworth," which has only one flue through the saddle, the flame being then returned over the top of the boiler. The "Imperial" is fed from the top, and has two lower and two higher flues. The "Climax" is another very similar boiler, and undoubtedly a very powerful one. These are all welded. The large boilers at Norris Green by Messrs. James Coombe & Sons are rivetted, and differ only from the "Allerton Priory" in having ten cast tubes passing horizontally through each of them. They are quick and powerful, and have a large amount of heating surface exposed to the direct action of the fire.—W. BARDNEY.

(To be continued.)

HOW NOT TO GROW ROSES.

MR. D. GILMOUR, JUN., has explained in your columns one method of accomplishing the above. May I suggest another?

Start early on a chilly autumn morning for the garden of some celebrated nurseryman, selecting, if possible, one whose fame rests more on his pertinacity as an advertiser than his skill as a horticulturist. On arriving at your destination, after a long and tiresome journey, you are surprised to find the gardens almost deserted, save perhaps by one "personally conducted" party disappearing in the distance. However, you happen to catch sight of an under gardener or journeymen loafing amongst the Roses. In answer to your inquiries he will inform you that the men are at dinner and "the foreman" at present engaged. While resolutely refusing to compromise himself by affording you any information as to price, &c., he puts an end to further interrogatories by disappearing in the direction of "the office."

After being kept an interminable time kicking your heels while perhaps a bitter east wind almost cuts you in two, "the foreman," whom you speedily recognise as the "personally conducting" individual, makes his appearance. After some slight conversation you will find him to be merely the salesman of "the firm," who knows as little about Roses as they know about him, his business being simply to make the customer buy, not what he wants, but just what he does not want. Previous to your visit you may have prepared a list of Roses suited, according to "the firm's" published catalogue, to your soil and situation. To each of these names the salesman will remark that the variety is out of stock, but "we can get it for you," or that he cannot recommend such a Rose, or some other excuse. He, however, suggests others which you find on inquiry to be at least double the price of those chosen by you. You naturally feel somewhat dissatisfied, but having taken so much trouble to purchase plants at this nursery you feel disinclined to return home empty-handed, and accordingly, by mutual concessions, a list of Roses is made out, though very different to your own. You mildly express a wish to choose your own trees and take them with you. The selection (?) is permitted, but the idea of removing Roses just then is ridiculed, and you are given to understand that you have made a great fool of yourself for suggesting such a thing. You are, however, assured that the plants shall be forwarded without delay directly the weather is favourable. Feeling somewhat cowed you retreat to the station to find your train gone and your day utterly wasted by the nurseryman's procrastination.

As you still probably retain faith in the firm's professions you will doubtless wait many weeks without hearing any tidings of your Roses till, as the period for planting almost expires, you summon up courage to write expressing a wish to cancel the order. This threat at once produces a reply from "the firm," who, while ignoring all your previous communications, "regret the delay in executing your order owing to the difficulty in obtaining such and such varieties," these being the very ones that the salesman professed to have in stock. "The trees will be forwarded at once, invoice for same being enclosed." Thus ends the letter. Day after day inquiry is made at the railway station, but nothing is known of your Roses, till late on Saturday night you are informed that the package has arrived. As it is then impossible to have out a cart they must remain exposed to all the vicissitudes of weather and temperature till the following Monday. "The firm" have carefully arranged that the wretched plants should have been travelling for the best part of a week. You had given directions that they should be sent by a particular line of railway because it is the quickest and cheapest; "the firm," on the contrary, elect to send your goods by that line which is both the slowest and the most expensive. *Voilà tout.*

When at last the Roses reach your house and are unpacked, you find them highly interesting from an entomological point of view, being, in fact, a perfect cosmos of insect pests; indeed, so infested are the plants that they will require months of quarantine and hard work before they are approximately clean. Again, should any of their roots shine with a metallic lustre it might be well to send portions to an analytical chemist, who will probably report that they have been "pickled" in order to kill them. If after this you happen to compare the names on the labels with those in your list you will find very few tally, whilst amongst the majority you will recognise names which the salesman had tried to palm off on you during your visit to the nursery, but which you had then declined. You will also discover that all the kinds which should have been standards are dwarf, and *vice versa*.

Should you write to complain, "the firm" is profuse in its apologies, and regret its having failed to obtain the Roses you ordered, quite forgetting that these names were given as of plants in stock in their elaborate catalogue. They, however, lay stress on the fact of having added one or two (worthless) Roses "gratis" to your order. By the

time this correspondence is concluded the trees have been placed in the ground, and it becomes a nice question of law whether they can be returned. Any customer who has had experience of the glorious uncertainty of English law in general, and British juries in particular, thinks twice before he engages in a lawsuit with a tradesman, consequently the nurseryman generally "scores," though the customer vows never to deal with that firm again.—FAIRPLAY.

[Is this a burlesque?]

RED SPIDER ON VINES.

RED spider is a pest that most people who grow Grapes have to contend against, and it may safely be said that much damage is done to Vines and much vexation caused to growers by this little insect. In many cases the pest is allowed to get a firm hold before measures are taken to cope with it, and it may often be seen swarming on the berries and making them unsightly, as well as damaging the skin of the same. When it is first noticed in a vinery no time should be lost in attacking it with a copious and forcible discharge of clean water. If there still remain some of the spiders at the time when the Grapes are ripening, sulphur should be thickly sprinkled on the pipes, a brisk fire started, and as strong a fume as possible raised. This should be done either on a dull day or in the evening, so that the house may not require ventilation for some time. When a strong fume has been raised it will generally be found that the red spider has suffered thereby.

Great attention should be paid to the thorough cleaning and scrubbing of the Vines in winter, so that as many of the eggs of the spider as possible may be destroyed. Some Vines, such as Lady Downe's and Alicante, which are, as a rule, not early forced, and are also of a very robust habit of growth, are not much troubled with spider. Muscats seem more troubled with this pest than any other kind, and this may easily be accounted for by the extra amount of fire heat which most people find necessary to ripen this variety. It is a great matter to attack the enemy as soon as perceived, and not to allow it to get a hold before attention is paid to its extirpation.—A. B. C.

TRENCHED VERSUS UNTRENCHED SOIL.

I AM afraid "A Kentish Gardener," page 135, has arrived at the conclusion that I do not intend to "crack his nut," but I can assure him that I only deferred that pleasure to a time when I had more leisure to enjoy the process. He seems to have fallen into a very common error of thinking that Marston and Somerset generally are favoured spots, but that we who practise in these parts are such fortunate individuals is yet to be proved. That part of the west of England where I am located is no more favoured than Kent; in fact I should prefer the latter, and I ought to know something about it, seeing that I spent the earliest half of my career in that pleasant and most fertile county. If "A Kentish Gardener" will do me the honour of looking up the back numbers and read what I have previously advanced on this subject, he will find that I frequently expressed the opinion that there are some soils which may be trenched with advantage, and I may now add just such described on the page quoted would be benefited by it. His soil is rather light, 2 feet thick, and resting on a gravelly subsoil. Our soil is naturally heavy and clayey, is about 18 inches thick, even less in places, and rests on an almost solid and badly drained subsoil. Yet Marston is a "favoured spot" For my part I should be delighted to change conditions, and then, no doubt, trenching would be more resorted to.

I should be sorry to be thought bigoted or dogmatic, and if I honestly thought trenching wise under all and any circumstances it would soon come out in the pages of this Journal. But it is not, and the more gardens I visit the more I am convinced that injudicious trenching has much to answer for. Each season we have tried the effect of trenching on different parts of the garden, and for various crops, but always with the same result—viz., that well-manured and well-worked, but not trenched land, is the most profitable. This season half of the Onion quarter was bastard-trenched, and the other half deeply dug only, about the same amount of manure being used in each portion. The ground being in good condition at sowing time, all the seeds alike germinated evenly, but until within six or seven weeks ago it would have been a difficult matter for a stranger to point out where the different portions commenced and ended. Now, however, the case is very different, as the Onions on untrenched ground are actually ripened ready for storing, the ground being already occupied with winter Cabbage, while those on trenched ground are still quite green, and are not nearly such a solid pretty lot of bulbs. It is always the same here, and in wet seasons especially the advantage is still more decided in favour of untrenched ground. Were we to sow Beet, Carrots, and Parsnips on trenched ground, they would either become far too large to be serviceable, or, if the season was very wet, they would refuse to grow at all, the tops turning a sickly yellow. The only, or principal reason, why trenching is efficacious on medium and light soils is that it both increases the depth, and a small portion of the subsoil mixed with it improves the staple, and the deeper it is the longer it is in becoming dry. Heavy land holds moisture only too well, and trenching further aggravates the evil, at least such is my belief. Improve the surface by all means, but let the nasty subsoil alone.

"A Kentish Gardener's" Peas on trenched ground were a great success, and those on untrenched ground a signal failure, and he naturally concludes my theory is altogether wrong. But if trenching is so efficacious in all cases, how comes it so many failed with Peas this season? During August I conversed at different places in Wilts, Somerset, Gloucestershire, and Dorsetshire, with scores of good gardeners

and the general cry was how suddenly the Peas had collapsed. It was all the same whether the ground was trenched or untrenched, or if the Peas were sown in Celery-like trenches, the short spell of tropical heat experienced in July was too much for them, and thrips completely got the upper hand. In our case several of the rows had been specially prepared for withstanding hot weather, but these broke down as quickly as any, and it was only the most robust sorts that yielded a few pickings. For my part I wish all our summers would be as hot as that, say, of 1885, for I find if a few things suffer from heat and drought, many of our vegetables do better and are much more quickly established than in cooler or wet weather. Fruit trees of all sorts are considerably improved of late, and last season appears to have put quite new life in some of the more delicate varieties of Apples and Pears.

Some of the finest Strawberries seen this season were grown in the gardens at Hill House, Langport, by Mr. J. Lloyd, the practical gardener in charge, but he particularly pointed out that he did not trench the ground for the plants. The soil he has to contend with is even more clayey than ours, and trenching renders it almost unworkable for several seasons. Mr. Lloyd, like myself, believes in good surface culture, and this, with timely mulching, prevents cracking and rapid loss of moisture. When I saw the garden recently all the crops were growing strongly, and Onions and other roots on a steep declivity were equal to any I have seen elsewhere this season. There are plenty of Kentish gardens as stiff and unworkable as any we have in Somerset, and by good surface culture these are made to produce excellent crops of fruits and vegetables, whereas if trenching were resorted to much more labour must be expended in getting the surface into a workable condition without any marked compensating results. I maintain that the value of trenching has been much overrated, and that plenty of instances are annually happening where harm instead of good has resulted.

Having cracked "A Kentish Gardener's" nut perhaps he will return the compliment. Some time ago I asked in these pages for an explanation of the fact that some of the finest Lettuces ever seen as well as heavy crops of Kidney Beans can be grown on the ridges between the Celery trenches, and that too in the hottest weather. They get no manure; the principal portion of the soil they have to root in is undug, while watering them is out of the question. Yet they thrive, not unfrequently better than those in presumably more favourable quarters, or even on trenched ground. Will "A Kentish Gardener" account for this?—W. IGGULDEN.



NEW ZEALAND EDIBLE FUNGUS.—Mr. Thomas Veasey asks if any of our readers can name any book in which he could find a chemical analysis of this fungus, or where he could procure a specimen in this country.

— PLUMS AT THE CRYSTAL PALACE SHOW.—"W. W. W." writes:—"It is stated in the report of the above Show that the third prize for four varieties was adjudged to Mr. Ward for Pond's Seedling, Fonthill, Goliath, and Victoria. How is this? All the catalogues give the first two as synonymous." The catalogues are right in describing Pond's Seedling and Fonthill as synonymous.

— MANY will regret to hear of the death of MR. JOHN COX, late gardener at Redleaf, which occurred on the 30th of August, age seventy-one years. Mr. Cox resigned his situation at Redleaf through failing health, and was in consideration of his long service and high character allowed an annuity, upon which he retired to the Isle of Wight. The disease from which he suffered was softening of the brain, which became more intensified shortly before his death, when he had an apoplectic seizure, which terminated fatally. He is buried in Brading Churchyard. Mr. Cox was well known to the readers of this Journal, to which he was a contributor, especially on the management of fruit trees, for many years.

— MR. WM. W. BROWN of Cotenola House, Evesham, has sent us a remarkable cluster of the DAMASCENE PLUM. It resembled a bunch of Grapes, so closely were the fruits packed together, of which there were eighty on a length of stem of a shade over 5 inches.

— A CORRESPONDENT writes:—"As an indoor decorative plant BEGONIA METALLICA must be described as invaluable, for an excellent specimen of it can now be seen in the heart of the Midland Black Country standing in the fireplace of a small house in the midst of Darlaston. Mr. Wilkes has had the plant in his room for several weeks in a darkish place, and it could not be in better health if grown under glass."

— ROYAL HORTICULTURAL SOCIETY.—At a meeting of the Fruit and Vegetable Committee, held at Obiswick on September 2nd, present, John E. Lane, Esq., in the chair; Messrs. Woodbridge, Norman, Smith, Saltmarsh, Paul, Burnett, Silverlock, and Miles, the collection of Potatoes growing in the Garden was examined, and on being cooked first-class certificates were awarded to the following varieties:—*Fyvie Flower* (R. Farquhar, Aberdeen).—White kidney, rough skin, yellow flesh, medium size; heavy cropper. *Seedling A1* (A. Harris, Woburn, Beds).—Large white kidney, smooth skin, white flesh; good cropper. *Bouncer* (T. Laxton, Bedford).—White round, smooth skin, white flesh, very handsome; moderate cropper. *Maggie* (J. Murdoch, Rothiemay, N.B.).—Large white round, smooth skin, white flesh, deep eye; very heavy cropper.

— A CORRESPONDENT asks "What is the experience of growers of the WILSON JUNIOR BLACKBERRY? I got some plants when sent out, and I fail to see that it grows so freely and is as fruitful as the Lawton, and this does not give the same amount of fruit as the Parsley-leaved I have against the wall of a building. Wilson Jun. is certainly a fine large fruit, but the plants were so small when received that they take a long time to get strength enough for affording a profitable crop; even the blackbirds seem tired of waiting. Surely this like many others is not taking the place it ought through over-propagation. Miserable bits that are scarcely the weight of the price in silver given for them is not the way to bring anything out."

— OUR correspondent further states that "BLACKBERRIES AND APPLES are excellent for mixing in tarts. The Blackberries impart a sweetness or relish similar to that of a handful of Raspberries to a quart of Red Currants. We consider either or both good, separately or together, and everyone can have them, as they will grow anywhere and might supplant the Nettles and rubbish only too common about homesteads."

— "FOREMAN" wonders "Why MONTBRETIA CROCOSMEFLORA is not more generally grown. It is very useful for decorative purposes, grown in 7-inch pots, the foliage being like a small Gladiolus. The stems are 2 feet and more high, with long one-sided spikes of orange-red Gladiolus-like flowers, much larger than M. Pottsi. After two years' trial it has proved very valuable for late summer display." This plant is comparatively new, and will no doubt become popular when its merits as a late summer and autumn decorative plant are more fully known.

— THE same correspondent mentions, "Gathering NEW YORK VIOLETS by the gallon from plants planted in April a foot apart every way, mulched, and well watered during the hot weather. The fragrance is much appreciated now we have the house full of company for shooting, especially by the ladies. I consider New York the best for late summer and autumn flowering, with De Parme to follow. Count Brazzia, White Neapolitan, is also very fine and much liked."

— "A. M." finding MORELLO CHERRIES did not succeed on a north aspect, supplanted them with Currants. He describes "Lee's Prolific Black Currant as excellent, and hangs well. Carters' Champion is very similar, if anything larger and better, and not liable to shrivel, but Baldwin's is far the best. Houghton Castle Red is quite distinct from Victoria, but both are good, and they hang until the leaves fall if the birds are kept off with nets. I find it a better plan than matting bushes in the open. La Versaillaise is a very large red. Of whites, Transparent is large and showy, but White La Versaillaise is very large. Those that like Red Currant and Rasp tart should grow October Red Raspberry, cutting the canes down to the ground in spring, and netting the row as soon as the fruit turns red, or the birds will have the harvest."

— A RETIRED tradesman, who has his villa gay with CLEMATISES, describes C. Henryi as a charming white, having large flowers of great substance; in blues he finds none equalling Jackmanni. Trumpet Honey-suckles give a charm to the windows they twine round, the Clematisses hanging in festoons over the door.

— THE same amateur points to APPLES OF HIS OWN GRAFTING on the Paradise in rows 3 feet apart, and 18 inches asunder, in the three summers' growth from the graft laden with fruit—Lord Suffield, Lord Grosvenor, Stirling Castle, Hawthornden, Ecklinville Seedling, Winter Hawthornden, also Pears on the Quince of St. Swithin, Beacon, Fertility, Williams' Bon Chrétien, Louise Bonne of Jersey, Doyenné du Comice. Durondeau, and Josephine de Malines, averaging a dozen fruits each, and is quite proud of them, and well he may be, for they are very good.

— A CORRESPONDENT who has visited SWANMORE PARK writes how much pleased he was with the collection of Chrysanthemums growing there in the manner which Mr. Molyneux has so clearly detailed in the Journal. Our correspondent was informed that the plants were not quite so tall this year as usual. Still, they are tall enough to indicate by their vigorous appearance that good blooms may be expected from them by-and-by. The buds were fast being "taken," and several of the earliest were swelling to a good size, while some of the plants had not shown their flower buds. By "taking" the buds at different times a longer season of blooms can be depended upon. The stems of the plants presented a deep brown colour, denoting a thorough ripening, which Mr. Molyneux considers most essential for the production of high-class blooms.

— OUR correspondent expresses himself as equally pleased with the way in which several of the FLOWER BEDS are filled in the same garden. Two or three that attracted particular attention were planted in the following manner, and may be suggestive to others:—One bed, oblong in form, was planted with *Lobelia cardinalis* in three rows 1 foot apart, the surface of the bed being carpeted with *Antennaria tomentosa*. An edging of the blue *Lobelia* of the Heckfield type completed the planting, and as the scarlet *Lobelia* had grown very strong, producing thick stems and spikes of blooms 2 feet long, the effect of the dark-coloured foliage and brilliant flowers with the silvery carpet of *Antennaria* was very striking.

— ANOTHER bed was planted with "BLUE MARGUERITES" (*Agatheæ cœlestis*) as a groundwork, dotted here and there with single-stemmed plants of *Abutilon Thompsoni*, which had developed its finely marbled foliage to perfection; amongst these were freely planted *Gladiolus Brenchleyensis*, bearing good spikes of bloom. The edging was composed of *Antennaria tomentosa* intermixed with a row of dwarf plants of *Iresine Lindenii*. The effect of this bed was most pleasing, the colours being balanced evenly.

— OTHER beds were planted with TUBEROUS BEGONIAS in various forms and colours, the ground carpeted with *Veronica repens*, which prevents the flowers being splashed with the soil from heavy rains, retains the moisture for the Begonia roots, and forms an excellent setting whereon the various colours of the flowers are displayed to advantage. Many of the Begonias were seedlings of this year. Evidently the climate and cultivation suits them admirably, but there must be something in culture as well, and Mr. Molyneux could impart information that would be of service to many readers by detailing his practice in the growth of these deservedly favourite plants.

— ANOTHER fact worthy of record is the very fine CROPS OF APPLES on bush trees at Swanmore, the varieties including such as Warner's King, Mère de Ménage, Ecklinville Seedling, Nelson's Glory, King of the Pippins, Cox's Orange Pippin, the only failure being, strangely enough, Keswick Codlin. These are not pigmy trees, but are large, and have been rendered fruitful by the thin disposal of the branches and root-pruning to check exuberant growth.

— WE take the following paragraph from a "Society" paper as an item of interest to the Chrysanthemum fraternity:—"His Royal Highness the Prince of Wales has attracted the favourable notice of the Mikado, and is to receive from him the IMPERIAL ORDER OF THE CHRYSANTHEMUM, which is the most exalted distinction the ruler of Japan can bestow, and which decks the breasts of only a few Royal personages and Prince Bismarck. Such an expression of the Mikado's approbation must be very sweet to the Heir Apparent. But what is the Mikado expecting in return?"

— "SAXORING" writes, in reply to a Lincolnshire correspondent:—"I, too, have grown CARTERS' CHAMPION BLACK CURRANTS three years. I found a very fine strain here. Each year these have been larger and borne heavier crops on them than on two bushes of Carters' I got from that firm. Black Currants here and almost everywhere have been a heavy crop, mine extra large, but far removed from 'Grapes'"

— A NEW VARIEGATED POINSETTIA PULCHERRIMA.—Some plants of a very distinct and bright variegated form of this plant can now be seen in Mr. Hans Niemand's Royal Nurseries, Birmingham. It is the result of a sport in the form of a small variegated shoot on an ordinary Poinsettia pulcherrima, and Mr. Spinks has succeeded in perpetuating it, and has now about a dozen strong plants, some of which he

contemplates exhibiting in London this winter. It has not yet flowered, but the plants will do so during the early part of the coming winter.

— TUBEROUS BEGONIAS OUT OF DOORS.—A correspondent writes:—"In the flower garden in front of Mr. E. Cooling's house in his Mile Ash Nurseries, Derby, these plants have been in great beauty in a small bed this summer, eclipsing many of the Pelargonium and other beds in colour and effect. Amongst them is a seedling of an intense scarlet colour, erect compact habit, and a very profuse bloomer. If we are to have bedding-out Begonias, here is the type of plant we should look for, for it is a striking object amongst the others."

— MR. JOSEPH MALLENDER sends the following SUMMARY OF METEOROLOGICAL OBSERVATIONS FOR AUGUST AT HODSOCK PRIORY, NOTTS:—Mean temperature of month, 60.4°. Maximum on the 30th, 79.8°; minimum on the 5th, 41.2°. Maximum in the sun on the 7th, 129.0°; minimum on the grass on the 3rd, 29.2°. Mean temperature of air at 9 A.M., 60.0°. Mean temperature of soil 1 foot deep, 60.5°. Below 32° on the grass, one night. Total duration of sunshine in the month, 141 hours, or 31 per cent. of possible duration. We had three sunless days. Total rainfall, 1.70 inch. Maximum fall in twenty-four hours on the 9th, 0.38 inch. Rain fell on twelve days. Average velocity of wind seven miles per hour. Velocity exceeded 400 miles on one day; fell short of 100 on nine days. Approximate averages for August—Mean temperature 60.2°. Rainfall 2.50 inch. Sunshine 152 hours. A month of average temperature, deficient sunshine and low rainfall, and no thunderstorms.

— THE NEW AGRICULTURAL HALL AT WEST KENSINGTON, which is progressing, appears to be a building of imposing dimensions. The main hall is 440 feet long by 250 feet wide, roofed in three spans, of which the centre one is 170 feet wide and 100 feet high to the soffit of the crown of the main arched ribs. These are placed 34 feet apart and are 7 feet deep. The main roofing is carried by main and intermediate purlins, and is glazed on Mr. T. W. Helliwell's principle, who is also executing the work. The superficial area of the ground floor is over 100,000 square feet, and from these figures it will be readily realised that the new hall is one of great extent, and fully capable of accommodating the exhibitions and "shows of every description" for which it is intended.

— "UTILITARIAN" informs us "That he finds much difference between MANURE FROM A FARMYARD which is exposed to all weather and that from a covered yard which gets no rain whatever, but is taken direct to the land. There is also a difference between that taken from the farmyard and that piled in a heap to rot and lose in manurial value. The covered yard manure is twice as good as the open yard, and the open yard twice as good as the dung heap manure with its steaming of ammonia into the air for weeks, and having its virtue washing out and carried off the land by the ditches for month after month. The ditch sides are rank now with Nettles, Hemlock, and other gross weeds, and the hedges are wide and high enough, a great waste going on while the land is poor, needing, as Liebig and Lawes have pointed out, all the nitrogenous matter that is allowed to escape in the air or run away by the ditches."

— A LONDON paper (the *Echo*) having advocated a more extended cultivation of VEGETABLES FOR MARKET, has inserted the following reply from a correspondent:—"In your article on the above the writer says, 'Pass to vegetables, London is so poorly supplied with them.' At what period is the writer referring to? Surely not this last summer. Green Peas when in season in many cases do not pay even their expenses of picking and carriage, let alone growing them. At no time did they make a fair price. Cabbage for a long time did not realise more than from 1s. to 2s. 6d. per tally of sixty. Scarlet Beans week after week have only made from 6d. to 1s. 3d. per sieve of 40 lbs. Bags of 90 lbs. to 112 lbs. of Beans have been sold at 6d. and 3d.; 1s. to 1s. 6d. has been a good price. Vegetable Marrows have been so plentiful that it has been very difficult to sell them at any one price, 1s. to 2s. per tally of sixty, and those very large. Good Turnips, grown for domestic use, have been sold for cows at 5s. per ton, when the rail expenses have been 6s. 8d. and 7s. 6d. per ton. Hundreds of tons of Potatoes have been, and are now being, sold to cowkeepers at just what they choose to give, and in many cases they have been asked to oblige by taking them away. The best that can be had are only making from 3s. 6d. to 4s. 3d. per cwt. Gooseberries and Plums, in many places have not paid for picking. The only article that does not seem over-plentiful are really good Apples. In every other article of general consumption there is enough and to spare."

The writer of the article must take his opinion from what some green-grocer tells him, in the neighbourhood of Regent Street or Fleet Street, who has to give a month's or three months' credit, and send every article home after sending for the orders—even if it is a pennyworth of water-cress—and pay £100 a year rent and taxes. How he gets it he can only tell; but his price must not be taken as the general price of vegetables in London."

— REVERTING to the subject our contemporary states:—"As a source of employment for our people, 10 acres of market garden gives more employment, and feeds more persons by its cultivation, than 100 acres of ordinary tillage, or 1000 acres of grazing ground. It would, therefore, appear to be the duty of the Government to do all in its power to encourage an art which aims successfully at getting out of the land by the expenditure of human labour the greatest possible amount of food. For twenty miles around London enormous amounts of fruit and vegetables are raised; these are subject to a comparatively very heavy expense for labour, not only while attending the growing crop, but even more when preparing it for market. In many instances the labours of a year spent, say, in growing Strawberries or other soft fruit, are worse than thrown away by the crop, when it comes to market, being met by a similar crop from abroad. In a single train this year 78 tons of Strawberries from France reached the London market, and so reduced prices that the money produced by the English fruit did not pay even the expense of picking. Letters on this subject show the very great uncertainty which, under our present system, attends the growth of fruit and vegetables for the London market, caused by the competition of foreigners, whose cost of raising them is very small when compared to the rent, tithe, rates, and taxes our people are obliged to pay. Every day the competition increases, and as railways grow and new steam routes are opened, unless some check be placed upon the free importation of fruits and vegetables which can be grown here, the extinction of market gardens around London is not far off in the future."

— FOR ourselves we can only repeat our conviction that the advice which is often tendered to agriculturists to convert their farms into gardens, and so win prosperity, is dictated by motives of philanthropy rather than founded on practical experience. If the most expert of market gardeners do not find their employment lucrative—men who are acquainted with the best methods of culture and kinds of vegetables that "take" in the market, and, moreover, are cognisant of the best means of disposing of their produce—how is it possible that the inexperienced can hope to succeed? A few favourably situated may make "lucky hits," but the great majority, instead of reaping the reward they hope for, will be far more likely to incur loss, it may be serious loss, as not a few have done, and bitter disappointment. Fields embracing many acres of vegetables are now growing that will never be sold at a profit to the cultivators, and tons of produce will rot on the ground.

— HARD AND EASY NAMES. — The "American Gardener's Monthly" says:—"A florist who is a German does not think the English names of plants any easier than Latin ones, and even the English names used in florists' work worry him considerably. He thinks Dutch names might be adopted with great advantage by those who think easy names a great desideratum. For instance, he thinks the common phrase, 'Florists' Supplies,' a terrible word for anyone to pronounce, and he would substitute for this, *Gartenwerkzeugfabrik*. While the subject of short and easy names is up, this simple word may be worth considering."

— FROM the same paper we cite the following on ROSES IN EGYPT—"B." writes: "I enclose a slip that I have just enjoyed from a very readable ladies' article on Roses—'Cleopatra, at one of her receptions to Marc Antony, caused Roses to be massed on the floor of the hall to a depth of 18 inches. It was customary at great outdoor festivals to float thousands of Roses on the placid lakes, and to wind garlands of choicest blossoms around the trunks of trees. In great and distinct varieties Roses abound everywhere; even within the polar circle a variety is found which blooms in the midst of snow and ice, and sledges of the Esquimaux, as well as their reindeer and sealskins, are often decorated with large double Roses. All along the coast of this country indigenous Roses adorn the marshes and fields; these differ in point of colour and in the number of petals, but are alike in odour and general appearance, the five-petal pink Rose being the most common.' I find no fault with the lady's article; it is what any graduate of a modern college might have written. But it reminds me of doubts I have had in my classical readings whether the Egyptians ever grew Roses at all. I cannot now recall the passages

but I am sure there are some in the ancient writings that imply that they imported their Rose flowers, as our country towns now get them from the large cities. The Egyptian climate now is unfavourable to Rose culture, and I fancy it must have been more so in the past. Again, we are finding that our translations are not always correct. It is said that Rose should have often been translated 'Reed,' and perhaps the ancient Roses of the Egyptians were not Roses as we have them to-day. My desire, however, is to suggest that if they had real Roses, and imported, but did not grow the flowers, their knowledge of the art of transporting, cut flowers must have been great for that early time." The Editor of the 'G. M.' never heard of such a suggestion before, and leaves it to those versed in the niceties of early Latin or Greek literature to reply, so do we

GROWING FRUIT FOR MARKET—APPLES ON WALLS.

THE kindly recognition of our genial friend, "A Thinker," induces me to write explaining that the wall on which the Apples are grown is a boundary one, 6 feet 6 inches high, without a projecting coping, and was formerly covered with Ivy. The Ivy was removed, and the wall utilised for the larger and showier kinds of Apples on the free or Crab stock. The trees are fan-trained, and commenced bearing the second year from planting. The fruit is much larger, and very much higher coloured than the same sorts grown on standards, so much so that they would scarcely be taken for the same varieties. The wall Apples are "beauties" at dessert, and fetch a "fancy" price at the fruiterers. These are considerations of importance. Mr. Gladstone Apple from a wall is a very different looking fruit to the best from bush or standard; Gipsy King is vermillion itself compared with the brown dirty wash of fruit in the open; and The Queen is truly regal with the shelter of the wall. The fruiterers like them for their shops; they must "dress," and the better it is done the greater the attraction. The "sensational" fruit sells in and out of the shops, many persons being willing to pay for what is extra good. It pays to grow "toppers"—even Apples must have a "topping" appearance, or they will not realise the "top" prices.

As to the wall being more profitably occupied I very much question it, for as Lord Egerton of Tatton stated the other day at Chester, in speaking on agriculture, "that in our small island, competing as we did with every nation of the globe, the only way in which we could exist was by producing better things than other countries, and so making other countries of the world as far as possible come to us for that which we could grow," and that we can grow Apples equal in size, quality, and appearance with any that are grown under the sun this low wall has given abundant testimony. To excel is only a question of means, and in what country are they more abundant and so little utilised as in England? Excellency is also only a question of degree—standard fruit for the masses, bush, pyramid, and espalier fruit for the fastidious, wall and glass-grown fruit for connoisseurs, who have as much right to have their tastes catered for as anybody else. Surely your able correspondent is not ambitious of "catching a Tartar" twice. I considered I had done something to be proud of in rooting up the Ivy and substituting Apples; but if he prefers Ivy I have no objection. There is no accounting for tastes.

Besides the Apple wall I have 300 yards of south wall for the tenderest and choicest fruits, the same extent of east wall for Plums and Cherries, the corresponding extent of west wall for Pears, and 300 yards of north wall for Morello and Duke Cherries, with culinary Plums, which bear heavily, especially those your correspondent mentions, the Plums having displaced Pears, which last I find verify the statement of Mr. Witherspoon in the Journal some time back that Pears in the best varieties are as tender as Peach trees in their blossom and young growths, and to have fruit equalling in size, appearance, and quality that of the Channel Isles and France we must give them the best aspects, or glass if we can "raise the wind." This receives confirmation from the lucid and practical article by Mr. Pettigrew, very appropriately honoured last week as leader. With 1200 yards of high-coped wall, 100 yards of low wall is surely not too much to devote to the larger and showier kinds of Apples. Anyway they pay better than the Ivy, and utility is by most thinkers considered before ornament.

As to the Plums, Mr. Thinker will perhaps find the selections more to his taste when he sees the next list. It may have escaped his notice that I do not like the dessert Plums so well as the culinary; but I gave the best according to my experience, and no one can be more desirous of having better and more profitable than—UTILITARIAN.

VARIEGATED TROPÆOLUM.

REFERRING to the variegated *Tropæolum* which Mr. Eastwood says be brought to Aberaman Park, your correspondent asks if I can mention where any other distinct kind can be procured other than the one at Aberaman. If Mr. Eastwood will refer to the *Journal of Horticulture*, February 4th, 1886, page 100, he will find his question answered. Mr. Eastwood also says, grown outdoors it would no doubt be much improved in colour and dwarfed in growth. It is quite the reverse with me; when bedded out it grows much stronger and not so dwarf as when grown up rafters under glass. Mr. Eastwood also says he did not bring the green variety to Aberaman, but the variegated one, which was perhaps the parent plant to Mr. Mitchell's distinct form. Allow me to say I have not said or claimed the one in question to be a Mitchell distinct form; I only claim it to be raised in these gardens, and until I am convinced where the

original spout came from that Mr. Eastwood speaks about I shall maintain this claim. Mr. Eastwood's description of his form resembles mine with the exception of the general habit of the plant.—H. MITCHELL.

BROOME LEASOE, NEAR LICHFIELD.

BROOME LEASOE is a commodious and modern mansion, and is the residence of C. H. Inge, Esq. It is built of red brick, and situated on a gentle eminence, and is sheltered and protected from the blighting effects of the east winds by the beautiful woods of Fisherwick—once a well-appointed establishment of a former Lord Donegal.

Mr. Inge is an enthusiastic amateur gardener, and therefore is very fond of his garden, although it is neither very pretentious nor extensive, yet it is one of the best stocked and best managed private gardens to be seen. When I state that Mr. Inge and his lady manage the garden, with the assistance of their general factotum, who does the heavy, rough, and general work, between them, your readers will not expect anything very sensational; but I venture to say that any intelligent visitor will find something both instructive and interesting.

At the front of the residence are large beds filled with *Calceolarias*. These are grown sturdily through the winter and spring, and when planted out, arranged so as to shelter each other to some extent from the scorching rays of the sun, and for sturdiness and floriferousness they are all that could be desired. I have an idea, and eleven consecutive years' practice has strengthened the idea, that if shrubby *Calceolarias* are grown hardily and sturdily from cuttings to planting time, and are then planted so close, either to each other or to their neighbours in the flower beds, such as *Pelargoniums*, as to very nearly touch, that they are not apt to "go off" like they do when planted very thinly, or as isolated specimens, and I think the reason is because the sun's rays do not directly reach the lower part of the stem, or collar, of the plant, and also the ground is kept more uniformly moist by the natural shade afforded. Next to the *Calceolaria* beds are others filled with *Carnations*, one a rich pink in colour, much deeper than is usual. Mr. Inge thinks the deeper colour is owing to the nature of the soil, for when young plants have been planted elsewhere they have assumed a lighter shade of pink, and similar to a beautiful variety we have in these gardens.

A large bed is devoted to choice hardy *Rhododendrons* and single *Dahlias*. The latter are very good varieties, and they seed here quite freely. Last year the ground about was covered with thousands of self-sown seedlings, and probably it would have been the case this year, but the surface of the soil appears to have been more frequently disturbed. There are a few to be seen here and there that have escaped the fork and hoe, and they are now showing flower. I think it is rather unusual, is it not? In the herbaceous borders are a few old-fashioned flowers and flowering shrubs, such as *Genista præcox*, *Spiræa filipendula*, *Salvia patens*, *Bergamot*, *Plox setacea*, *Campanulas*, &c.

In the warm greenhouse or stove is a very good plant of *Allamanda Schottii* trained on the roof, and flowering most profusely. Close to it is a Tomato plant grown on the extension system—the variety is apparently Hathaway's *Excelsior*—and this has borne, and is bearing, as heavy a crop of good fruit as anyone would wish to see. I have frequently grown this variety on the extension system, and also on the single rod system, but I have always had by far the best results from the former system; but perhaps my comparative failure with the latter way is my fault, and not the fault of the system. I could not help admiring the beautiful "colour effect" produced by the rich yellow of the *Allamanda* and the cornelian red of the ripe Tomatoes. Close by are several nice plants of *Dendrobium nobile*, which have made excellent growth and are now ripening up their pseudo-bulbs. They will produce a nice lot of flowers next spring if all goes on well. Under the shade of the *Allamanda* is a magnificent specimen of the Golden Fern, *Gymnogramma chrysophylla*. Mr. Inge says it is a seedling; if so, he is to be congratulated on the possession of such a first-rate variety.

The greenhouse contains the useful occupants of such a structure, but there are several things that are not usually found now in any but botanic gardens. For example, there are several varieties of the almost perpetual flowering *Pelargonium echinatum* from the Cape. These are charming flowers, and lend themselves to such a variety of purposes. Then close by are several plants of the old *Diosma fragrans*; farther away in a sunny position are five or six *Phyllocacti* and a *Melocactus*.

In a cool unheated structure a back wall is covered in a very pleasing manner by an admixture of *Plumbago capensis* and *Genista*, the lavender blue of the *Plumbago* harmonising with the yellow *Genista* very satisfactorily. A healthy *Camellia alba plena* appears to be at home in one corner, and a *Lilium lancifolium*, 6 feet high, nearer the door, shows what a handsome plant it has been.

The kitchen garden is thoroughly well stocked with clean healthy fruit trees and an abundance of capital vegetables, every square inch being occupied with something appropriate to the position.—J. U. E.

AMATEURS.

I HAVE, as an amateur, read with greatest interest for years everything written by "D., Deal," and from no contributor to the *Journal of Horticulture* have I learned more useful lessons. On page 206 he says about the National Rose Society, "But I do most sincerely hope it will never fall into the error of distinguishing between those who employ a regular gardener and those who do not. It lays the door open to much dishonesty, which unhappily many are too ready to practise," &c. He being an old

judge at shows, I should much like him to explain clearly the above sentence; others besides myself do not quite understand it. He might find time possibly to make the subject a little clearer, and oblige an admirer of his and other readers of the *Journal*.—SAXORING.

THE "U" SYSTEM OF TRAINING FRUIT TREES.

THIS system I first had an opportunity of seeing this spring in the house of an amateur gardener. The house is devoted to Vines planted about 5 feet apart, and only trained two-thirds up the roof, the object being to have some Grapes and yet allow of sufficient light for Tomatoes being grown in the interior of the house, this being done so as to pay incidental expenses with interest on the cost of the house. Peach and Nectarine trees are on the back wall, and managed on the "U" system of training, that I will endeavour to describe. I confess that of all the systems I have seen of training Peaches and Nectarines the "U" plan is the most simple and generally applicable. It was a case of "falling in love at first sight," and I naturally asked whence the idea came. The answer was prompt—viz., from Rivers, and it is figured in the Sawbridgeworth Catalogue of Fruits.

"This system," states Mr. Rivers, "which has found such favour with Continental Peach growers, is undeniably more simple and more productive than the fan-training in use in England." This was my impression, and I long for an opportunity of practising it. There is nothing but what appears sound in the system, and though my remarks must of necessity be hypothetical, I have no hesitation in advising its adoption with as much certainty of a successful result as had they been safeguarded by a lifetime of experience. If without experience of the "U" system, I am not by any means inexperienced in the upright training of Peach trees, and the only difference consists in the "U" being confined to two branches with radiating shoots for bearing, whilst in the upright the main branches can be multiplied to any extent, and each branch of these corresponds to one of the "U" system, so that I am not badly fortified after all with experience; indeed the principle is identical, only there is a difference in applying it. In the upright of many branches we are likely to get a very unevenly balanced tree, as the depression of the two first shoots after heading to get the upright primaries causes the sap to rise most rapidly into the two uprights on opposite sides of the stem, and the others in consequence have varied degrees of vigour; but by following the "U" system we have the sap equally disposed in two uprights only, and attain to an equal vigour in both primaries. This is a point of great importance in training fruit trees, and is very indifferently afforded in the fan and Seymour mode of training by which the lower branches, being more horizontal than those filling up the centre of the trees or upper part of the wall or trellis, are much weaker, and in time get so enfeebled as to be unprofitable, very generally dying and leaving a large amount of unprofitable wall space.

The "U" system is especially recommendable for securing a speedy covering of wall or trellis space (for which reason I adopted the upright training, using trees that had been trained as fans), and keeping it filled with fruitful trees. This, I am aware, can be effected by cordons, of which I saw good examples at Caiswick a few years ago, having it pointed out to me by Mr. Barron as an admirable method of training Peaches and Nectarines, insuring a speedy covering of the wall space and a good crop of fruit, with the advantage of greater variety than can be effected by the fan, Seymour, or other mode of training. The system—i.e., cordon training, is, however, different from the "U." In the cordon the main branch is trained oblique, or at an angle of 45°, and the side growths or bearing wood trained at a corresponding angle with it, so that the tendency of the sap upward is arrested by the depression of the main branch, and upright training of the fruiting wood secures for it as free a flow of sap at the lower part of the cordon as at the upper, and in this respect the oblique cordon system possesses an advantage. In the "U" the flow of the sap is all upright, unless we follow the horizontal training of the side or fruit-bearing shoots, to which I take a decided objection, for I am convinced that of all systems of training the horizontal is the most objectionable, the best way to render any tree unfruitful and unsatisfactory, the vigour being expended in useless spray in the central or top part of the tree, and which of necessity must be cut away; indeed, we waste more of the tree's energies and the soil's nutrition in foreright and other useless sprays than is expended on fruit and fruiting growths, the remedy for which is a different method of training and complete control over the growth by limiting the rooting area.

With a fan or other description of tree covering a large extent of wall or trellis we must of necessity have a large width of border, as the roots extend outward from the wall, the borders being in most instances equal to the height of the wall; and as these borders are valuable for early vegetable crops they are cropped. With the digging the roots within a cultivable distance of the surface are mutilated and destroyed, and as a consequence the fruit trees as a rule are not satisfactory in cropping, the trees making much wood, and late growths being encouraged by the roots being at a distance from the surface.

In fig. 36 we have a wall 10 feet high, the scale being quarter-inch to 1 foot, a border, *a a*, 2 feet 6 inches deep, resting on 12 inches of drainage *b*, and a 3-inch drain *c*, placed 3 feet from the wall, and having proper fall and outlet. The border need not be more in width than one-third the height of the wall, and this kept exclusive to the fruit trees. The roots could, of course, be allowed to extend into the border beyond, and by taking out a trench, in case of the trees becoming over-luxuriant, at the outside of the fruit border, the roots being detached, the trees would be perfectly under command. This procedure I strongly recommend

to all engaged in fruit culture against walls, as it keeps the fruit tree roots under control, so that the trees can be fed by watering and mulching without interfering with the vegetable crops, and *vice versa*.

As regards the trees, we may best convey our meaning by commencing with a maiden tree. This is headed at 9 inches from the ground, or not nearer than 6 inches, it being essential that the tree have a stem of that length. This will give rise to side growths; two of the best of these are selected, and as nearly on a level as possible, and taken to the right and left of the stem respectively, with a curve upwards. All other buds are rubbed off after the two main shoots are secured. The point is to get the shoots of as near equal vigour as possible, which may be effected by depressing that taking the lead. Laterals should be pinched at the first joint, and to every succeeding one afterwards as it is made. In the autumn, after heading, we have two strong shoots, and if they do not ripen kindly, cut the roots by passing a spade down 18 inches from the stem all round. This may be done at the close of September, and in November we plant it against the wall with others 5 feet apart, the end tree, of course, 2 feet 6 inches from the end of the wall. The growths are loosely secured to the wall. In February, the weather being mild, the shoots are brought down and secured to the wall, so that we get 2 feet 6 inches between the two branches, which are taken upright, and headed so as to get a strong shoot from each, as well as a side growth above the bend; the bar across the shoots at D in the tree A shows what is intended.

The heading will give rise to several shoots. One is trained upright from each main as a leader, and three on each branch are retained as bearing shoots for next year, shown at E, and all other shoots are rubbed

growths being trained 9 inches apart, on the same principle as Peach trees, the fruit being taken on last year's wood as in Peaches, and another secured in the current to supplant that fruiting, giving fruit in the following. It is the best way of all in training Morello Cherries; in fact, I think the sooner we make a departure from our present system of growing choice fruit on spurs the better. It is clear we have all the finest fruit on the young wood.

In the case of Plums annual shoots would not answer, or only with a few kinds, but I see no reason why the "U" system of training should not be applicable to Plums, Pears, and Apples, originating the side shoots as in the case of Peaches, the current year's growth would be thoroughly solidified, the next season it would form spurs its full length except at the base. We could take a shoot from that point and train it in, and the following year another shoot from it, so that we should have a shoot of the current year to stimulate root-action, another shoot forming spurs or fruit buds, and a shoot carrying an abundance of the finest fruit, because borne by the best shoots; and it could be cut away after fruiting, and the shoot a year younger would take its place bristling with fruit buds. It is the only way to allow of the extension system being practised in limited space and to keep up a succession of young fruitful growths. In fact, instead of cutting away heaps of breastwood, it would be much better to cut away the branches that are masses of elongated barren spurs, and train shoots in their place, which in the third year at furthest will give fruit equal to any that the tree ever produced. The trees become rejuvenated by the fresh growth, no matter how old, and is a practice, whether it be effected by grafting or the encouraging of young shoots, vastly superior in results to keeping the shoots closely pinched. The way

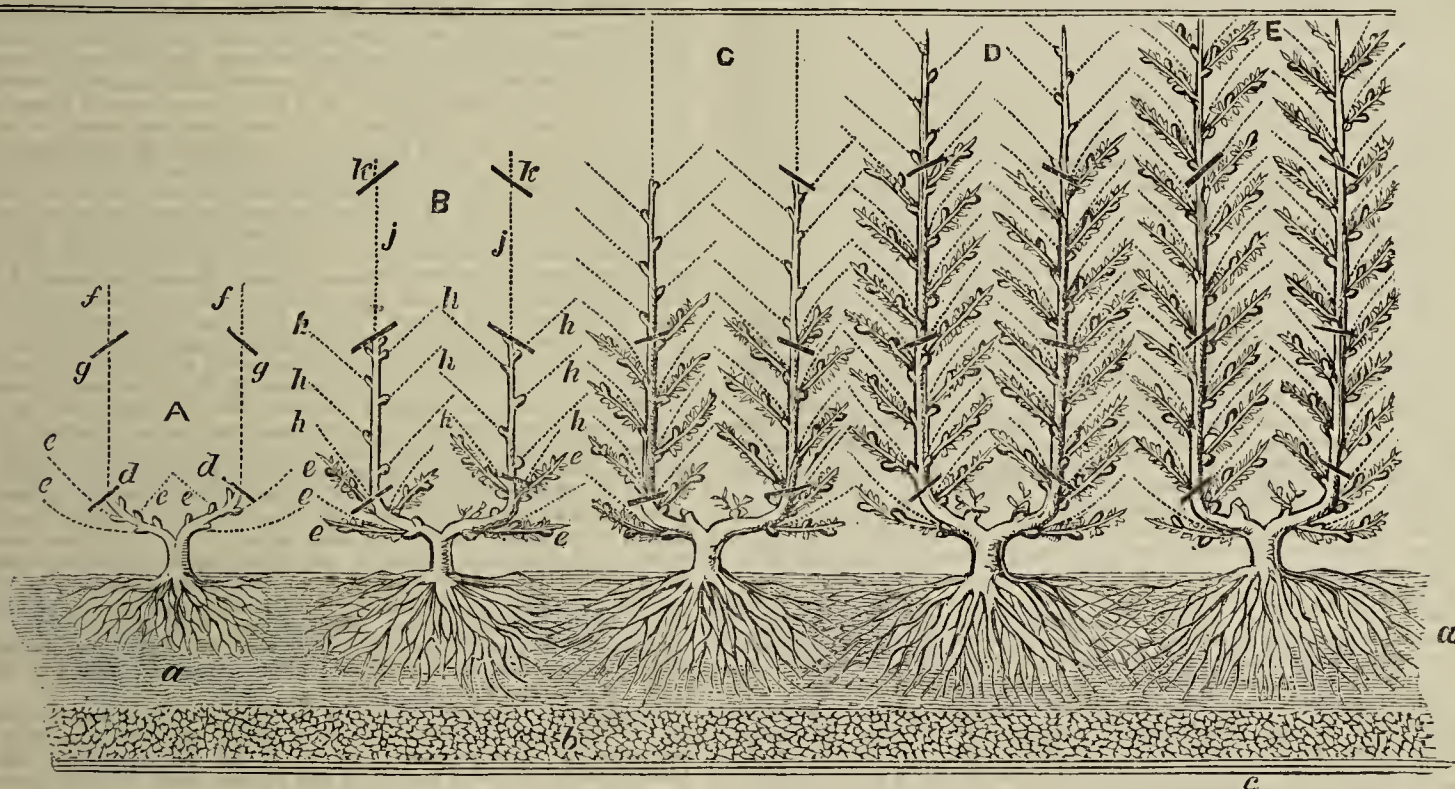


Fig. 36.

off, or they may be pinched at two leaves, and to one afterwards, which causes them to form spurs. The side shoots are stopped at 15 to 18 inches length, if they are likely to much exceed that length, and the laterals pinched at the first joint, and to one afterwards. The upright shoots F are not stopped, only the laterals are pinched, and they are cut back to the bar G, or about 3 feet from their origin.

In the following year we have the bearing shoots E of the previous year's formation, and we take a shoot from the base of each, as shown by the dotted lines, and these take the place of those now fruiting for next year's crop. On the uprights we take shoots at every foot distance, and get five on each at H. These are trained at an angle of 45° with the uprights. We also get the continuation of the uprights of the tree B—viz., J, which are cut back to the bars K in early spring. The bearing shoots E have a growth retained on a level with or above the fruit, and it is kept pinched to three, and afterwards to a joint of growth, and after the fruit is gathered these are cut out, and those shown by the dotted lines take their place.

C shows the trees advanced a stage, the routine being the same as in B, only extended; D shows the trees a year more advanced, and the complete tree is shown in E. The dotted lines in all cases show the current year's growth, and the other the bearing wood. The trees are shown 5 feet apart, the uprights 2 feet 6 inches asunder, and the shoots 12 inches apart. This is not too much space to allow of all the growths being properly exposed to light and air.

In addition to Peaches and Nectarines, to which the "U" system appears especially applicable, Morello Cherries are amenable, the side

to have fruit is to get fresh wood and keep it. It is Nature's plan, and never fails.—G. ABBEY.

A SEPTEMBER CHRYSANTHEMUM SHOW.

THE first public Exhibition of Chrysanthemums in September was held in the Westminster Aquarium on the 9th and 10th inst., under the auspices of the National Chrysanthemum Society. This was not, however, the first Chrysanthemum Show of 1886, for a very good one was held in January. We have seen blooms of Chrysanthemums during every month of the year, but what may be termed the "out of season" examples bear no comparison in intrinsic merit with the magnificent specimens of the great Chrysanthemum month—November; still varieties that flower freely, and so to say in a "natural" manner, both before and after the orthodox period, are undoubtedly valuable for decorative purposes. At the Show in question there was no lack of "naturally" early and profuse bloomers, which are suitable alike for border and pot culture; but there were stands of blooms of large-flowering varieties for which prizes were awarded that do not come under that category, for they were from early buds of naturally later-flowering sorts, and the great majority of the blooms consequently inferior examples of the same varieties as seen fully developed at a more seasonable time. We are not suggesting that the Judges erred in their awards in respect to these blooms, they had no option but to grant them; nevertheless, and this is the point and gist of the matter, if the vast majority of gardeners and Chrysanthemum-loving amateurs who cannot visit early shows, simply order those varieties that are named as being arranged in the winning stands, under the impression that the plants will bloom as freely in September as

Madame Desgrange, G. Wermig, and the summer Pompons do, they will be greatly mistaken and probably disappointed. It is a question how far it will answer even from a "trade" point of view to encourage what may be termed these accidental precocities, which, viewed from a florist's or even decorator's standard of excellence, are wanting in essential qualities that can alone render them acceptable—namely, perfect blooms in one case, and a reliable free-flowering character in the other. This is a practical aspect of the question that should not be overlooked in a reference to September shows of the popular flower that it is sought to make more popular still.

The Exhibition under notice has shown that there are very few large early-flowering Chrysanthemums that can be properly placed in comparison with Madame Desgrange and G. Wermig. If these had been left out there would have been little left to notice beyond the "pretty Pompons." Still there were a few large-flowering varieties more or less promising. The two named, especially the former, were splendidly represented, and the Show was worth holding if only for letting the public see what can be done with them by disbudbing and high culture. Instead of "ragged clusters," fine full blooms, 5 inches in diameter, predominated. Small early-flowering varieties were excellently represented. It must be conceded, however, that the effect of the Chrysanthemums was somewhat dimmed by the greater and brighter display of Dahlias, Zinnias, Gladioli, Gaillardias, and other early autumn flowers that occupied the greater extent of the tables.

The best large-flowering varieties of the Japanese type, apart from the two above named, were M. Pynaert Van Geert, bronzy orange, in Mr. Davis's group, and Martha Harding in Mr. Stevens'. This is a larger flower and a little darker than the one just named, with long twisted florets. Both these varieties appeared quite "in season" and worthy associates of Madame Desgrange and its yellow sport. William Holmes required another week for expansion, and gave promise of fine blooms, while the colour exceeded in richness, bright crimson, all others in the Show. Madame Lacroix can evidently be made to flower in September very well; but what is wanted is a "crimson Desgrange." Alice Butcher is the most distinct and bright of the summer Pompons. It is a sport from Lyon and almost the colour of a dark French Marigold. It was effectively shown by Mr. Davis, as was Blushing Bride, a charming companion plant with silvery lilac symmetrical blooms. Other good varieties are named in the winning collections. When towards the close of the summer both the hardy-border and bedding plants begin to lose their beauty, early Chrysanthemums commence to bloom freely, and they make the garden gay and provide abundance of flowers for cutting. Instances of their effectiveness may be observed at the present time in Hyde Park, where several large beds are planted with such varieties as summer Jardin des Plantes, Madame Desgrange, and Precocité, and very striking they are.

The groups of plants at the Aquarium Show were very fine, but one or two classes had not filled well. This remark does not apply to Class 1, for a group not exceeding 60 square feet, in which there were five entrants, Mr. N. Davis, Lilford Nurseries, Camberwell, gaining a somewhat easy victory. His admirably arranged group was surprisingly good. Many plants bore excellent blooms, and there was sufficient variety of colour to give the exhibitor an effective advantage over the other groups in competition, in which there was a great preponderance of white and yellow flowers. Mr. J. Wright, gardener to the Honourable Society of the Middle Temple, London, staged a pleasing group of healthy plants, well furnished with flowers, and was awarded the second prize. Lacking in variety, but of good quality, were the plants constituting the third prize group of Mr. G. Stevens, St. John's Nursery, Putney. A class provided for a group of plants on a space not exceeding 40 square feet, nurserymen excluded, fell through from absence of entries, and there was but one in that for a collection of forty-eight plants as grown for market; the second prize being awarded to Mr. William Holmes, Frampton Park Nurseries, Hackney, London, N. This group was composed of dwarf bushy plants in 8-inch pots, but it would have been more effective had the show been a little later, for few plants were in full beauty, the majority being liberally furnished with buds. Entries were likewise scarce in Classes 4 and 5, these being provided respectively for six untrained plants of Madame Desgrange, and for six untrained plants of any varieties except the latter. In the former Mr. J. Wright was first, each of his plants bearing about half a dozen very fine blooms, dwarf but good plants from Mr. Stevens gaining him the second prize. This exhibitor was awarded first prize in the other class referred to, showing well.

CUT FLOWERS.—Competition was good in the majority of the classes for cut flowers. For a collection, any varieties, a stand from Mr. Stevens was placed first. About twenty varieties were staged, and they were arranged in threes with blooms of Madame Desgrange; G. Wermig, Mrs. Cullingford, Martha Harding, Nanum and Lyon were very fine. Mr. N. Davis took second place. His collection was a large and in every way excellent one, the varieties being numerous and arranged in bunches of from twelve to twenty flowers each in wide-mouthed bottles. Mrs. Cullingford, Blushing Bride, Mrs. Pilcher, Madame Desgrange, M. Pynaert Van Geert, and Fiberta were particularly good. This collection was unquestionably more representative than the first prize one. Mr. W. Piercey, 89, West Road, Forest Hill, was awarded the remaining prize for a smaller but good assortment. There were four entries in the class for twelve blooms of Madame Desgrange, and this provided the feature of the cut flower portion of the show in the beautiful blooms which so deservedly won the first prize for Mr. Wright. They perhaps averaged 5 inches across, and were charmingly compact, symmetrical, and pure. Mr. Stevens's second prize blooms were little inferior in size, but were less regular, nevertheless good; and a pretty stand from Mr. Sadler, gardener to C. Lambert, Esq., Leigham Court Road, Streatham, received the third award. With twelve blooms, any varieties except Madame Desgrange, there were but two competitors—namely, Messrs. Sadler and Davis, who were awarded first and second prizes respectively. Both showed good stands, the first prize one consisting of M. Astorg, L'Île des Plaisirs, Madame de Sevin (exceptionally fine), Mlle. Lacroix (good), Orphée (rich), and Isadore Ferral. Mr. Davis showed G. Wermig, Margot, Madame Pynaert Van Geert (bright), Boule d'Argent, Mlle. Lacroix, and Henderson & Son in capital condition. This exhibitor was first with twelve Pompons, three flowers of each, having a charming box of the following varieties—Lyon, Blushing Bride (very beautiful), Mrs. Cullingford, Alice Butcher, Precocité, Madame Blanchet Pertuzes, Flora

Madame Piccol, and Fiberta. The only other exhibitor was Mr. W. Holmes, whose stand of smaller flowers was adjudged the second prize. There was only one entry, strangely, of six bunches of Madame Desgrange—namely, that of Mr. Stevens; his blooms were very fine, and the first prize was awarded. In the corresponding class for any varieties except that just named there were two stands, and these were of such moderate quality that a third prize only could be given, it going to Mr. Bolas, The Gardens, Hopton Hall, Wirksworth.

GLADIOLI.—Two classes were provided for these—one for a collection of spikes, any number, the other for a stand of twelve, but there was no competition in either. In the former class Messrs. Burrell & Co., Howe House Nurseries, Cambridge, were awarded the premier prize for a superb collection of nearly 150 spikes, all very fresh, and comprising some of the finest varieties grown; while the Rev. H. H. D'Omhain, Westwell Vicarage, Ashford, received first prize for twelve spikes, which worthily upheld the reputation of the grower. Collectively the Gladioli of course made a most brilliant display.

DAHLIAS.—As an inaugural show of early Chrysanthemums could be only anticipated to be of moderate extent, the Executive wisely provided for a Dahlia section. The schedule embraced nine classes, the majority of which were well filled with some of the best growers. The leading class was for forty-eight show and fancy blooms, not less than twenty-four varieties, and there were five entries. Messrs. Keynes, Williams & Co., Salishury, were first; Mr. C. Turner of Slough second; and Mr. Boston, Manor Farm Nurseries, Carthorpe, Bedale, third. The following varieties were represented in the first-prize stand, and it will be observed that few fancy blooms were included:—Back row—Charles Wyatt, Miss Cannell, Mrs. Langtry, Thos. Hobbs (two), James O'Brien, Frederick Smith (two), James Cocker, Mrs. W. Slack, Mrs. Jefford, Royal Queen, Gaiety, a scarlet seedling, Harry Keith, and Henry Walton. Middle row—George Barnes, sport from G. Barnes, William Rawlings, Mrs. Wyndham, Mr. Spofforth, sport from Gaiety, Mrs. Stancomb, Spitfire, Imperial, J. B. Stephen, sport from Rebecca, Miss Cannell, General Gordon, Richard Dean, Flora Wyatt, and Harry Eckford. Front row—Mrs. Gladstone, Mrs. Foreman, Joseph Ashby, Thos. Goodwin, Lady Golithly, Mrs. Glasscock, Mrs. Langtry, Bessie, General Gordon, Rebecca, Harrison Weir, Rev. J. B. Camm, Seraph, Lizzie Leicester, James Vick, and Mrs. S. Hibberd. All were fresh and symmetrical blooms of good size. Many good blooms were noticeable in Mr. Turner's collections—for instance, Sir G. Wolseley, Grand Sultan, Clara, Mrs. Gladstone, and John Forbes. Mr. Boston's flowers ran these close, the stand containing some excellent flowers. There were no less than ten entries in the class for twenty-four show blooms, and Mr. C. Turner secured the first prize with an excellent stand, in which George Rawlings, Mrs. Foreman, Jas. Stephen, and Ethel Britton were conspicuously good. Messrs. Saltmarsh & Son, The Nurseries, Chelmsford, were a good second, their flowers being fresh, but somewhat small; and Messrs. Keynes, Williams & Co. were third.

A corresponding class for fancy varieties produced four entries, and here Messrs. Keynes, Williams & Co. were first with a very fine stand, splendid blooms of General Grant, George Barnes, M. Chauvière, and Rebecca, with two sports from Gaiety, being noticeable. Mr. W. Boston was second with a good stand, and Messrs. Rawlings Bros., Old Church, Romford, third, their blooms being fresh but small. There were five entries in the class for twenty-four bunches of Pompons, and several fine collections were staged; that of Messrs. J. Cheal & Son, Lowfield Nurseries, Crawley, which secured the first prize, was a splendid one, Gem, The Khedive, Isabel, Lady Blanche, Fair Helen, Nympe, Favourite, &c., being superb. Mr. C. Turner was a good second, and Messrs. J. Burrell & Co., Howe House Nurseries, Cambridge, a close third. Messrs. J. Cheal & Son repeated their victory in the corresponding class for single varieties, their stand being a most beautiful one, Mrs. Bowman, White Queen, Dorothy Fell, Mrs. Walker, Juno, and the recently certificated Mr. Kennett being very fine. Mr. Turner was second, also showing remarkably well; and Messrs. Keynes, Williams & Co. were third. There was one other entry.

Nurserymen were excluded from the four remaining classes, and in the first of these and that for twelve Show blooms there were as many as nine competitors. The premier prize fell to Mr. H. Glasscock, Rye S reet, Bishops Stortford, for a very fresh and regular stand. The varieties were:—Back row—Prince of Denmark, Earl of Ravensworth, James Stephen, and J. D. Saltmarsh. Middle row—Mrs. Dodds, J. N. Keynes, Mrs. G. Rawlings, and Mr. H. Glasscock. Front row—James Dick, Ethel Britton, W. Rawlings, and Mrs. Gladstone. Mr. C. Hockney, Greenfield House, Stokesley, was a good second; and Mr. J. West, gardener to W. Keith, Esq., Cornwalls, Brentford, third. In the class for twelve fancy blooms a fine collection from Mr. Glasscock was placed first, followed as before by Mr. Hockney, the third prize going to Mr. H. Vincent, gardener to J. Hartley, Esq., Keymer, Sussex. All showed well. There was but one entry each in the classes for twelve bunches of Pompons and twelve of single flowers respectively. In both cases first prizes were deservedly awarded, in the first case to Mr. West, and in the second to Mr. T. W. Girdlestone, Sunningdale, Berks.

MISCELLANEOUS.—Many exhibits not in competition were worthy of note. Messrs. Kelway & Son, Langport, Somerset, showed a large collection of Gladioli. Some of the spikes were past their best, having presumably done service at a previous show; nevertheless, the group was a very fine one. Messrs. Cheal & Sons staged a large collection of Apples and some boxes of Dahlias, and Messrs. Keynes, Williams & Co. a box of pretty Cactus Dahlias. Mr. R. Owen, Maidenhead, sent a collection of cut flowers, including some fine Begonias, early Chrysanthemums of the segetum and coronarium types, very fine, and double Zinnias, for which a vote of thanks was accorded. Messrs. H. Cannell & Sons, Swanley, Kent, staged a large and fine collection of cut flowers, Dahlias and double Zinnias being its chief feature. Messrs. J. Laing & Co., Forest Hill, were represented by a collection of Begonias of the high quality usually conspicuous in the firm's exhibits; and Mr. J. Blundell, The Nurseries, West Dulwich, showed a beautiful stand of Hollyhocks. Various horticultural sundries were shown by Messrs. H. G. Smyth, 21, Goldsmith Street, Drury Lane, London, W.C., and Benjamin Field, Swan Place, Old Kent Road, London. Messrs. Wood and Son, Wood Green, London, N. showed samples of their special composts and artificial manures; and Messrs. W. & J. Brakenhead of Sale had on view the cockroach and beetle trap described in our report of the Royal Horticultural Society's Show last week.

CERTIFICATES.—First-class certificates were awarded to the following :—
Dahlia Empress of India (R. H. Munday, Basingstoke).—A dark crimson Cactus variety, the upper petals dark velvety purple, with a broad pink band through the centre.

Dahlia Willie Garratt (J. Garrett, Bishops Stortford).—A seedling show flower of good shape; colour dark crimson.

Dahlia King of Purples (Keynes, Williams and Co.).—A rosy purple show variety of excellent form.

Dahlia R. T. Rawlings (Rawlings Bros.).—A bright yellow show variety, good shape.

Dahlia Mrs. Theobald (Rawlings Bros.).—Bright pink, good shape.

Gladiolus The Mikado (Burrell & Co.).—Bright vermilion with white throat, a large flower of considerable substance.

Gladiolus Cantab (Burrell & Co.).—Soft rose, a large and beautiful flower.

Gladiolus Ormonde (Kelway).—Salmon, pale throat, fine flower.

Gladiolus Duchess of Westminster (Kelway) white, striped with delicate rose.

CHRYSANTHEMUM CUPS AND TUBES.

IN the Journal of 9th inst., in your notice of the Chrysanthemum tubes sent you by Mr. E. P. Dixon of Hull, you say you "suspect it is the Molyneux tube with the Jameson spring." This, however, is an error. I have had the tubes in question without the springs in use for some years, the original ones having come from quite another source, the spring is a recent addition.

The illustration of a tube in Mr. Molyneux's article of 26th August is made from one I sent him. The tubes he has hitherto used are of much smaller diameter, and with a differently shaped flange. I shall be much obliged if you will kindly correct the misapprehension in your next issue. The cups, however, advertised by Mr. Dixon are the same as Mr. Molyneux's, except that the stem is made of larger diameter to fit my tubes.—
 R. FALCONER JAMESON.

LATE GROWTHS AND RESTING OF VINES AND FRUIT TREES.

"AFTER the crops have been gathered from Vines and fruit trees under glass a free lateral growth often occurs, and there are diverse opinions as to whether this should be encouraged or suppressed. Can you publish anything bearing on this subject?" Thus writes an inquirer, "S. B. D.," and in answer we publish the following from a gardener of great experience, and the subject appears to be not unworthy of further discussion.

Most gardeners who cultivate indoor fruits must be aware that the Peach, and, indeed, other deciduous fruit trees, begin to assume another guise when the fruit is ripe or gathered. The tree gradually loses its verdant character, the older foliage begins to show "the sere and yellow leaf," and very frequently a later growth manifests itself, arguing of course considerable powers of absorption still at work, notwithstanding an apparent general decline—a phenomenon of annual occurrence. But in the midst of all this approaching quietude in the vital forces a practical observer will see, in the turgid and bronzy foliage of the earlier developments, a desire yet to maintain its ground until some hidden process shall have been carried out. Under such circumstances many persons are puzzled to find Vines, Peaches, &c., reproducing spray at the very period when the trees are evidently approaching a rest condition. I will here offer my opinions concerning this apparent anomaly. In the first place, granted that there is and has been a strong root-action, what can become of the ascending fluids after the earlier growths of the trees are supplied otherwise than a renewed attempt at growth? Fresh twigs have started; a demand still exists for the ascending fluid, which an energetic root is ready to meet; and the question arises whether it is proper to encourage such late spray. To remove it entirely would be to force the plant into a rest condition; to leave it at random would be to divert the solar light from the principal foliage, where it is so much needed. Most good gardeners hold with removing such portions of the spray as shade the principal leaves. In order to explain this subject fairly I will just examine the following heads, which would seem to comprise the whole subject :—

Firstly, a forced rest; secondly, a natural rest; thirdly, rest as connected with the encouragement of the red spider or other insect enemies; fourthly, rest as connected with the future spring.

A FORCED REST.—This is accomplished by strictly pruning away all late growths and by shutting up an unusual amount of solar heat, sometimes over 90°. Its effect is to hurry the tree into a rest condition, and, as a consequence, to place it in a position for a somewhat earlier forcing in the ensuing year. But it is presumed that this is effected at the expense of a little power, and that retaining for a time a portion of the later growths increases the volume of new fibres in the border, as also the fund of alimentary matter in the tree. Nevertheless, it may be readily supposed that in hot climates, where the Vine is indigenous, it hurries on to immediate rest in obedience to the climate, possibly its exit being hastened by a few pelting hailstorms.

I come now to head the second,

A NATURAL REST.—Although I cannot flatter myself that I have chosen the most applicable term as to what I would explain, I must use it for the present as a provisional title. By this I mean what is generally practised by good gardeners, and what I have before alluded to—viz., a compromise between two extremes, the Vine being, as it were, either scorched and snubbed or encouraged into a state of rest. Our intelligent readers will here perceive that what I would urge is, that although we may not dictate to Nature in her best moods, we may, at any rate, in practice qualify pernicious extremes of a purely accidental character; for whoever thought of imitating a hailstorm or a burning hot sirocco in a hothouse? I therefore conclude that we do well to feed our hard-working Vines and Peaches for awhile after the fruit is gathered.

REST AS CONNECTED WITH INSECTS.—Here we have another important consideration, although of a collateral character. All practical gardeners are aware of the fact that the red spider, scale, &c., are fearfully on the alert as soon as the foliage of the Peach or Vine gets into full play, or is on the decline. This, no doubt, is owing to the character of the sap of the tree, together with the atmospheric conditions as regards heat, &c. The elaborations are, doubtless, at this period at a high pitch, and must form a rich treat to these marauders. Now, the more the plants are hurried to rest the faster these insects pursue their depredations; and herein is another reason for sustaining the trees in a healthful condition until their purposes are fully carried out. Good gardeners, therefore, at this period use the syringe very frequently, and batter well the foliage of both Vines and Peaches.

REST AS CONCERNING THE FUTURE SPRING.—Rest has the power of creating what is generally called excitability in fruit trees, and the more it is prolonged, and the more performed it is within given limits, the greater, in general, will that excitability prove. Still it must here be observed that the ideas of this rest condition were rather extravagant in years gone by. Most gardeners, some forty years since, made a practice of taking Vines out of the front sashes of their houses every winter in order to "harden them," for such was the technical phrase in those times. I have helped to get Vines out under such circumstances, having stems 4 to 5 inches in diameter. I have known about seven men employed to get out one of these old Vines, and it was really absurd to witness the mighty fuss there was over this ceremony, the poor old Vines frequently cracking and splitting at sudden bends.

Now, although rest of a somewhat decided character is requisite for forced deciduous fruit trees, there is really no necessity for subjecting them to intense frosts. A Vine which has enjoyed for months a temperature ranging from 70° to 90° will find sufficient rest at a temperature ranging from 32° to 45°, or perhaps even more. Of this there can be little doubt, so that those who possess what are called greenhouse vineries need not distress themselves about the freezing of their Vines.

I may now take a brief retrospect of the whole affair, and in doing so I shall endeavour to show to the uninformed what is good practice in these matters. In the first place a distinction must be made between borders inside houses and those outside. Of course, to have the roots saturated with moisture when the trees are gradually sinking to a rest condition is by no means desirable; therefore, if the roots be outside we must make allowance for those dashing rains which sometimes occur in August and September, and water accordingly. But as to inside roots the ease is very different; these are generally in a very dry condition at the period named, and, such being the case, a thorough soaking often becomes necessary. But let us again observe the object in view. The Peaches are gathered, the foliage is just commencing its autumn discoloration, yet, if in good health, still producing young shoots in various parts of the tree, particularly towards the grosser portions of the extremities. What should be done?

In this case a double purpose may be served; the blossom-buds at the base of the earlier foliage may be rendered more plump, and the strength of the tree may be equalised. Suffer them, therefore, to grow a week or two, say nearly three weeks; but as soon as the prouder terminal points have produced three or four eyes let them be pinched, but suffer all the weaker portions of the tree to grow to the very last, at the same time removing all mere breast spray which shades the principal wood. And as to Vines, here we shall find a similar movement. If they are healthy, and the trees have not been overtaxed, we shall have them still producing small spray, with numerous small leaves, which at once show, by their character, their inefficiency as to the production of any amount of elaborated sap; but they may be made subservient to the production of fibres in the border, and we seldom hear gardeners complain of a border too full of roots. I think it well, therefore, to suffer these late growths for awhile at the extremities of the tree, or, indeed, in any portion where their shade will not damage the chief foliage on

which the next crop depends, or create inconvenience to the plants or other matters below. But they should not be allowed this liberty long—not above three weeks; they should then be closely pinched, or, indeed, pruned away if the trees are manifestly inclining fast to a state of rest.

CALOCHORTUS (CYCLOBOTHRA) PULCHELLUS.

ALTOGETHER there are perhaps between twenty and thirty species of Calochorti known to hotanists, though probably not more than a half of these have ever been in cultivation, and at the present time, unless in specially sheltered districts, half a dozen would include all those grown. Most of them seem to require special treatment and care during winter, as it is at this season that the bulbs seem to suffer most. The want of sufficient sun heat during summer, so as to thoroughly ripen the bulbs, no doubt renders them less capable of standing our ever-changing seasons, and a choice of position will go a long way towards success. A sunny



Fig. 37.—Calochortus (Cyclobothra) pulchellus.

south border, if at disposal, will suit them better than any other, well drained, and with a good slope to the front. The soil should be light and rich, free of decaying material, such as leaf mould, &c., and the bulbs planted a good 6 inches beneath the surface. *C. pulchellus*, along with *C. albus*, a charming species with white flowers, which we have seen growing well nestling close to a south wall, belong to a group by themselves, characterised by the flowers being sub-globose, with concave petals, nodding stem, usually tall and branching, and by which they are readily distinguished from all other members of the genus. The flowers never fully open, and though less brilliant in the markings than some of their brethren, they are also less fugitive, and in consequence more useful as cut flowers. *C. pulchellus* was first introduced by Douglas about 1830 when travelling for the Horticultural Society, and originally described by Bentham about fifty years ago in the Transactions as *Cyclobothra pulchella*. *C. flava*, "Lal. Bot. Register," sub. t. 1662. *C. lutea*, "Lal. B. R." 1663. *C. harhata*, Sweet, "Flower Garden," t. 273. The characters which originally distinguished Calochortus from Cyclobothra have been found in later introductions to slide into one another in such a way that it is not considered worth while to keep them distinct, and is certainly much easier for growers. The stem is somewhat flexuous, with much-spreading branches from 1 to 2 feet in height, the bracts narrow, lanceolate, exceeding the flowers; sepals yellowish or green, shorter than the petals. The latter are bright yellow or orange, sparingly sprinkled with short stiff yellow hairs, which are also seen distinctly on the edges in the form of a fringe; flowers always drooping or nodding; flowering in early summer. Confined exclusively in their distribution to California, British Columbia, Mexico, and the Rocky Mountains.—M.

DRESSING CHRYSANTHEMUM BLOOMS.

YOUR correspondent, Mr. E. Molyneux, in giving his experience on dressing Chrysanthemum blooms, on page 224, says much has been written against dressing of the blooms. He also says undressed blooms stand no chance against dressed blooms; but may I ask why the judges at the Royal Aquarium last November gave the first prize in the class for

twelve incurved blooms to undressed examples when there were some good stands of well-dressed blooms? Why not have a class for dressed blooms and a class for undressed blooms? If you will insert this for your correspondent to see I shall esteem it a great favour.—W. M.

HORTICULTURAL SHOWS.

ROYAL CALEDONIAN SOCIETY'S SHOW.

THIS was held in the Waverley Market, Edinburgh, on the 7th and 8th inst. We thought the amount of produce staged was hardly equal to what we have previously seen at the autumn shows of this Society. Plants certainly were not so numerous, and the fact of only three exhibitors staging for the big collection of fruit, whilst hardy fruits, such as Apples and Pears, were not in such abundance as in some seasons, militated greatly against the appearance of the fruit section. Vegetables, however, were both numerous and well shown, and the florist flower department fairly held its own, Hollyhocks being quite a feature of the Exhibition.

As fruit holds the first place in the schedule we may very well take it first in our report. First on the list is a collection of twelve sorts, and here Mr. McIndoe, Hutton Hall, Guisborough, Yorks, was first, having fair Gros Maroc, Black Hamburgh, fine Duke of Buccleuch and Trebbiano Grapes, two fairly good Pine Apples, good Galande Peaches, a couple of Melons, Figs, and good Humboldt Nectarines. Mr. Murray, gardener to the Marquis of Ailsa, Culzean Castle, Maybole, was a close second, notably good being his Buckland Sweetwater Grapes, good Galande Peaches, and extra fine Castle Kennedy Figs. Mr. Morrison, gardener to Miss Nisbet-Hamilton, Archerfield, Drem, third. Eight exhibitors staged in the class for eight dishes, and here Mr. McKelvie, gardener to the Dowager Duchess of Roxburgh, had the premier prize, Grapes being good—Black Hamburgh, and small but well-finished clusters of Buckland Sweetwater, good Grosse Mignonne and Noblesse Peaches, Elruge Nectarine, Figs, Plums, and Melon. The second prize went to Mr. Day, Galloway House, Garlieston, his best dish being Alicante Grapes, others only moderately good. Mr. McKinnon, gardener to Viscount Melville, Melville Castle, Lasswade, was third, the Peaches and Nectarines in this collection being particularly fine.

For a collection of ten sorts of hardy fruits, grown out of doors, Mr. L. Dow, gardener to Sir David Baird, Bart., Newbyth, Prestonkirk, was first with a fair lot, consisting of Noblesse and Stirling Castle Peaches, Elruge Nectarines, Breda and Moorpark Apricots, Jargonelle Pears, Morello Cherries, and two varieties of Plums. Mr. McIntyre, Woodside, Darlington, and Mr. Day, Galloway House, took second and third prizes in the order named. For twelve dishes of orchard house fruit, at least six sorts, Mr. Hunter, gardener to Earl of Durham, Lambton Castle, Fence Houses, Durham, was first with six dishes of Pears, large, but not quite ripe, three dishes of Apples, and a dish each of Nectarines and Plums. Mr. Melville, gardener to Hon. Mrs. Dalrymple, Elliston, St. Boswells, second, with a fine lot of fruit, and Mr. Bowman, Lasswade, third.

We come next to the Grapes, and found the white sorts generally unfinished, though in other respects fine. For twelve bunches, six white and six black, Mr. McKelvie took the first place, having beautifully finished Muscat of Alexandria, fine Buckland Sweetwater, and Raisin de Calabrie, for white; and very fine Gros Maroc, Kempsey Alicante, and Muscat Hamburgh, for black. Mr. Boyd, gardener to T. Forbes, Esq., Callander Park, Falkirk, was second with very fine Golden Hamburgh, extra good Black Hamburgh, fine Muscat Hamburgh, and large Mrs. Pearson. Mr. Hunter, Lambton, third with very large bunches of Gros Guillaume and Alicante, Canon Hall and Muscat of Alexandria, also large but unripe. Mr. Murray, Parkhall, Polmont, in the same class, had very noteworthy Gros Maroc, Alicante and Alnwick Seedling; Mr. Hammond, Brayton, and Mr. Murray, Culzean, also showed good Grapes. For eight bunches Mr. Boyd secured the first position with grand Alicante, Alnwick Seedling, extra fine; Madresfield Court and Muscat Hamburgh, with Muscat of Alexandria not quite ripe. Mr. McKelvie was a good second, his Muscat being again superb in condition, and Mr. Murray this time third, Messrs. Hunter and Hammond also showing. Again Mr. Boyd was first, with four bunches, showing superbly finished Black Hamburgh, Muscat Hamburgh, Alicante, and Alnwick Seedling. The second prize fell to Mr. McHattie, gardener to Marquis of Lothian, Newbattle Abbey, Dalkieth; Mr. Hammond being third, and four exhibitors were left out in the cold, much of the fruit wanting in finish.

For two bunches of Muscat of Alexandria, Mr. McKelvie was first with magnificently finished golden clusters, and Mr. Day's second with large but unfinished fruit. Mr. Boyd had the best two Black Hamburgs, medium as to size, but well finished, Mr. Murray, Culzean, being second. The single bunches of Muscat of Alexandria were in each case green, Mr. Potter, White Hall, Carlisle, having the best. Black Hamburgs were also generally poor in finish, Mr. Collins, Walkerburn, Peebles, having the best single bunch. Alicantes were good, Mr. Wilson, Kingsknowe, Galashiels, being first with a 4 lbs. cluster, and Mr. Caldwell, Ashley Bank, Langholm, second. Mr. Murray, Culzean, took first with a very fair sample of Alnwick Seedling; Mr. Murray, Parkhall, second with larger, but much rubbed bunches. For Gros Colman, Mr. Jeffrey, gardener to R. Pringle, Esq., Craigclemp, Langholm, was first with a fine 2 lbs. bunch; Mr. Murray, Culzean, a very close second. For Lady Downe's, Mr. Murray, Parkhall, was first, and Mr. McKelvie second, both good. For the best of any sort of black, Mr. McKelvie, with a well finished Gros Maroc, was first, and in the corresponding class for white, Mr. Ramsay, gardener, Fordell, Inverkeithing, took first with very fine Chasselas Napoleon, Mr. McKelvie second with good Duke of Buccleuch. The finest flavoured black was Muscat Hamburgh; of white Duchess of Buccleuch, and the finest bloom Alicante was from Mr. Boyd.

Very few Pine Apples were shown, the best Queen being from Mr. Ramsay, and Mr. McIndoe second; and the best Smooth Cavendish from Mr. McIntyre, The Glen, Peebles, who also had the best two varieties. Melons were not numerous, Mr. Dow being first for green-fleshed, and Mr. McIndoe for scarlet fleshed sorts. Six dishes of very good Figs were shown, the best being from Mr. McIntyre, The Glen.

Of Peaches there were nine dishes, Mr. McLeod, gardener to J. Smith, Esq., Brentham Park, Stirling, being first with very beautiful examples of Lord Palmerston. Mr. J. Harkness, Broadmeadows, Berwick-on-Tweed, had the best Nectarines, medium-sized Pitmaston Orange. The best Apricots

were from Mr. Galloway, gardener to Earl of Minto, Minto, Hawick. Mr. Parker, gardener, Impney Park, Droitwich, had the best Green Gage and red Plums, and Mr. Potts, gardener to J. W. Laidlay, Esq., Seacliff, North Berwick, the best yellow Plums.

Pears were very deficient, the best six sorts being orchard house fruit from Mr. Merray, Parkhall, who also had the best dish of Jargonelles. Of Apples, considering the poor crop throughout the country, a very satisfactory lot was staged. Eight exhibitors staged collections of twelve sorts, Mr. Galloway, Minto, being first with well-finished, but not large fruit, and Mr. Branton, gardener to Sir Alex. Kinloch, Gilmerton, Drem, second. For twelve varieties of kitchen Apples Mr. Branton was first and Mr. Parker, Impney Park, second; Mr. Murray, Culzean Castle, having the best dessert Apples. Prizes were offered for six fruits of various kinds, the best of these being Ecklinville Seedling, seventeen dishes of which were shown, Mr. Brotherston, gardener to the Earl of Haddington, Tynninghame, Prestonkirk, being first, and Mr. McLean, Vinter's Park, Maidstone, second, both with fine samples. Stirling Castle, thirteen dishes, Mr. George Wood, Woodside, Musselburgh, first, and Mr. Cairns, gardener to Earl of Home, The Hirsell, Coldstream, second. These were also very fine. Lord Suffield, twenty-one dishes, Mr. McLean, first, and Mr. Blackie, Viewforth Ho, Leith, second, with large and fine fruits. Keswick Codlin, eighteen dishes, Mr. Brotherston first and Mr. McKelvie, Broxmouth, second with extra fine samples. No fewer than four varieties of Apples were shown as Keswick in this class, a most remarkable fact in the case of so well-known an Apple. Blenheim Orange brought twelve dishes, Mr. Parker being first and Mr. McLean second with smaller but better finished fruits. Warner's King brought only six dishes, Mr. Brotherston being first and Mr. Kerr, Sunlaws, Kelso, second. The two heaviest dishes of Apples were Warner's King from Mr. Brotherston and Mr. McKelvie respectively. Of miscellaneous exhibits Messrs. Dickson and Co., Edinburgh, staged 130 dishes of Apples, mostly small and green, and Messrs. Thomson & Sons, Clovenford Vineyard, a basket each of Duke of Buccleuch and White Muscat Grapes.

The vegetables formed quite a show of themselves, the largest display we have seen in Edinburgh. For a collection of twelve sorts seven exhibitors staged, that from Mr. R. Cairns, gardener to Lord Charles Scott, Jedburgh, being first; extra good Onion, Cranston's Excelsior, fine autumn Giant Cauliflowers, Telephone Peas, Moore's Cream Marrow, large clean Leeks, and Trophy Tomatoes were the most noteworthy dishes. Mr. Potter, Seacliffe, second; and Mr. Gourlay, gardener to Professor Charteris, Loanhead, third. The other vegetables especially noteworthy were Onions from Mr. Murray, Culzean Castle; Celery from Mr. Cairns, The Hirsell; Cauliflowers from Mr. Harper, Perth. Tomatoes were largely shown, Mr. Hunter, Lambton Castle, being first with rather unripe fruit, and Mr. McIndoe second. The latter also showed for exhibition some very fine Tomatoes. Collections of Potatoes were not largely shown, the best twelve sorts being from Mr. John McIntyre, and the best six sorts from Mr. G. Ormiston, Jedburgh.

Plants were not numerous shown, Mr. J. Patterson, gardener, Milbank, being the only exhibitor of six stove and greenhouse plants, and securing first prize for the same. His best specimens were Erica Marnockiana, E. Turnbulli, E. Irbiana, and E. retorta major. Mr. Turnbull had also the best greenhouse plant in flower, the best Cape Heaths in 9 inch pots. Mr. D. Greig, gardener to Mr. Christie, Liberton, was first for the greenhouse flowering plants with small specimens. Exotic Ferns were extra well shown, Mr. Mackinnon, Melville Castle, being first for six varieties with moderately large and extremely fresh plants, the best being a Davallia Mooreana and a fine lot of Microlepia hirta cristata. Mr. Forbes, gardener to Niel Fraser, Esq., Rockville, Murrayfield, was second with smaller but equally well cultivated plants, Dictyogramma japonica being especially fine. Mr. Forbes was first for four Adiantums with very fresh and fine examples of Flemingi, Williamsi, cuneatum, and gracillimum. Mr. Grossart's first-prize Crotons and Dracenas were the most noteworthy among foliage plants. Of Orchids there was a poor show; for four plants Mr. Grossart being first with Cypripedium Harrisianum, C. calurum, Odontoglossum grande, and Vanda suavis. Mr. Patterson had the best two Orchids, and Mr. Grossart was first for one plant with Vanda suavis (Manchester variety). Mr. McLeod, Brentham Park, second with Cattleya gigas with seven flowers. Specially noteworthy among other plants were the first-prize Tuberosus Begonias from Mr. Kerr, Sunlaws, Kelso, the six Chrysanthemums from Mr. A. W. Henderson, G. Wermig and Simon Delaux being very fine, and fine Encharis amazonica from Mr. Patterson, to which first prize was awarded. Of table plants Mr. McIntyre had the best six foliage, Mr. Grossart the best six flowering, and Mr. J. Cumming the best six Ferns. Only two tables of plants arrayed for effect, neither being noteworthy.

The competition for the best table of plants, 40 feet by 10 feet, open to nurserymen, was confined to Messrs. R. B. Laird & Sons and Messrs. Ireland and Thomson, the first prize being awarded to the former. The general effect was perhaps a little heavy, coloured-leaved Dracenas and other foliage plants being set rather closely among a groundwork of Ferns and small flowering plants. The second prize table was much lighter, Liliums forming a feature in the arrangements. The best Palms and Coniferae came from Messrs. Ireland & Thomson, Messrs. Laird securing first for twelve table plants in foliage, for twelve in flower, and twelve herried plants, Messrs. Ireland & Thomson being first for twelve Conifers suitable for table plants.

Among miscellaneous exhibits, Messrs. Dickson & Co. showed a table of Apples and various florists' flower: intermixed with plants; Messrs. Methven and Sons had a table of decorative stove and greenhouse plants, while from Messrs. J. Lamont & Sons came an attractive table of single Dahlias, Pinks, Sweet Peas, &c. The Botanic Gardens furnished a table of curious and interesting plants not generally cultivated. Mr. Thos. Ware, Tottenham, London, showed some very attractive stands of single and bouquet Dahlias, and from the New Plant and Bulb Company, Colchester, came cut Liliums, mainly auratum and tigrinum.

[We regret that the notes of our reporter on florists' flowers at this Show did not reach us in time for publication.]

GLASGOW AND WEST OF SCOTLAND HORTICULTURAL SOCIETY.

THE autumn Show of this Society was held on the 8th inst. in the St. Andrew's Halls, and was in some respects superior to that of last year. This was more than we anticipated, the season not being very favourable,

and the heavy rainfall a few days previous to the Show rendered it very probable that the cut flower section would thereby suffer. Such care, however, had been taken by competitors that scarcely a soil-d bloom could be seen in the Halls. The number of entries was much in excess of former years. The large hall was entirely filled with plants and fruit, while three lesser halls were filled with cut flowers and vegetables respectively.

The centre of attraction in the large hall were the tables of plants arranged for effect. This prize has now become the leading feature of the exhibitions. Additional interest was attached to this class on account of a gold medal being added to the first prize by the Vice-President, John L. Henderson, Esq., Westbank, Partick. Five tables were staged, all of them reflecting credit on the respective competitors, some being conspicuous for well grown specimens, others for good arrangement. After careful consideration the Judges awarded the first prize to Mr. James Ross, gardener to George Ferguson, Esq., Trinidad Villa, Ibrox. His table was made up of Crotons, Dracenas, Maidenhair Ferns, and Palms, very well grown and neatly arranged. Second prize to Mr. Mathieson, gardener to John L. Henderson, Esq.—a very good table, a fine Palm in the centre, much too large for the size of the table, very likely losing it first place. Third prize to Mr. Alexander Raeside, gardener, Yorkhill. Orchids were conspicuous by their absence in all the tables. A few Odontoglossum Alexandrae and Nerine would have given a superior tone to them all.

The platform was beautifully decorated with choice Crotons, Dracenas, and Palms by Messrs. J. & R. Thyne in their usual style of artistic workmanship and elegant finish, groups of their Croton Thynnei showing to great advantage under the large Palms. This collection was deserving of the highest commendation, which was unanimously awarded. The same firm had on exhibition specimens of their floral handiwork in wreaths, crosses, bridal and assorted bouquets, done up tastefully with Chrysanthemums, Tuberose, Lapagerias, Tea Roses, and Nile Lilies, very highly commended.

A number of tables were filled by nurserymen for exhibition only, and added much to that section of the Show. Mr. Matthew Campbell, nurseryman, High Blantyre, filled two tables, a collection of Hollyhock, spikes of fine quality, forming a splendid background. Two seedlings were much admired; they were named John Lyon, a primrose self, and Sir Garnet Wolseley, claret colour, highly commended. The Carnations and Picotees of this collection were very fine. Messrs. Dobbie & Co., Rothesay, contributed good specimens of their new Turnips and stands of their famous strains of Marigolds, &c. Mr. Cuthbertson, Rothesay, had Pansies, Antirrhinums, and Marigolds, highly commended. Mr. Lister, Rothesay, had a similar collection, his Pansies being also highly commended. Mr. John Sutherland, nurseryman, Lenzie, had a stand of a hundred Carnations, large blooms and good varieties, very highly commended. Messrs. McGredy & Son, Woodside Nursery, Portadown, had a splendid stand of Cactus Dahlias, including Glare of the Garden, Constance, and a new yellow named M. S. Hawkins, very attractive. Mr. Baxter, Daldowie Gardens, Broomhouse, exhibited his seedling Viola York and Lancaster, and was awarded a first-class certificate. A model flower garden design, which attracted much attention, was made and exhibited by Mr. W. George, the Gardens, Beaconsfield House, Kelvin-side. This was certainly the most excellent exhibit of the kind ever sent to this Society for exhibition.

For twenty-four blooms Pansies, twelve show and twelve fancy, Mr. John Sutherland was placed first, and Mr. A. Lister second. In the class for twelve varieties of single Dahlias in bunches of ten, Messrs. John Lamont & Sons were, as usual, successful in carrying off the first prize. Their best varieties were Highland Chief (new), Duke of Edinburgh, Volunteer, Yellow Queen, Mr. Cameron, Sunray, White Queen, Comet, Zulu Improved, Golden Volunteer, and Franc Gibb Dougall. Second, Mr. M. Campbell; and third, Messrs. Jas. Cocker & Sons, Aberdeen.

In the class for nurserymen only, twelve plants for table decoration, distinct varieties—First, Mr. John Sutherland; second, Mr. A. Lister. Twenty-four spikes Gladioli, distinct varieties—First, Messrs. Samuel McGredy & Sons, Portadown. Some of the best spikes were Ida, Lizzie, Emily Fordyce, Standard, May Robb, Alice, Conspicua, Mrs. Johnston, George Kincard, Evelyn, Mrs. David Paul, and Mrs. Bell. Second, Mr. E. Campbell, Cove Gardens, Gourrock. Twenty-four blooms Dahlias, distinct varieties—First, Mr. D. Macfarlane, Finnart Gardens, Greenock. This stand also gained the silver medal for the best twenty-four blooms in the Exhibition. His varieties were Rev. J. B. M. Camm, Queen of York, Champion Rollo, Hon. Mrs. P. Wyndham, Grand Sultan, Mrs. Saunders, Georgina, Vice-President, Harrison Weir, Julia Wyatt, W. H. Williams, Clara, Herbert Turner, James Dick, Mrs. Langtry, Madame Souhyre, Mrs. Gladstone, Henry Walton, Rebecca, Goldfinder, Joseph Green, and Flora Wyatt. Second, M. Campbell; third, Mr. Jno. Sutherland.

Twenty-four blooms Roses, distinct varieties.—Messrs. Samuel McGredy and Sons were first with fine blooms of the following varieties:—Prince of Wales, Baron N. de Rothschild, Lælia, Madame Clémence Joigneux, Louis Peyronney, Madame E. Verdier, Ulrich Brunner, Madame Marie Verdier, Dr. Andry, Baroness Rothschild, Etienne Levet, Antoine Ducuer, White Baroness, Earl of Pembroke, Merveille de Lyon, A. K. Williams, Mabel Morrison, Princess Beatrice, Louis Van Houtte, and Victor Hugo. Second, Wm. Montgomery, nurseryman, Cardross; third, James Cocker & Sons, Sunnybank Nursery, Aberdeen.

Twenty-four blooms, Carnations and Picotees.—The first prize was gained by Mr. John Sutherland, with a splendid stand of large blooms and good varieties; second Messrs. James Cocker & Sons, third Mr. William Campbell.

PLANTS.—Ferns were well shown. In the class for four exotics Mr. James Thomson, gardener, Clydevue, Helensburgh, was first with neat specimens of Gymnogramma Martensi, rarely so well shown, and Adiantum gracillimum in fine condition. For two Gleichenias Mr. George Weston, gardener, Murcia House, Pollokshields, was first with good clean-grown plants of G. dicarpa and G. spelunca. Fine-foliage plants were well shown by Mr. John Mathieson, gardener, Westbank, a splendid specimen of Cycas circinalis, Dracena indivisa, and Croton Weissmani, very well coloured. He had also first prizes for a specimen Palm and three pots of Lilium lancifolium. For six plants, table decoration, twelve lots were staged, and a more uniform display could not be seen anywhere. Mr. B. S. Williams admitted he had not seen better. Mr. James Ross, gardener, Trinidad Villa, secured

the first place, and Mr. P. D. Agnew, Ascog, second. The favourite plants were *Pandanus Veitchii*, *Croton Chelsoni*, and *Aralias Veitchii* and *Chabrieri*. Orchids were not numerous; the best were from Mr. John McLeod, Brentham, and Mr. Peter Walker, Bonnybridge. British Ferns were a splendid lot, Mr. William Landsburgh, gardener, Beechwood, Bearsden, winning the first prize with fresh well-grown examples. For six Zonal Pelargoniums Mr. John McQuator was deservedly first with densely flowered plants of good semi double varieties. Cockscorns were coarse with the exception of the first prize plants of Mr. George Robertson, Woodside Gardens, Greenock.

CUT FLOWERS.—For twenty-four blooms Dahlias Mr. Thomas Hogg, gardener, Aitkenhead, was first with good samples. He had also the first prize for twelve blooms of fancy varieties. The prize for twelve show Dahlias was won by Mr. Robert Smith, Howwood. For eight bunches of single Dahlias Mr. Thomas Hamilton, Dunreiff Gardens, had the first place. Annuals were a good show; for twenty-four distinct varieties Mr. George Gray, Moat Cottage, Carlisle, was first with a grand stand. He was also first for twelve show Pansies and twelve blooms of African Marigolds. For twelve annuals, general, Mr. J. Stewart, Lenzie, had first position; he was also first for twelve blooms of Pansies (fancy), and for twelve bunches of herbaceous and twelve blooms of Asters other than quilled. For twelve bunches of Violas Mr. J. Baxter, Daldowie, was easily first, his seedlings York and Lancaster, Countess of Kintore, and Skylark, being very fine; this stand was very tastefully arranged. For twelve blooms of Roses Mr. McRorie, Burnbrae Cottage, Kibbarchan, was first. Phloxes were exceedingly fine, particularly those shown by Mr. George Greenshields, Biggar, who was first for six spikes in both the gardeners' and amateurs' classes. French Marigolds were largely shown, the best were of Messrs. Dobbie and Co.'s strain grown by Mr. P. McCullum, Rothesay. The Carnation and Picotee prize offered by Baillie Goodwin, Kirkintilloch, was won by Mr. Storie, Lenzie. Mr. John Lyon, gardener, Greenhall, Blantyre, had the best Hollyhock blooms. For twelve spikes Gladioli, distinct varieties, Mr. James Thomson, Clydeview, Helenburgh, was first with fine spikes. In the class for six spikes Mr. David Kidd, Fairlie Lodge, Fairlie, was deservedly first.

FRUIT.—Of this there was a creditable display considering the rather unfavourable season. For twelve dishes of fruit the only collection forward was from Mr. Alex. Crosbie, Buchanan Gardens, Drymen, but it was of good quality, and was awarded first prize. The prize for six dishes was taken by Mr. John McLeod, Brentham Park, his dish of Peaches Lord Palmerston being very fine. Six dishes of hardy fruit was well shown by Mr. A. Wilson, gardener, Auchencrive, Ayr. For four bunches black Grapes other than Hamburgs, the prize offered by Messrs. J. & R. Thyne was taken by Mr. J. Maule, gardener, Midtonfield, Howwood, with good examples of Black Alicante. For two bunches of Black Hamburgs, Mr. Jas. Thomson, gardener, Broomhill, Partick, had first for splendid examples, the berries being large and finely bloomed. Mr. John McLeod had first for two bunches of Muscats; and for two bunches other than Muscats, Mr. James Cocker, gardener, Wheatlands, Bonnybridge, had first place. For six distinct varieties of Apples, four of each, Mr. Strathall, Yarbottom, was first with very fine examples of the following varieties—Hawthornden, Beauty of Kent, Warner's King, Ecklinville Seedling, Lord Suffield, and Lord Grosvenor. For six Peaches, Mr. John McLeod was first, and D. McBean a good second. For one Melon Mr. Wm. Thorburn, Castle Semple, was an easy first. Mr. Wm. Forrest, Clydegrove, Crossford, was first for twelve Plums and twelve baking Apples. Mr. A. Wilson was first for twelve Pears, and Mr. Procter first for twelve dessert Apples.

VEGETABLES.—The show of vegetables was considered not to have been equalled at any former exhibition. The premier prize, as usual, was taken by Mr. D. McBean, gardener, Craigend, Johnstone. The Leeks, Cauliflowers, and Peas in this collection could hardly have been excelled. He won also first prizes for the following:—Two Cucumbers, six Leeks, two early Cabbages, two Red Cabbages, and twenty-four pods French Beans. For three heads of Celery, Mr. Thomas Hogg, gardener, Aitkenhead, was first with well-blanching heads; the other lots, though large, were very green and coarse. For twenty-four pods of Peas, Mr. John Jamieson, Alexandria, was first. For six Carrots, Mr. Wm. Hewet, Temple Sawmills. Cauliflowers were well shown by Mr. Jas. Cocker; Parsnips by Mr. Thos. Brown; Turnips by Mr. Robt. Inglis, and Parsley by Mr. Walter Rae. The prize for six Onions was won by Mr. G. Thomson, gardener, Springrove, Kibbarchan; six distinct varieties of Potatoes by Mr. Thos. Barbour, Parkthorn, Dundonald; Tomato in 10-inch pot, by Mr. Robt. Dunlop, Viewpark Gardens, Uddingston; twelve Tomatoes by Mr. Robert Strathall; Savoy by Mr. Alex. Raeside; Beetroots by Mr. Jas. Hutchieson, and Beans by Mr. Walter Welsh.

Amateurs.—The amateurs made a creditable display, being considerably in advance of former years. Notably in the vegetable section was this apparent, the Leeks, Carrots, and Celery being very well grown, and in one or two instances taking the prize from the professional gardeners. Much of the success of the Society is due to the untiring energy and able direction of the Secretary, Mr. F. Gibb Dougall.—G. R.

DURHAM SHOW.

The fourteenth Exhibition of flowers, fruit, and vegetables was held in the New Markets and Town Hall on the 7th and 8th inst., and was the best the "Floral Society" has held. The surrounding district is noted for vegetable growers, most of whom compete, vegetables forming one of the principal features of the Exhibition. An account of these and the various exhibits will now be given.

STOVE AND GREENHOUSE.—Four collections of specimens were staged. Mr. F. C. Ford, Pierremont, Darlington, was first with *Ericas Jacksoni* and *Austrianiana*, both good; *Allamanda Wardleyana* and *Phaenocoma prolifera* Barnesi, the latter well flowered, and all very fresh. Mr. Thos. Suffield, Elmridge, Darlington, was second with an excellent *Erica Marnockiana* and a good *Clerodendron Balfourianum* as his best plants. Mr. Morris, Park Road, Filling, third; and Mr. James Moore fourth. There were six entries. In the groups class Mr. J. McIndoe, Woodside, Darlington, was first with an ornate and chaste arrangement, consisting of *Cocos Weddelliana* and *Crotons*, a groundwork of *Adiantum cuneatum* and *Lobelia*, edged with *Panicum variegatum*. Mr. W. R. Armstrong, Newcastle, was second; and Mr. F. C. Ford third. For four foliage plants Mr. McIntyre was again first *Cocos Weddelliana*, *Crotons Hamondi* and *Dasyliro glaucum* being very

good. Mr. Morris and Mr. Suffield followed. For four Ferns (exotic) Mr. McIntyre was once more first with *Gleichenia rupestris* and *Adiantum cuneatum*, farleyense, and decorum, all in good condition. Table plants were well represented, Mr. F. C. Ford being first with *Dracæna indivisa*, *Pandanus Veitchii*, *Croton irregularis*, *Aralia Veitchii*, *Dracæna superba*, and *Cocos Weddelliana*.

TABLE DECORATIONS.—These were a new feature to the Exhibition; the Society offering £13 in prizes. Mr. M. D. Thompson, South Hill, was first. The epergne was gracefully filled with the light-flowered *Francoa ramosa*, *Lapageria rosea*, and alba, and a light *Clematis*. The base was composed of *Ixoras*, *Water Lilies*, *Allamandas*, and *Cactus Dahlias*. Mr. O. Lamb, Hermitage, was a good second. The third was inferior in taste, yellow *Calceolarias* and blue *Violas* predominating, and by daylight must have been very ineffective. It is to be hoped that as the Society offers such liberal prizes next year may be witnessed a great improvement in this style of decoration.

FRUIT.—The show of fruit was not large, but was very good. For six dishes Mr. Westcott, Ruby Castle, was first with Black Hamburg Grapes (fine), Muscat of Alexandria Grapes, Royal George Peaches, Pimston Orange Nectarines, High Cross Hybrid Melons, and Williams' Bon Chrétien Pears. For two bunches of Black Hamburg Grapes Mr. Jenkins, Aldin Grange, Durham, was first; they were finely coloured, large in berry, and perfectly finished. The same exhibitor was first for Grapes any other colour. The variety was a splendid example of Alicante. For white Grapes Mr. Elliot was first with Muscat of Alexandria, good. Mr. Westcott was first for the heaviest bunch with a Black Hamburg weighing about 6 lbs. Mr. W. Laidlaw was first for Peaches, with Royal George, Mr. Westcott was in the same position for Nectarines, and also first for Pears with Jargonelle.

VEGETABLES.—For a collection of eight dishes of vegetables there were eight entries, Mr. W. Rohson, Milburngate, being first, showing splendid Cauliflowers, Golden Ball Turnip, Sandringham White Celery, Leeks, very large round and kidney Potatoes. Mr. G. H. Proctor was second, red and white Potatoes, Celery, Spring Onions, and Golden Ball Turnip being very good. Mr. J. Brooke was third, and staged excellent Leeks, measuring 12 inches in blanches and 6 in circumference. Leeks were excellent throughout, there being fourteen entries in the class for them, Mr. Rohson's first prize examples being clean and measuring 13 inches and 7 in circumference. Carrots and Parsnips were also excellent, Mr. W. Walton being first with roots 15 inches long and 12 in circumference. The same exhibitor was also first for Parsnips, these were 30 long and 9 thick. Potatoes were good, and this useful esculent gets justice done to its growth at Durham. For white kidneys Mr. J. Tweedy, Ferry Hill station, was first, and Mr. J. H. Proctor second with International. For round Potatoes Mr. J. H. Proctor was first with Schoolmaster, which were much admired, and evoked no little amount of enthusiasm. The same gentleman was also first with red kidneys, and in the same position for six heaviest Potatoes, with the Brazilian, weighing 11 lbs. 2 ozs.

This is a very large Exhibition, only the principal outlines being given. It embraced an entry of plants 65, table, decoration, and cut flowers 163, vegetables 430, giving a total of 658. We cannot help mentioning the very unsatisfactory mode the Society has of letting the public know who are the prizewinners. There is on the prize card a number only, and if you are interested in any exhibitor you must perforce buy a catalogue at 6d., and hunt up for the class you wish to know about. Not only is this cumbersome, but a tax which ought not to be imposed. The system adopted at Newcastle and other good shows would be a great improvement at Durham.

WATER AS AN ORNAMENTAL FEATURE.

IN many gardens of the highest note water forms an object of the greatest possible importance, and next if not quite equal to shrubs and trees. The value of water may also be easily understood by the careful way in which it is economised. In most places of note water is made visible in some form. If a stream cannot be commanded a piece of still water is made to do duty; and now and then highly ornamented or elaborate works of art are devoted to its reception, but even without the aid of these it is at all times attractive, even in its simplest form. Let a visitor to Hampton Court but take the trouble to ascertain whether any portion of the beautiful grounds receives more attention than the circular basin of water with its gold fish. All classes seem to delight in gazing on the glassy or rippled surface of water wherever it may exist, be it as a noble river, a running brook, or a placid pond. Water, therefore, may be regarded as a universal favourite; and considering that it is of such importance to the well-being of the community, we need not be surprised at now and then hearing of disputes where it is misapplied or its purity destroyed. It uses, however, for ornamental purposes in gardens are those to which I chiefly intend to confine myself.

Water being so essential a feature in all dressed grounds, there are few places where its introduction, at whatever cost, is not desirable, not only for its own sake but also for the display of the works of the architect and sculptor, and which otherwise it might not be possible to bring in with propriety. How much the gardens at the Crystal Palace would lose in public estimation if deprived of their fountains. Not less important are the cascades and fountains at Chatsworth; while the silvery Thames lends its aid to the noble grounds at Cliveden. Few are perhaps less blessed with water than most public gardens, but the Thames runs by it, and a sheet of water forms a foreground to the view in one direction from the large Palm house; lakes and borrowed streams are doing duty of a like kind in hundreds of other places.

Water as a feature in the landscape is so much valued that its presence is courted at times, perhaps, when good taste might even question its being in character with other things; but these cases are comparatively few, as there are few places where it may not be appropriately admitted. Perhaps one of the principal objections to its use as an ornamental feature

is where it cannot be had in sufficient quantity to keep itself clear. Muddy impure water is at all times objectionable, but it is questionable whether the plan of removing and destroying everything of a vegetable kind that exists in water is good; on the contrary, stagnant water is rendered more pure by the vegetation which is supported by it. Many a pond in an undisturbed corner is entirely covered over with duckweed, presenting a pale green surface completely hiding the water, and yet no hurtful effluvia arise. Nature in this case, as in many others when she is not hindered by officious hands, provides the antidote as well as the poison; and it is not until the ditch, pond, or watercourse is disturbed that any noxious vapours are diffused. A rank coarse herbage of other plants often accomplishes the same object, the rankness and vigour being in proportion with the quantity and quality of the food; so that our country friends living near stagnant pools have less cause to be alarmed in summer than they may expect. The vapours arising from wet, marshy, undrained land are quite different. The more exposed sheets of water are to the action of the wind the purer and better they will be, the moving mass being less likely to pass into a state of impurity than when it is less agitated. In many places of note the most important feature is water, and in some the duties water is made to perform differ in reality but little from those of the modern flower bed.

Water may be considered scarcely less necessary than trees and shrubs in a complete place, and I advise all who can command its services to do so.—N.



HARDY FRUIT GARDEN.

ROOT-PRUNING—Apple, Pear, and Plum trees having a vigorous wood growth but no fruit, and which are practically barren, should now have all or part of the roots pruned to check such wasteful growth and to induce a free formation of fruit buds. All the leading roots of young trees may be pruned, but old trees with very big roots should have only half the roots pruned this autumn, and the other half next autumn, in order to avoid the risk of killing the trees, which there certainly would be if all the roots were severed. The size and age of each tree must therefore be our guide to its particular treatment. The distance from the stem at which we should sever the roots is from 2 to 6 feet. A circle being described around the stem at a distance proportionate to its size, a trench is opened outside the circle and half way round it, downwards in the soil till a point is reached immediately beneath the stem itself. The trench is only made wide enough to enable the workman to get at the roots. When they are cut the trench is refilled with turfy loam, and the other half of the circle is done if the tree is a young one. As each tree is done it is at once made fast with stout tarred string and pegs driven securely into the ground to avoid all risk of the tree being loosened in the soil by wind; a band of some soft substance, such as old sacking, garden mat, or hay, is first put carefully round the stem to prevent injury from string or wire. Particular attention is given to prevention of injury to the bark of the tree in the manner indicated, and in occasional but regular subsequent examinations of all supports and fastenings. Not lightly or hastily should root-pruning be decided upon. Barrenness in young trees is almost always owing to rampant growth, but in old trees it may either be caused by the roots having gone down into a cold wet subsoil, or to hard tissue and sluggish sap action in the branches. In the latter case it answers best to leave the roots alone, and instead of turning to root-pruning as our remedy, to shorten the branches sufficiently to get rid of all the parts that should have borne fruit, and to re-graft, not the stem but each arm of every branch. The effect of this process is remarkable, for the tree is soon clothed with a fine head of fruitful though vigorous growth. Mention is made of the grafting as an important specific for barrenness now, because it ought to influence our decision about the treatment of barren trees. By barrenness we do not mean the accident of a season, but a chronic condition, which an examination of the branches shows to us. If we find wood buds only upon the branches we know that we can expect no fruit, and the tree requires special treatment to bring it into a fruitful condition as speedily as possible. A fruit grower should live among his trees and should make their condition his special study, especially during the season of growth, in order that he may know what should be done to them in autumn and winter.

PREPARATIONS FOR PLANTING.—Early planting is sure planting, and we would urge upon our readers the great importance of making ready for this work to be done in October or as early as possible in November. The trees are then nicely established in the soil before winter sets in, some root growth is made, and we are able to render an early strong spring growth a certainty. Do not be satisfied with anything short of this. There can be no worse practice than the late planting which is almost invariably followed by a season of stagnation. This note of warning must suffice this week, but we hope to give detailed directions for the preparation of stations, and for the entire process of autumnal fruit tree planting.

FRUIT FORCING.

CUCUMBERS.—*The Autumn Fruiter.*—Give every attention to these, affording copious supplies of tepid liquid manure; remove superfluous laterals so as to guard against an overcrowded growth, take off male blossoms and tendrils, avoiding overcropping, and do not allow the fruit to hang on the plants after it becomes fit for use. Maintain a genial atmosphere by damping available surfaces other than the plants in the morning, afternoon, and evening; but the plants may be syringed in the afternoon on bright days. Pinch out the points of the shoots one or two joints beyond the show of fruit, looking over the plants twice a week for that purpose, and retain no more foliage than can be fully exposed to light. Earth up the roots as the plants advance in growth, only just covering up the roots each time of their showing at the sides of the hillocks or ridges, the soil being placed in the house some time previously to be warmed before use. All waterings should be of the same temperature as the house.

Winter Fruiter.—Put off or shift into large pots, plunging in a bottom heat of 80° or 90° until the plants are established, then raise them near the glass, maintaining a temperature of 70° at night, 75° by day, with an advance from sun heat of 10° to 15°. The fermenting materials, if such are used for bottom heat, must be in preparation, throwing into a heap, applying water and turning the heap over to induce fermentation and dissipate noxious gases before making up the beds. For producing fruit in February, plants not being raised previously, a sowing may be made at the beginning of next month; but they will not be necessary where there are other plants.

In pits and frames the temperature must be maintained by renovating the linings as necessary, and night coverings applied to prevent too great diminution of temperature. Give water very carefully, and sprinkle the plants only on bright days. Keep the foliage thin by removing bad leaves and exhausted growths, and close early with as much sun heat as possible.

YOUNG VINES.—These must have every encouragement in keeping the foliage clear, removing all laterals, as growth produced after the date is of no value, and maintain a warm well ventilated atmosphere until the canes are ripe. The ripening of the wood may be accelerated by keeping the house rather close in the day, so as to get a temperature of 85° to 90° from sun heat, opening the ventilators at night. Any supernumeraries intended to fruit next season should have the laterals cut away to the principal buds, leaving, however, an outlet for any excess of sap by a few laterals at the top of the cane, and be careful not to injure the principal leaves.

Late Houses.—Muscats and other late Grapes still require fire heat, as they are late this season, accompanied with a free circulation of air, continuing it until they are thoroughly finished. Muscats should have the foliage rather thin, indeed the leaves may be tied aside, as it is necessary the fruit have abundance of light and air, so essential for thorough ripening and putting on the amber colour so characteristic of good quality and finish. The night temperature should be kept at 65° to 70° with a fall of 5° through the night, and the heat should be turned on in good time in the morning so as to allow of an increase of ventilation, and the temperature be raised to 70° to 75° so as to insure to the Grapes a long ripening day, the temperature being kept at 80° to 85° from sun and with a free circulation of air 90° to 95°. The heat should be kept up by reducing the ventilation with the declining sun, and the temperature allowed to gradually decline at night, only keeping warmth in the pipes to allow the top and bottom ventilators to be left open to a slight extent so as to insure a circulation of air and prevent the deposition of moisture on the berries during the night. This should be continued until the Grapes are thoroughly ripe and finished, when a gradual reduction of temperature must take place, otherwise the fruit will shrivel; this must further be guarded against by not allowing the border, especially inside, to become dry. If there is any fear of this a good watering should be given on a fine morning when air can be freely given, and the border should be covered with dry material to keep down moisture. A temperature of 50° to 55° is necessary for the keeping of Muscats in good condition after they are ripe, and other houses of late thick-skinned varieties will require a similar temperature some time longer, or after they are finished, for the benefit of the Vines, and that the conditioning quality so essential to use, especially in such varieties as Gros Colman, Gros Guillaume, &c., may be effected.

Late Houses of Hamburgs.—The Grapes will be well advanced in colour and ripening. A gentle warmth in the pipes is necessary, so as to admit of a free circulation of air, and to maintain the night temperature at 60° to 65°. A little artificial heat during the day will also be of benefit in allowing of free ventilation and making the most of sun heat. Hamburgs colour and finish best beneath a good spread of foliage, but it is well not to encourage lateral growth now, at the same time the tendency to shanking is accelerated by large reductions of foliage, and equally so by sudden fluctuations of temperature. A little air should be left on top and bottom until the Grapes are ripe. If there is any deficiency of moisture in the borders it will be better to give a supply now than put it off until a later period, covering with some dry material so as to prevent damp rising. Outside borders will in most instances be sufficiently moist, if not they must be watered, and unless the weather set in wet they need not be covered at present, but light shutters or tarpaulin should be in readiness for placing over them, so as to throw off heavy rains.

Early-forced and Pot Vines.—There must be any further delay in the pruning of Vines intended to ripen their fruit by the end of April or

beginning of May, and in cleansing the house and Vines so as to have all in proper working order. Shorten the canes to about 8 feet, or lower according to the disposal of the plump buds, and prune the laterals close in to prevent bleeding; dress the cuts with Thomson's styptic or patent knotting.

PLANT HOUSES.

Winter Flowering Plants.—Such plants as Poinsettias, Plumbago rosea, Justicias, and other similar plants in cold frames, must be watered with great care, for if the water used be cold the roots will die and the plants become unhealthy. If tepid water is carefully and judiciously applied, they may safely remain in these positions for another fortnight. The colder state of the air at night renders it necessary for the frames to be closed early in the afternoon while the sun is upon them. The syringe should be discontinued for these plants in the afternoon, for they will be covered with a deposit of dew in the morning from the natural lowering of the temperature. Unless the day following is bright the plants will hang wet through the whole day, and if in this condition for many days damping and other injurious results will follow. All shading for these plants must be discontinued, so that every opportunity will be afforded for thoroughly ripening their wood. If this is not accomplished the plants cannot be expected to flower satisfactorily. A light house, where a good circulation of air can be given and a little warmth when occasion requires, should be washed and cleaned ready for the reception of the plants directly it becomes too cold for them in cold frames.

Begonias.—These plants will be safe in cold frames for a few weeks longer provided watering is done in the morning, and the atmosphere about the plants kept as dry as possible. If the frames are closed at night the plants will not suffer from cold for some weeks, but directly it is found impossible to keep the foliage dry they must be removed to a more suitable position. Damp is the greatest enemy to these plants in autumn, and prevents their being kept in cold frames in some localities as long as many other varieties of plants. Begonias are often spoiled by too high a temperature in autumn, although it may prove necessary to house them before long; no heat will be needed in the drier house in which they may be placed. The foliage of the plants must be preserved from damp, or else half their beauty is destroyed.

Celosias that are in a backward condition must not be kept in cold frames after this date, or their beautiful plumes will not be developed before the approach of short days. If they have to be hurried out in heat towards the end of October or the beginning of the following month they will not last long for decorative purposes. When developed in a warm close atmosphere they damp off just above the soil in the lower temperature of the conservatory. These plants should be placed at once in a light structure where a night temperature of 60° can be maintained with a circulation of air day and night, which will prevent their running up tall and weakly. As the plumes advance the temperature should be gradually reduced and less moisture sustained in the house until it is lowered to 50°.

Panicum variegatum.—For a variety of forms of decoration small pots full of this variegated Grass are most useful for associating with small Ferns and Selaginellas. For this purpose cuttings should be placed thickly together in sandy soil in 2 and 3-inch pots. Cuttings strike quickly in the propagating frames at this season of the year. After they are rooted the plants should be grown in brisk heat for a time, then gradually hardened and fully exposed to the light.

Tradescantias.—The variegated forms of *T. zebrina* are useful for the same purpose as *Panicum variegatum*, in fact more useful, for they last in rooms in good condition fully twice the length of time. Cuttings will root and grow in almost any soil if a little sand is added and they are stood in a warm moist structure where they can be shaded from the sun. It is a good plan to place four or five cuttings in each 2-inch pot, or they may be rooted in pans or boxes. When the latter is done they should be lifted directly they are rooted and about four of them placed together. The roots can be bound round with a little moss, and then stood in boxes, the spaces between them being filled with leaf mould. When treated after this manner they lift out of the box with good roots, and the plants last as long as if they had been grown in pots. When well rooted or established in boxes they should be grown fully exposed to the sun and moderately cool, or they grow too rapidly and soon become too straggling for many forms of decoration. It is a good plan to strike batches at intervals of about one month.

Coleus.—Where varied forms of decoration have to be carried out during autumn and winter too many small plants of these cannot well be provided. Bright little plants of *Coleus* in thumb pots are amongst the most beautiful. They do not last long in rooms, but as yet we have not found any other plant that can be raised in sufficient quantity to replace them. They root freely on a shelf in a warm house, and when confined at the root in the pots named they only grow slowly, therefore sufficient are rooted now to last until January. Some hundreds of neat plants in these small pots can be accommodated on a shelf, where the temperature does not fall below 60°. *Fittonias* or any similar foliage plants may be propagated in quantity for the same purpose.

Acalyphas.—Few foliage plants in a small state are more beautiful than these when grown fully exposed to the sun, and not too warm from the present time. It is a good plan to strike well-coloured tops at this season of the year in 3-inch pots. This size is large enough for the accommodation of suitable specimens for decoration. They root freely and quickly without losing a leaf, and if grown fully exposed afterwards they will be most striking in colour with their foliage nearly hiding the pots. These plants have no beauty when drawn up tall in warm, moist,

shaded stoves, but when grown as advised they cannot fail being admired.

THE BEE-KEEPER.

BEEES AT THE MOORS.

THE last two weeks of August and a few days in the beginning of September constitute the warmest period of the season, the mean temperature being 65°. That, with the recent rainfall and electric state of the atmosphere will, it is feared, be conducive to the Potato disease, and cut short the honey season, which promised so well on the 3rd and 4th of the month. On the last date mentioned I paid a visit to the bees at the Heather. Hives have risen in weight from 12 to 40 lbs., but very few supers have been filled. As a rule the bees were only taking to them. On the day mentioned we saw some hives weighed at 10 A.M., and again weighed at 4 P.M., when they were 8 lbs. heavier. Many bees were in the fields too, and would be for two hours longer—the best part of the day—so that I doubt not but if they had been weighed later they would have been some pounds heavier still. There is much reason to fear, unless in early localities, Heather comb will be scarce this season, and either no supers or partially filled ones will be the result.

Filling partially filled supers with pure Heather honey when there is abundance of loose Heather honey in the body of the hive is an easy matter, and is the most judicious and profitable thing for bee-keepers to do. The hive best adapted for that purpose is the B.H.I.C., but any hive having moveable floors can be arranged to feed back surplus honey stored in combs of the stock. Hives with fixed floors should not be termed hives. It is impossible to give instructions how hives should be prepared for this important work without seeing them, but your readers have had the principles of workings of B.H.I.C. explained, and will be enabled to make suitable arrangements. The simplest plan is to have a box without a lid, but with a floor placed beneath the hive. One end or side of this hive should open, but when shut should be perfectly close, so as not to attract robber bees. Into this box, which should be of sufficient depth to hold frames inverted, should be placed those containing Heather honey to be cleaned out, and the honey therein carried aloft to the supers by the bees, which supers should be wrapt up and kept warm. The hives selected to fill supers in this way must be strong, and the body of their hive well filled to insure all the honey being stored in supers. By acting according to these instructions, supers will be as superior as if they had been filled and finished in the natural way. We have had them, but care must be taken that nothing but Heather honey is fed back. It has taken us upwards of thirty years to convince bee-keepers generally of the superiority of the Stewarton system, and there is no hive so well adapted for bee-keeping in general, and for feeding back in particular, as "the best hive in creation."

USEFUL HINTS.

At this season it is perhaps desirable to warn bee-keepers against introducing queens, or joining swarms having two queens, rashly. I admit that alien queens can be, and are, joined to a hive safely without caging, and I could cite many cases where only a second or two expired between the depositing of the queen regnant and the introducing of an alien one which was well received; but the mishaps by reckless introduction which I am cognisant of are by far too numerous to warrant me in advising the introduction of queens without the use of a cage.

It is the health and unmaimedness of the queen that is the royal road to profitable bee-keeping, and in the absence of these a breakdown in the hive is sure to occur sooner or later, and at a time when the loss is irreparable. Therefore use every precaution before introducing queens or joining swarms together.

The balling of queens is, in my opinion, entirely due to stranger bees; at least, I have never witnessed a case otherwise. There are different phases of balling, but the most prominent one is when the bees favourable to the queen discover one or more fractious bees they immediately ball her. If the disloyal bee or bees are kept outside the queen is safe, but if one or more get near her she is either maimed or stung to death. Therefore select a young queen and cage her for at least twenty-four hours, releasing her at dusk.

Young bees at this season are doubtless not to be despised, neither are much older ones; both make capital stocks. It is the care and judicious management of these that determines our future success with either—not their age. One great thing with all queens is to take care and not stimulate these to breed at this season. All their strength and egg-laying power is best to be conserved till spring, the season that is most required for profitable bee-keeping.

If there is a paucity of bees in the hive containing a young queen, it rather taxes the powers of an aged one (intended to be deposed) to fill a few frames with brood, and place in the hive containing young queen intended for stock. Hives that require to be fed now, and not having a ventilating floor, should, immediately the feeding is past, have a clean dry board substituted, and, indeed, should be continued at intervals throughout the winter. A ventilating floor obviates all that, and conduces to having healthy bees, and many of them.

Robber bees are now on the alert. Keep a strict watch over all weaklings, and contract entrances according to the strength of the colony. Be careful neither to spill about nor expose syrup nor feeders. These are the things that decimate the bees, and those who have for years advised the autumnal stimulative feeding of hives must have, in their ignorance of the proper management of bees, practised some or all of the above. For many years it has surprised me why bees required feeding in autumn to stimulate breeding, when our own hives, as well as those in the whole district, were overflowing with bees. A clergyman of my acquaintance used to say, "Instead of requiring to feed to cause breeding I would rather feed to reduce the population of the hives, as they are by far too strong." While I advise strong hives for stocks at this season, I must not forget that for many years my best and most profitable ones were simply nuclei occupying only two or three frames, only they had large stores, and were kept comfortable.—A LANARKSHIRE BEE-KEEPER.

BEE-KEEPING IN CUBA.

THE honey bee was introduced into Cuba from Spain at a very early period of its history; and being a land of perpetual flowers, with no winter to impede their labour, they soon spread to all parts of the island, and bee-keeping has long since become one of the established industries. There is probably no other country of equal extent on the globe which has furnished an equal amount of honey and beeswax. The latter has for more than two centuries illuminated the churches of both this island and the mother country, besides furnishing the supply needed for other purposes, while the former has found a remunerative market in all civilised countries, chiefly in Germany, England, France, and the United States.

A Cuban bee hive is very simple, consisting merely of a hollow palm log, or oblong wooden box, 10 to 15 inches in diameter, and 5 to 6 feet in length, open at both ends. These hives are arranged in a horizontal position, 3 or 4 feet high, supported on a framework of long bamboo poles resting on posts driven into the ground. When these hives are full of honey, the Cuban bee-keeper, after thoroughly smoking the bees, thrusts into one end of the hive a long sword-shaped knife and cuts the combs loose from the inside walls. He then inserts a long iron rod, flattened at the end and bent in the form of a right angle, clear into the brood-nest (which generally occupies about 15 inches in length of the centre of the hive), cuts the combs, and pulls them out one by one. He then performs the same operation on the other end of the hive, and so continues until the whole apiary is gone over. The combs are now submitted to pressure, and the wax separated from the honey. Of course, the honey so obtained is not very pure, being mixed with pollen, propolis, dead bees, and the juices of larvae, all of which tends to cause fermentation; Cuban honey (than which, when pure, there is no finer in the world) has gained an unenviable reputation. Native apiaries of from fifty to 300 or 400 colonies are frequent, and sometimes as many as 2000 are kept in a single yard. The season for surplus honey extends from October to April, the height of the flow being from the middle of December to the middle of February; but there is almost always a sufficiency for breeding purposes,

and hence the Cuban bee-keeper never resorts to feeding. He "robs" his hives only once or twice during the year, and seems satisfied with an average production of 75 to 100 lbs. of honey, and 4 or 5 lbs. of beeswax per hive.

Nearly three years ago the writer introduced for the Messrs. J. N. and P. Casanova, 100 colonies of Italians in moveable-frame hives, together with all the modern appliances necessary to insure success. They were located about eighteen miles south-east of Havana, eight miles from the ocean, and, we believe, constitute the first apiary on modern principles ever seen in the island of Cuba; and to the gentlemen referred to belongs the credit of this great change in the systems of bee-keeping, from which promising results will undoubtedly be realised by many of their brethren in the near future.

MODERN BEE-KEEPING *versus* THE OLD WAY.

The year following the introduction of these bees, 113 colonies of them gave, in a period of four months, 43,000 lbs. of choice honey, being over 380 lbs. per hive, or more than four times the amount produced on the old plan. The success of this experiment far exceeded the most sanguine expectations of the Casanova brothers, and, being gentlemen of means, they at once set about and completed one of the best appointed modern apiaries to be found in any country; and for the benefit of the readers I will briefly describe it.

The apiary and buildings cover nearly three acres of ground, in the form of a rectangle, sloping to the south-east with a descent of 10 feet in 100. Near the centre of this plot are two sheds, each 200 feet long, extending across the plot in parallel lines, east to west, and about 30 feet apart. Opening out from the northernmost of these sheds are six others, extending to the north line of the plot in parallel lines 25 feet apart. At the centre of the south one of the two first mentioned is another shed extending to the south 60 feet, to the extracting room. These sheds are all 9 feet wide, 6 feet high at the eaves, peaked palm-leaf roof about a foot thick. They are high and airy, affording perfect protection from sun and rain, and are always comfortable, even in the hottest weather.

Along both sides of the sheds, just inside of the eave-lines, are the long rows of two-storey hives, painted white, 5 feet apart, and, of course, facing outward, so that the flight of the bees in no way interferes with the workmen. The ground, all sloping toward the honey-house, makes the wheeling-in of the loads of well-filled combs comparatively easy. The extractor is a six-frame reversible, of heavy galvanised iron, and delivers the honey through a large pipe on top of the centre of a broad screen, covering the top of an evaporating tank holding 8000 lbs., where the honey is freed from any little pieces of comb, &c., which may have got in by accident. From the concave bottom of this tank an iron pipe extends down the sloping ground 60 feet further, to a broad covered shed, where the honey is received directly into the hungholes of the tierces by merely turning the large faucet on the end of the pipe. Along the lower side of this harreling shed, and coming close up to it, is the roadway, which is enough lower than the floor of the shed to admit of the rolling of the filled tierces into the carts ready for transportation to the depot.

It will thus be seen that, from first to last, there is no dipping or lifting of honey required. We might go on and describe the uncapping arrangement, with their screen bottoms and troughs leading to the evaporating tank, and many other useful appliances of the large airy extracting room; but our "story" is already drawn out beyond the space we supposed necessary to tell it; so we will close by saying that everything is built substantial, ample, and yet simple, and contrasts strongly with some of the little "cluttered up" arrangements too often seen in our own country.—A. J. KING (in *The American Bee Journal*).

TRADE CATALOGUES RECEIVED.

James Yates, Underbank, Stockport.—*Catalogue of Bulbs.*
Ketten Frères, Luxembourg.—*Catalogue of Roses.*
George Bunyard & Co., Old Nurseries, Maidstone.—*Descriptive Catalogue of Fruit Trees.*
Corry, Soper, Fowler & Co.—*Trade List of Horticultural Sundries.*
Wood & Son, Wood Green, London, N.—*List of Horticultural Specialities*



* * * All correspondence should be directed either to "THE EDITOR" or to "THE PUBLISHER." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles in-

tended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

"Bosh" (D.).—We have seen the paragraph to which you call our attention, and have nothing to say against it. It is, perhaps, true. We are under the impression that we have inserted articles by the writer of it in these pages.

Mould in Manure (Guildford).—It is quite natural for manure to become white with mould if it remains long undisturbed or gets too dry. If turned occasionally and kept moist there will be no mould to interfere with the growth of Mushrooms, but one load is not sufficient for making a bed in the open air. See supplement to the fourth edition of "Mushrooms for the Million."

Brussels Sprouts (W. J.).—If you will write on one side of the paper only and send your article early in February it will be then more acceptable and generally useful. Letters on seasonable subjects from practical gardeners are readily inserted.

Grapes Decaying (One in Trouble).—No doubt the wet weather and leaky house have had much to do with the mishap, with a too low night temperature. The colder a vine is the greater is the condensation of moisture on the berries, and it is this which causes them to decay. We suspect also that the Vines are not in the best of condition, and the berries have too thin skins.

Notching Vine Roots (A. Z.).—If Vine roots are notched now, and a gritty compost, consisting of turfy loam and a large admixture of wood ashes, be placed round them they will form fresh roots this season; at least that is what we found in the case of some Vines that were improved by that process. Old Vines, such as you describe, and which cannot be lifted, usually bear better by training young rods very thinly in the summer, and not cutting them back closely at the winter's pruning. You can scarcely err by following the practice described on pages 173 and 174.

French Marigolds (William Dean).—The strain, of which you send flowers, is excellent. The blooms are compact and symmetrical, not coarse, and the colours rich and clear. They are the more remarkable as being grown in the middle of a smoky town, and the cultivator deserves praise for tending the plants so well. Their superior condition proves that French Marigolds are admirably adapted for gardens in towns and smoky districts.

Brompton Stocks and Wallflowers (T. M.).—The Stocks having been thrice transplanted ought to withstand an ordinary winter in sandy soil; still, as there is always the possibility of a severe winter occurring it is prudent to establish as many plants in pots as can be accommodated in a cold frame, or where some protection can be improvised. With a clear space between the rows of your Wallflowers the plants ought to be sufficiently hardy for passing the winter with little or no injury, but everything depends on the severity and continuance of frost. Tree leaves lightly placed amongst and over the plants afford good protection in severe weather.

Fungus on Pear Leaves (A Young Hand).—The Pear leaves sent are seriously attacked by the parasitical fungus *Roctellia cancellata*. In its early stages it may be checked with sulphur. Collect and burn all the leaves, wash the trees and wall (if they are trained to one) in winter, and take away the surface soil, adding fresh; in fact we think the roots require to be placed in fresh soil, and the site deeply drained. You do not ask for information respecting the Vines to which you allude, and which require much the same treatment to render them satisfactory.

Gardeners Leaving (Young Gardener).—In the absence of any special agreement the time for giving notice is determined by the payment of wages, and as you are paid weekly a week's notice on either side suffices to terminate an engagement, though it is often more convenient to give longer notice. We know nothing about the advertising agency you mention; but we know that there never was a time when gardeners experienced so much difficulty in procuring situations as at present, and we earnestly hope that no one will take hasty action in throwing himself out of employment who cannot afford to remain out for several months—or years.

Azalea Bed (St. Catherines).—The best soil for Azaleas is unquestionably peat, but we have had them thriving admirably in loam on the sandstone and freestone formations, and quite luxuriantly in sawdust from loose boxes in which hunters have "run" during the summer, mixed with an equal proportion of turfy loam. We have no doubt of cocoa-nut fibre refuse being an excellent material for mixing with loam for the growth of Azaleas and Rhododendrons, having a sixth of sand added, and put in 18 inches deep and made quite firm. We have also seen them luxuriating in a shallow siliceous loam overlying sand, with a good mulching each year of cowdung. The condition of your plants shows the soil to be unsuitable, and we should take it out and have 18 inches depth of peat, which is best taken from a moor where Heather grows, the top 3 or 4 inches being best, and with a goodly admixture of particles of white sand. This chopped moderately small will grow them perfectly. The brown spongy peat used for Orchids is not suitable for Azaleas. We should not cut the plants down—at least, not until they had become well established in the peat bed, and then you may cut away the stunted growths, so as to encourage stronger growths from the base, and so insure larger trusses of bloom. Hardy Azaleas in variety are not so common as they deserve to be in gardens.

Green Gage Plums Gummed (Old Subscriber).—It is generally the result of a deficiency of calcareous matter in the soil, but not always, as we have seen it occur when there has been a very vigorous growth followed by a large reduction of foliage. We think, however, in your case that it is caused by a deficiency of calcareous matter. In the autumn we should give a dressing of quicklime at the rate of a bushel per rod (30½ square yards), and point it in with a fork as deeply as can be done without injury to the roots, mixing it with the top 9 inches or a foot of the soil. A better plan would be to get some old mortar rubbish, breaking it small, and picking out any pieces of lath or wood; and removing the soil down to the roots picking some from amongst them and giving fresh, to which has been added a sixth of the mortar rubbish. If the roots are

deep they should be raised, bringing them up so that the topmost are not deeper than 3 or 4 inches when covered with soil, which also should contain the lime rubbish. Make the soil firm about the roots, and mulch the surface with short littery manure.

Planting Pinks and Violas—Burying Leaves (E. T. B.).—Pinks are best planted now, so that they may become well established before winter, and if mulched before the setting in of severe weather they will not be likely to suffer any injury from frost. Violas for spring flowering are best planted in October, or so soon afterwards as the beds or borders are cleared of their summer occupants. If you mean to bury leaves in a body with a view to form leaf mould you will prevent their decaying so quickly as if they were made into a heap above ground, kept moist, and turned over occasionally outside to inside, so as to insure and hasten decomposition.

Peach House (Aurora).—A house 12 feet wide is much the best. Narrow houses are most common because they are most economical, but they are not nearly so good as houses that will allow of trees in front trained to a trellis fixed about 15 inches from the glass and brought about two-thirds up the roof, so as to allow of trees being grown at the back. The upper part of the front trellis should be curved downward or brought down from the glass to about 3 feet, so as to admit of more light to the back wall. Ours are of the width named—12 feet. We have the trellis 15 inches from the front lights, and curved so as to cut off the otherwise sharp angle that would occur by following the lights, the trellis being taken up the roof at 15 inches from the glass for about 4 feet from the front, and the distance then gradually increased to 3 feet from the glass at 8 feet from the front of the house. This admits of light to the back wall trees. Our houses have a foot of wall above ground supported on piers of 9-inch brickwork, with 2-feet openings between to allow of the roots passing outside, stone heads covering the openings just level with the inside and outside borders. The front lights are 3 feet, and open by crank and lever movement from the bottom outwards the whole length of the houses, each house, of course, separately. The back wall is 11 feet 6 inches high to the under side of the coping, and the roof is fixed under it. At the upper part we have lights 2 feet 6 inches wide, which open by crank and lever movement. Such houses cost more than the narrow Peach cases, but have the advantage of a double set of trees—i.e., in front and against the back wall. The trees are planted inside beneath the trellis. Peaches are well grown also on trellises across the border up to the roof. A very fine house of this kind at Wilton Park was figured and described in this Journal of January 10th, 1884.

Propagating Clematis Jackmani (A Florist).—These plants can be increased by cuttings of nearly half-ripened wood in the spring of the year if inserted in sandy soil and placed until they are rooted under bell-glasses in a temperature of 50° to 55°. This, however, is not a certain method, and layering is never practised by the trade. The best, quickest, and safest method is to propagate them by means of grafting. Strong roots from any other kind must be procured during the winter and kept moist in cocoa-nut fibre refuse, sand, or any similar material until wood is ready for the scions in spring. Plants from which the wood is taken are generally wintered in cold frames and brought forward in them by keeping the frames moderately close. The young wood should be used for scions, say after it has attained 3 or 4 feet in length, and before it becomes half ripened towards the base of the shoots. Each scion should be cut off just above a pair of eyes, and the wood between the joints left to each scion should be cut wedge shape. The strong roots should be cut clean across the top, then split down the centre and the scion fitted in between. The bark of the scion and the root must be fitted together on one side and then bound into position by matting, worsted, the first being the best. One pair of eyes is sufficient for each scion. After this the grafted roots should be potted singly in 3-inch pots in sandy loam. A gentle watering should be given, and the pots plunged in a propagating case where the bottom heat ranges about 75°, and the top heat 55° to 60°. Attention must be paid to dewing them over daily, preventing the sun from striking upon them, and lifting the lights of the case. Clematises are easy to graft, but unless care is taken with them for the first few days or a week afterwards they will all go off. Union soon takes place between the stock and scion, and if they can only be kept from damping until they have reached that stage they will be perfectly safe afterwards.

Sirex gigas (C. D.).—The *Sirex gigas* is found in the north of Europe; it has been taken in England, but very rarely; it is a British species, and is sometimes taken in Scotland. It is likely to be met with in Pine forests, as the female seems to prefer that wood to deposit her eggs in. The male is considerably smaller than the female, and has no sting. The sting of the female consists of three parts—a sheath which divides into two parts or valves, and a fine instrument somewhat resembling a needle; it is with this instrument it wounds its enemies, and the sting is said to cause excruciating pain. The microscope discovers this part to be beset with a number of very minute teeth, like the edge of a saw; with this sting the creature can pierce the wood of sound trees; for we suspect it does not always deposit its eggs in such as are decayed, but rather in such as will supply the larva with nourishment when it is hatched. The eggs are laid in clusters of 200 or 300 together; they are of a pale yellow colour, about the thirtieth part of an inch in length, and shaped like a weaver's shuttle. The larva lives in the body of the tree, enlarging its habitation as it increases in size, for it never leaves the tree till it becomes a winged creature. The larva when full grown is about 1½ inch in length, and as thick as a goose quill. It is a heavy sluggish creature, almost cylindrical, the head very small, and the whole of an uniform pellucid yellowish colour. It has a small spine at the end of the body like those by which the larva of some spines are distinguished; this spine is also a striking character in the perfect *Sirex*. In the pupa the form of the winged creature is more visible than in the larva state; it is of a browner colour than the larva, and the rudiment of the sting and legs are very visible.

Plants for and Arrangement in Herbaceous Border (M. C. B.).—The roots from the Laurels will extend a considerable distance, and the heat in summer will have a drying influence on the border. About 3 feet from the background or hedge of Laurels is near enough to plant the herbaceous plants, and that distance should be allowed between the plants in the back row; the next row 2 feet from it, and 3 feet apart in the row in quincunx order; the next row 18 inches, and the plants 18 inches asunder in the row; front row 1 foot from the other, and plants 1 foot apart in the

row, and this being 1 foot from the border edge you will have a border 8 feet 6 inches wide from the Laurels to the outside of the border, and have four rows of plants. In the back row you can have *Anchusa italica*, *Bocconia cordata*, *Asphodelus ramosus*, *A. luteus*, *Campanula latifolia macrantha*, *Campanula pyramidalis* and var. *alba*, *Coreopsis lanceolata*, *Delphinium cardinale*, *Echinops ritro*, *E. spinosus*, *Eryngium pandanifolium*, *Galga officinalis alba*, *Harpallium rigidum*, *Helianthus multiflorus*, *H. multiflorus fl.-pl.*, *H. multiflorus maximus*, *Leucanthemum maximum*, *Lathyrus grandiflorus*, *L. latifolius albus*, *Lupinus arboreus*, *Monarda didyma*, *Papaver orientale*, *Pentstemon barbatus*, *Pyrethrum uliginosum*, *Spiraea Aruncus*, *Tritoma Uvaria*, *Aster versicolor*, *A. formosissimus*, *A. laevis*, *A. eriooides*, *A. novae-anglicae* and var. *ruhra*. Second row from the back:—*Achillea Ptarmica fl.-pl.*, *Aconitum japonicum*, *Alstroemeria peruviana*, *Anemone japonica*, *A. japonica alba*, *Anthericum Liliago major*, *A. Liliastrium major*, *Aquilegia chrysantha*, *Asclepias tuberosa*, *Bupthalmum salicifolium*, *Campanula grandis*, *Catananche bicolor*, *Centaurea montana* and var. *alba*, *Dictamnus Fraxinella* and var. *alba*, *Dielytra spectabilis*, *Dracocephalum Ruysschianum japonicum*, *Erigeron speciosus superbum*, *Eryngium amethystinum*, *Fuchsia Riccartoni*, *Gaillardia grandiflora*, *Geranium ibericum*, *Geum coccineum plenum*, *Gillenia trifoliata*, *Gypsophila paniculata*, *Helenium pumilum*, *Hemerocallis disticha fl.-pl.*, *H. flava*, *Hypericum triflorum*, *Lychnis chalcedonica fl.-pl.*, *Lychnis vespertina fl.-pl.*, *Malva moschata alba*, *Meconopsis nepalense*, *Rudbeckia Newmanni*, *Salvia patens*, *Scabiosa caucasica*, *Schizostylis coccinea*, *Senecio pulcher*, *Sidalcea candida*, *Sparaxis pulcherrima*, *Spiraea filipendula fl.-pl.*, *Thermopsis fabacea var. montana*, and *Verhascum phoeniceum*. Third row from the back:—*Agrostemma coronaria fl.-pl.*, *Anemone sylvestris*, *Anthericum graminifolium*, *Aquilegia coerulea*, *Cyclothra pulchellus*, *C. venustus*, *Campanula glomerata dahurica*, *C. Hendersoni*, *C. nobilis*, *C. persicifolia alba plena*, *Chrysanthemum speciosum*, *Delphinium cashmerianum*, *Dianthus Atkinsoni*, *Dielytra eximia*, *Doronicum caucasicum*, *Erodium Manescavi*, *Funkia speciosa*, *Gentiana asclepiadiacea*, *Geranium armenicum*, *G. Endressi*, *Hesperis matronalis alba plena*, *Iberis gibraltarica*, *Lychnis dioica rubra fl.-pl.*, *L. viscaria splendens plena*, *Megasea cordifolia purpurea*, *M. Stracheyi*, *Oenothera fruticosa major*, *O. speciosa*, *Papaver nudicaule* and var. *aluum*, *Polemonium Richardsoni*, *Potentilla formosa*, *Sedum spectabile*, *Solidago virgaurea nana*, *Spigelia marylandica*, *Statice latifolia*, *Stokesia cyanea*, *Thalictrum adiantifolium*, *Tradescantia virginica* and var. *alba*, *Veronica longifolia var. sub-sessilis*, and *Zauchneria californica*. Fourth or front row: *Achillea tomentosa*, *Adonis vernalis*, *Anemone apennina* and var. *alba*, *A. coronaria* and *stellata vars.*, *A. nemorosa bracteata pl.*, *A. palmata alba*, *A. stellata fulgens*, *Aquilegia glandulosa*, *Armeria plantaginea ruhra*, *Astragalus hypoglottis albus*, *Aubrietia graeca*, *Arabis alpinus*, *Callirhoe involucrata*, *Campanula grandiflora pumila*, *C. nitida* and var. *alba*, *C. carpatia*, and var. *alba*, *C. pulla*, *C. pumila* and var. *alba*, *Cheiranthus alpinus*, *Erigeron aurantiacus*, *Erythraea diffusa*, *Gentiana acaulis*, *G. verna*, *Geum montanum*, *Iberis semperflorens plena*, *Myosotis dissitiflora*, *Onosma tau-ica*, *Orobis vernus purpureus*, *Oxalis floriunda rosea*, *Phlox amena*, *P. caroliniana ovata*, *P. Nelsoni*, *P. verna*, *P. setacea var. atro-purpurea*, *The Bride*, *grandiflora*, *Perfection*, and *Vivid*, *P. frondosa*, *Primulas* in variety, *Ranunculus speciosus*, *R. amplexicaulis*, *R. anemonoides*, *R. acris fl.-pl.*, *Saxifraga Camposi*, *S. granulata fl.-pl.*, *Silene alpestris*, *Sisyrinchium grandiflorum*, *Trollius japonicus flore-pleno*, *T. americanus*, *T. europaeus*, *T. asiaticus*, and *T. napellifolius*, *Helleborus niger*, *Hepaticas*, &c. In the back row *Liliums* are displayed to great advantage, also *Hyacinthus candicans*. Between the plants in each row *Narcissus* and *Snowflakes* may be planted also in the second row; in the third *Hyacinths*, and in the front, 6 inches from the edge, *Scilla sibirica*, *Snowdrops*, *Crocuses*, and *Winter Aconite*. Any blanks or bare space we fill up in summer with *Zinnias*, *Asters*, *Stocks*, *Indian Pinks*, &c. We have also *Carnations*, *Pinks*, early *Gladioli*, *Pyrethrums*, *Paeonies*, *Potentillas*, *Picotees*, &c., interspersed with the herbaceous plants, and some more *Asters* in the second row, or *A. Amellus hessarabicus*, *A. dumosus*, *A. Shorti*; and in the front *A. alpinus*, *A. discolor*, and *A. Chapmanianus*, and with *A. pilosa*, *A. polyphyllus*, *A. tubinellus*, &c., in the back row, have flowers from an early to a late period for cutting. We have named perhaps more than you require, but some are easily omitted. In the front row we have *Pansies* and *Pinks* so as to get the right number, being a mixture of the most useful of hardy flowers, and always interesting from the dawn of spring to frost and snow. Trench the ground as deeply as the good soil allows, loosening that at the bottom of the trenches so as to allow of the free passage of water, but do not bring up any, or very little, of the inert or stubborn soil to the surface. A good dressing of manure may be given after trenching, and forked in prior to planting; and after planting afford a dressing of rather littery manure or leaf soil, placing it neatly about the plants, and an inch or two thick over the whole surface. In trenching cut off all roots within 1 foot of the Laurel hedge or screen.

Names of Fruits.—The names and addresses of senders of fruit to be named must in all cases be enclosed with the specimens, whether letters referring to the fruit are sent by post or not. The names are not necessarily required for publication, initials sufficing for that. Only six specimens can be named at once, and surplus fruits beyond that number cannot be preserved. (*Ashwell*).—Transparent Gage. (*G. S.*)—Jefferson. (*T. N.*)—Plums: 1, Jefferson; 2, Mirabelle; 3, Goliath. Apples: 4, Irish Peach; 5, Lord Suffield; 6, K-swick Codlin. We do know of a cheap hook on the subject to which you refer. (*Prunus*).—3, Victoria; 4, Diapree rouge; 5, Quetsche.

Names of Plants.—We only undertake to name species of plants, not varieties that have originated from seed and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in firm boxes. Slightly damp moss or soft green leaves form the best packing, dry cotton wool the worst. Not more than six specimens can be named at once. (*J. R.*).—1, *Inula Helenium*; 2, *Euphorbia Cyparissias*; 3, *Ophiopogon japonicus variegatus*. We do not name varieties of florists' flowers. (*H. S.*)—*Saponaria officinalis flore-pleno*. (*C. B.*).—1, *Lasiandra macrantha*; 2, *Selaginella coesia*; 3, *Polystichum capense*; 4, *Polypodium pustulatum*; 5, *Nephrodium molle*; 6, *Phlebodium aureum*. (*C. D.*)—*Achillea millefolium roseum*. (*James Harland*).—*Quercus coccinea*; *Swainsonia coronillifolia*.

COVENT GARDEN MARKET.—SEPTEMBER 15TH.
TRADE quiet, with no alteration. Supplies heavy.

FRUIT.				VEGETABLES.			
		s. d.	s. d.			s. d.	s. d.
Apples	1 sieve	1 6	4 0	Melon	each	1 0	2 0
Cherries	1 sieve	0 0	0 0	Oranges	100	6 0	12 0
Currants, Black ..	1 sieve	0 0	0 0	Peaches	per doz.	2 0	4 0
" Red	1 sieve	0 0	0 0	Pine Apples English ..	lb.	2 0	4 0
Figs	dozen	0 6	0 9	Plums	1 sieve	1 0	2 0
Grapes	lb.	0 6	3 0	St. Michael Pines ..	each	4 0	6 0
Lemons	case	10 0	15 0	Strawberries	per lb.	0 0	0 0
PLANTS IN POTS.				CUT FLOWERS.			
		s. d.	s. d.			s. d.	s. d.
Aralia Sieboldi ..	dozen	9 0	18 0	Ficus elastica ..	each	1 6	7 0
Arbor vitae (golden)	dozen	0 0	0 0	Fuchsia ..	per dozen	6 0	6 0
" (common)	dozen	6 0	12 0	Foliage Plants, var.	each	2 0	10 0
Arum Lilies	dozen	0 0	0 0	Heliotrop ..	per dozen	4 9	6 0
Bedding Plants, var.	doz.	0 0	0 0	Hydrangea ..	per dozen	6 0	12 0
Begonias	dozen	4 0	9 0	Ivy Geraniums ..	per dozen	0 0	0 0
Calceolarias ..	per dozen	3 0	6 0	Lilium auratum ..	per doz.	12 0	30 0
Cinerarias	dozen	0 0	0 0	" lancifolium	per doz.	9 0	18 0
Cockscombs ..	per dozen	3 0	4 0	" longiflorum	per doz.	0 0	0 0
Crassula	per dozen	0 0	0 0	Lobelias	per dozen	0 0	0 0
Cyperus	dozen	4 0	12 0	Marguerite Daisy ..	dozen	6 0	9 0
Dracena terminalis	dozen	30 0	60 0	Mignonette ..	per dozen	3 0	6 0
" viridis ..	dozen	12 0	24 0	Musk	per dozen	0 0	0 0
Erica, various ..	dozen	0 0	0 0	Myrtles	dozen	6 0	12 0
Euonymus, in var.	dozen	6 0	18 0	Palms, in var. ..	each	2 6	21 0
Evergreens, in var.	dozen	6 0	24 0	Pelargoniums, scarlet, doz.	3 0	6 0	6 0
Ferns, in variety ..	dozen	4 0	18 0	Pelargoniums ..	per dozen	6 0	9 0
Abutilons	12 bunches	2 0	4 0	Lily of the Valley, 12 sprays	0 0	0 0	0 0
Ageratum	12 bunches	2 0	3 0	Marguerites ..	12 bunches	2 0	6 0
Arum Lilies	12 bunches	4 0	6 0	Mignonette ..	12 bunches	1 0	3 0
Asters	12 bunches	0 3	0 6	Myosotis ..	12 bunches	1 6	3 0
Bouvardias ..	per bunch	0 6	1 0	Pelargoniums, per 12 trusses	0 9	1 0	0 0
Camellias	12 blooms	6 0	9 0	" scarlet, 12 trusses	0 3	0 6	0 0
Carnations	12 blooms	1 0	3 0	Roses	12 bunches	2 0	9 0
" 12 bunches	3 0	6 0	0 0	" (ladoor), per dozen	0 6	2 0	0 0
Chrysanthemums 12 bchs.	3 0	6 0	0 0	" Tea	dozen	0 9	1 0
" 12 bunches	1 0	3 0	0 0	" red	dozen	0 8	1 0
Coreopsis	12 bunches	2 0	4 0	" Moos ..	12 bunches	0 0	0 0
Cornflower	12 bunches	1 6	3 0	Primrose, Yellow, dozen	0 0	0 0	0 0
Dahlias	12 bunches	2 0	4 0	" bunches	0 0	0 0	0 0
Epiphyllum ..	doz. blooms	0 0	0 0	Pyrethrum ..	12 bunches	3 0	6 0
Eucharis	per dozen	2 0	4 0	Spiraea	12 sprays	0 0	0 0
Gardenias	12 blooms	2 0	4 0	Stephanotis ..	12 sprays	2 0	4 0
Gladioli	12 bunches	6 0	9 0	Stocks, various 12 bunches	3 0	6 0	0 0
Hyacinths, Roman, 12 sprays	0 0	0 0	0 0	Sunflowers ..	0 6	1 0	0 0
Iris	12 bunches	0 0	0 0	Sweet Peas ..	12 bunches	2 0	4 0
Lapageria, white, 12 blooms	2 0	4 0	0 0	Sweet Sultan ..	12 bunches	0 0	0 0
Lapageria, red ..	12 blooms	1 0	2 0	Tropaeolum ..	12 bunches	0 0	0 0
Lavender	dozen bunches	4 0	5 0	Tuberose ..	12 blooms	0 4	1 0
Lilium candidum 12 blms.	0 0	0 0	0 0	Violets	12 bunches	1 0	0 0
" longiflorum, 12 blms.	3 0	6 0	0 0	" Czar, Fr., ..	bunch	0 0	0 0



AFTER HARVEST.

HARVEST work has been brought to a speedy and, on the whole, a satisfactory conclusion, although it was begun and finished later than usual. The late spring and singular changes of weather in early summer, kept back growth so much that a late harvest became inevitable, yet when the corn was once full grown the ripening process went on with marvellous rapidity, so that on some farms Wheat was ready for the mower as soon as Winter Oats, and on others Barley was ready before Wheat. The harvest has, therefore, been an exceptionally busy one. The work went on briskly and well from the outset, the whole of the corn was saved in good condition, and thus far the labours of another year have been crowned by success.

As we sit down to write this paper in the early morning of September 8th, the sun is rising brightly in a clear sky;

calm, fair, and settled is the weather, and we have one more golden opportunity of pushing on autumn farm work under the most favourable conditions. Not a day should be lost in turning to account such fine weather, for wet October will soon be upon us, and every effort must be made to get as much work done before then as possible. Of really urgent work the sowing of *Trifolium incarnatum* came first. That is a trifling affair, for which we have only to select a clean stubble, to drill or sow the seed broadcast, and to harrow the surface sufficiently to cover the seed well. To make this matter quite plain to beginners it may be well to say that by a clean stubble we mean one that has no couch grass nor other foul perennial weeds upon it. No ploughing or stirring of the soil is required for *Trifolium incarnatum*; the soil must be precisely in that compact state in which it is left after the corn is carted off it. Sow good new seed, 30 lbs. per acre, and cover it by harrowing so that birds cannot get at it. Next to be sown, and of even more importance than *Trifolium*, is Rye for our earliest spring supply of green food for flock-folding, as well as for cattle and horses. This important crop should always be sown early in September, 3 bushels of seed per acre upon rich well-drained land, light rather than heavy. We like to have the plants robust and well established in the soil before winter, and we cannot manage this unless the soil is really in good order, and sufficiently stored with nitrogenous manure to ensure a strong quick growth from the germination of the seed. The fallacy of the dictum that nitrates must not be used in autumn is easily seen by practical men alive to the importance of robust growth in autumn-sown crops. How can a starveling seedling be expected to become a fine plant? An early crop of Rye is of especial value for folding ewes and lambs. Like all other crops it was much later than usual last spring, but it was nevertheless most useful, and the folding was managed so that the Rye was not in full ear even in the last fold. For horses Rye answers best if cut into chaff and mixed with some dry food. Mention is made of this simple fact because we have had some difficulty in having this done. To give Rye to horses as it is brought from the field without chaffing involves much waste, especially after it is in ear.

Winter Oats and Wheat may be sown as soon as the land is ready. Sow early, if possible, and if the plant becomes "winter proud" it can easily be checked by running the sheep over it. The possibility of early sowing should depend altogether upon the condition of the soil. Far better is it to sow late, or to wait till spring, than to sow in wet or foul soil. We must have a clean, dry seed bed if we would have a full crop, and we should not be satisfied with anything short of that. We must also restore the fertility of the soil by a judicious and economical application of manure to it. This has either been done by sheep-folding, by ploughing in green crops, or we shall do it with chemical manures containing well-balanced proportions of nitrogen, potash, and phosphorus, according to the condition of the soil and the requirements of each particular crop. Let us take for example some of those for the sowing of which we have now to prepare. We find that the principal manurial constituents of an average crop of an acre of Wheat in decimal parts are—of nitrogen about 60, of potash 35, and of phosphates 62. Of an acre of Oats, nitrogen 63, potash 49, and phosphates 43, so that a similar mixture would be suitable for both sorts of grain, and having regard to the low price of Wheat, Oats may prove the more profitable crop of the two. For Beans a special and more expensive mixture is required, the average crop of an acre containing of nitrogen 137 parts, of potash 113, and of phosphates 89. A half dressing of chemical manure in autumn at the time of sowing, and another half dressing in spring, answers best for grain crops. For Beans we prefer a Clover field upon which sheep have been folded, or land into which a green crop or two has been ploughed. In either case we should give a liberal dressing of chemical manure to the crop in spring.

(To be continued.)

WORK ON THE HOME FARM.

Barns are filled, the last cornrick for the season has been built, thatching of ricks has been done, and we are once more at liberty to turn our attention to ploughing and sowing. Prompt and energetic must be our efforts now to turn every hour of fine weather to account, and to do our best to get all land work well forward before winter sets in. Pigs and sheep are out upon the corn stubbles daily. After stubble feeding is over some of the inferior Barley will be threshed for the pigs, much of it being so poor in colour that we shall not attempt to sell it. Good Barley is so scarce that there is already a brisk inquiry for it, and the trade is likely to improve in the course of another month. We have had several new asphalt floors made in the barns of several tenants' farms, and some of this work is still in hand. When well done it proves very durable, and in order to insure such durability due care must be taken to make it upon a sound foundation, and to have the asphalt of a thickness suitable for the wear and tear to which it may be exposed. If heavy loads of corn are to be drawn over it 3 inches is not too thick, but half that thickness is sufficient when horses and carts are not to go upon it. The asphalt, we may explain, consists of a mixture of boiling pitch and road grit or sifted road sand. A floor an inch in thickness costs 1s. 6d. per square yard. We are anxious to have the whole of this work finished before corn-threshing becomes general, for we strongly object to the use of rick cloths on barn floors for cleaning corn upon, the trampling of the workmen being sufficient to wear out the best cloth in a season. Wheat has gone to the ricks ripe and hard, yet we advise caution in threshing, for soft grain is not a marketable commodity, and there is always some risk of it in early-threshed corn. The winter Oats upon one of our farms was so superior to any other that we had that enough of it was kept to afford a supply of seed for all our farms. It is our rule to use the best seed of all kinds we can procure, and equal care is taken to have it pure and free from weed seeds. If only seed merchants who make a speciality of choice carefully selected seed would keep down their prices within reasonable limits it would prove altogether better both for buyer and seller, for they would soon find their sales increase so fast as to prove the advantage of small profits and quick returns over high prices and long accounts.

OUR LETTER BOX.

Lime and Ferns (*Fron*d).—If by Ferns you mean the common Bracken or Brake (*Pteris aquilina*) then there need be no hesitation about using quicklime upon the surface for the destruction of liver fluke, for if the crowns of the Bracken suffer there will be plenty of growth from the creeping stems which abound just under the surface; but if the Ferns are of other species which have crowns and no creeping stems, then there would be risk of hot lime proving injurious, and probably fatal to them.

Root Crops (*Inquirer*).—If the field is a small one digging would be decidedly preferable to ploughing, because of the deeper stirring of the soil, and trenching is certainly to be recommended for Parsnips. Both the digging and trenching should be done this autumn, the surface being left as rough and open as possible. In March apply the chemical manure broadcast by hand, and work it well into the surface with harrows, and the soil will then be well stored with suitable fertilisers for the crops you mention. As you intend using only chemical manures the quantities you will require per acre are 1½ cwt. nitrate of potash, 2½ cwt. nitrate of soda, 4 cwt. steamed bone flour ground to a very fine powder, 2 cwt. ground coprolite, and 2 cwt. agricultural salt. Procure each sort of manure separately, and have them carefully and thoroughly mixed under your own supervision before using them.

Chemical Manures (*Cambs*).—Muriate of potash is cheaper to purchase than the nitrate, and is used by many excellent farmers. The relative economy of the two forms can only be determined by experiments, as their effects are not uniform on differing soils.

METEOROLOGICAL OBSERVATIONS.


CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude, 111 feet.

DATE.		9 A.M.				IN THE DAY.						RAIN.
1886. September.		Barometer at 32° and Sea Level	Hygrometer.		Direction of Wind.	Temp. of Soil at 1 foot.	Shade Temperature.		Radiation Temperature			
			Dry.	Wet.			Max.	Min.	In sun.	On grass.		
		Inches.	deg.	deg.		deg.	deg.	deg.	deg.	deg.	In	
Sunday	5	29.918	64.8	61.5	S.E.	63.4	72.8	59.3	108.3	54.1	0.028	
Monday	6	30.003	62.5	57.6	W.	62.4	71.2	54.8	112.2	49.8	0.050	
Tuesday	7	30.036	61.4	55.7	N.W.	61.8	71.2	54.7	105.7	48.2	—	
Wednesday ..	8	29.923	60.9	56.1	S.	61.2	69.7	50.3	108.3	44.4	0.013	
Thursday	9	29.928	64.4	61.4	S.E.	61.2	71.2	60.6	106.2	55.5	0.010	
Friday	10	29.7 8	65.8	61.0	S.	61.6	65.7	61.9	75.1	57.8	0.418	
Saturday	11	30.023	54.6	52.0	S.	61.2	69.4	48.8	108.4	40.9	—	
		29.934	62.1	57.9		61.7	70.3	55.5	103.5	50.2	0.528	

REMARKS.

5th.—Dull morning; generally fair, but shower in afternoon.
6th.—Bright fine day.
7th.—Rain before 2 A.M., then fine and bright.
8th.—Fine breezy morning; overcast in afternoon; fair evening.
9th.—Rain early, and again about 11 A.M.; sunshine, showers, and fresh S.W. wind afterwards.
10th.—Dull early, with strong S.S.W. wind, a thoroughly wet day, ceasing about 5 P.M.; damp evening.
11th.—Fine, bright, and fresh.
Maximum temperature much lower than in the two previous weeks, but still above the average.—G. J. SYMONS.



COMING EVENTS

23	TH	14TH SUNDAY AFTER TRINITY.
24	F	
25	S	
26	SUN	
27	M	
28	TU	
29	W	

ARRANGEMENT OF HARDY PLANTS.

STRIKING arrangements of tender plants for the adornment of our gardens during the summer months are frequently recorded; in fact, every year the most telling beds and mixtures are minutely detailed for the edification of readers who desire to carry out this style of flower gardening; but methods of arranging beds of hardy plants and those that can be raised annually from seed without much trouble are seldom given. Hardy plants have long since been recommended for beds and borders. The advocates of this plan, although many times invited to do so, have failed to submit any reasonable plan how the plants in various shaped beds can be suitably associated to make telling features in garden decoration. It will not, I think, be disputed that it is next to an impossibility to group these plants in the small peculiarly shaped geometrical flower gardens that surround many private mansions, or such as are formed in some of the public parks. These beds and flower gardens are not suitable for displaying the true character of hardy plants. For such beds the tallest growing perennials (some of which are amongst the most beautiful) are unsuitable, though many of the smaller growing Sedums, Saxifragas, and others are used with admirable effect in carpet and other beds.

The ornamentation and interest of a garden depend in a large measure upon the variety of the trees, shrubs, and plants employed; in fact, the greater the diversity in the formation of the grounds themselves and the modes of ornament adopted (provided they are in keeping with surrounding objects), the more attractive and instructive is the garden. Gardens that are year by year decorated on the same principle become monotonous. There can be change and variety sufficient to meet the wish of the most fastidious even in the decoration of flower beds with tender plants, and I do not see why these should be either ignored or despised by persons who wish to push forward their own fads and fancies. If the most ardent supporters of hardy plants would spend a few days in the public parks of London and observe the numbers that linger about the carpet beds, then notice how many in comparison stay to admire the borders of herbaceous plants, they could not fail to be impressed with the difference.

I fail to see why any system of ornamenting gardens should be condemned for any other particular system. Those who "pay the piper" have a perfect right to "choose the tune" if they desire to do so. But for the mere sake of change it is useless to condemn any system, and only a waste of time in attempting to do so. It certainly would not be so bad if those who tried to revolutionise flower gardening in this country laid down rules for the suitable grouping of hardy flowers, instead of condemning a system and offering in return no feasible alternative plan. The one mode is known to the public, the other is not, and even were they willing to follow the "hardy plant men" they are left to take their own course and arrange the plants in their beds

as they think best. Failure and disappointment for several seasons is certain to be the result before an effective method of grouping hardy plants can be arrived at. In fact, I can go further and say however long they try they will not succeed in rendering flower gardens innumerable as effective and enjoyable as they are made at present by the plan's known to the majority and cultivated for the purpose. There is ample room for both systems, and I should be sorry to see the present style of flower gardening swept away. I admire hardy plants, and many of our gardens might be rendered more beautiful by their judicious employment.

Hardy plants have unquestionably advanced in favour during the past eight or ten years, though perhaps not in many of our largest gardens, to which we are apt to look for guidance. In town and suburban gardens the value of hardy plants for yielding flowers for cutting have been recognised, and no more profitable plants could be employed for the purpose. But cottagers more than any other class must be credited for preserving these old favourite flowers. They have had no opportunity in many instances to change their plan of beautifying their little plots which they devote to flowers, but many persons who have had the chance have wandered away from this good old style for the tender plants that have filled the beds of our flower gardens for so many years. With this class and amateurs the rage for tender plants is fast dying out, and their place is being filled with a selection of the best and most showy hardy plants that answer the same purpose and are of a suitable nature for making "posies" for their friends or filling vases when they desire to cut them. For the neighbourhood of towns or in localities where the rainfall is considerably above the average, and the deposit of dew abundant, early in the season Pelargoniums and other similar plants are of little value, for they give much trouble after July when they should be in their best. Instead of flowering profusely they make strong soft growth. Carpet beds are much more effective than these; but as they fail to yield flowers for cutting, hardy plants must find a place.

The almost general plan of arranging hardy plants has been in borders on the "dotting system," and this has told somewhat against bringing them prominently into use for garden decoration. A mixed border, not of rubbish, but useful kinds, is perhaps the best, from which a supply of cut flowers can be obtained, for there is always something that is useful for the purpose. But at the same time there are always some plants "going over," and in consequence look shabby, which tells materially against this system of garden ornamentation when the surroundings are in good keeping. Gardens can be made very gay with a limited selection of plants only. What I mean is to have a dozen or a hundred good Phloxes, the same number of plants of *Anemone japonica* red and white, and an equal number of *Campanula persicifolia* and its variety *alba*, in preference to growing all the species of these plants obtainable.

Hardy plants are highly effective amongst shrubs if some such plan as the following is adopted—for instance, Delphiniums of light or dark varieties, according to the nature of the shrubs, planted not too thickly, and intermixed with *Lilium candidum*, *L. testaceum*, and *L. tigrinum*. The first will be over by the time the first or second named Lilies come into flower, and these will be succeeded by the last named. The Delphiniums, if cut down directly the flowers fade, will commence flowering again by the time the Lilies have withered. Towards the front *Gladiolus Colvilli* and *G. Colvilli* the Bride, if planted in October, will flower early in the season. Amongst these can be planted Asters for late flowering. For early flowering in the year Anemones, Narcissus, and various other plants may be employed.

The following examples will illustrate how hardy plants may be arranged to prove effective from the end of July until cut off by frost, and earlier flowering kinds can be grouped in a similar manner. The arrangements that will be given may

be represented with a background of shrubs or in large beds or borders in various parts of the pleasure grounds. The first bed or border may consist of *Helianthus multiflorus plenus* in the centre or background, surrounded with *Anemone japonica alba*, followed by a band of *A. japonica* and edged with white East Lothian Stocks. The edging for variety may consist of a variegated *Funkia* or variegated *Weigela* cut close back every spring. The last in time will become too large, but young stock is easily propagated at this season of the year in cold frames or under handlights. This bed, although gay the first year will be doubly effective the second, for the whole of the plants will increase in height and strength. Another telling arrangement can be made with *Helianthus multiflorus* or *H. rigidus* (*Harpalum rigidum*) for the back or centre, followed by *Anemone japonica alba* or *Phlox Virgo Marie*, one of the best whites, surrounded with a mixed collection of *Scabious*, edged with mixed *Asters*, say a row of tall *Chrysanthemum*-flowered next to the *Scabious*, and a row of the dwarf form of the same kind to the front. Another very effective bed or group can be formed with the bright *Phlox coccinea*, followed by *Hydrangea paniculata grandiflora* with scarlet East Lothian stocks for an edging. A fourth bed may be planted with *Fuchsia gracilis* or *F. Riccartoni* edged with a broad band of White *Asters* or a white dwarf-growing *Antirrhinum*.

A charming bed may be made with *Phlox Virgo Marie*, surrounded with *Veronica longifolia subsessilis*, and edged with *Geum coccineum*, which can be raised from seed in autumn or spring in a cold frame. A very beautiful bed or group is formed by associating *Phloxes*, such as *lilacina*, *Gloire de Nancy*, or *Countess of Rosslyn*, with *Pentstemon Morna* to the front or all round as the case may be, then a row or two of a beautiful dwarf compact-growing light kind named *Mrs. Heywood*, edged with purple East Lothian Stocks. A very telling bed for this season is *Gladiolus brechnleyensis*, with a groundwork of *Asters*, mixed colours, tall varieties, edged with a row of dwarf kinds. A very similar and beautiful bed can be had by planting *Lilium tigrinum* with a groundwork of East Lothian Stocks scarlet and white, edged with a row of purple ones, or *vice versa* as the case may be, to correspond with other beds or groups; *Phlox Alexander Mathieson*, a charming variety, surrounded with *Pentstemon Mrs. Paterson*, and edged with *Senecios* (*Double Groundsel*) raised from seed sown outside in spring forms a very telling arrangement. One that will not be despised can be formed with *Anemone japonica alba*, edged with a mixture of various coloured *Antirrhinums*. *Dahlia Glare of the Garden*, enclosed with a broad band of various coloured *Everlastings* (*Helichrysums*) with a front border of *St. John's Wort* (*Hypericum calycinum*) is very pretty. Another may be planted with *Ammobium alatum grandiflorum*, surrounded with a dark tall-growing *Antirrhinum*, edged with *Dianthus*. Other good *Pentstemons* are *Mrs. Kilgour*, *Osgood McKenzie*, *Acros*, *Sir William Forbes*, and *Lord Salisbury*, which would make charming beds. No hardy plants for massing are more beautiful than *Pentstemons*, and *Pelargoniums* by their side are insignificant. The *Hydrangea* and *Fuchsia* named also make charming beds associated with these plants.

These few examples of grouping hardy flowers are only given as a guide for those desirous of decorating their gardens with these useful lasting plants without the trouble of raising tender plants annually. Earlier displays in the season can be obtained by selecting such plants that flower and last about the same length of time in beauty. But it must be remembered that hardy plants are most beautiful when massed in quantity or employed in conjunction with shrubs.—A NORTHERNER.

EARLY APPLES.

APPLES are never in great demand in August, as other fruits are very plentiful then for tarts and dessert, but about this time and onwards the demand increases, and now the Plums are almost over the Apples are greatly valued; in fact, a supply is of more importance than at mid-winter, as then preserved fruits are more in season. Those who have a

good supply of early Apples will always find them very acceptable, as it is from these the Apple jelly is generally made, and many who make mince meat also prefer early fruit. I have frequently observed that early Apples are as a rule the most prolific, and they also bear more constantly than others. *Lock*, for instance, at *Keswick Codlin*, *Lord Suffield*, *Hawthornden*, *Manks Codlin*, and *Eckliuville Seedling*. Their failing to bear is quite an exception, and they may frequently be seen in full crop when many of the later ones are quite sterile. If all Apples were as sure fruiters as these we should hardly ever hear of a failure in the Apple crop. The varieties named are remarkable for the heavy crops they produce in the smallest gardens and the most ungenial of situations.

I ought to explain to those who are not thoroughly acquainted with these early Apples, that although they are generally designated "early," they do not become ready for use in August or September and fail to keep afterwards, but any or all of them will remain perfectly fresh and in prime condition throughout the whole of October, November, and December, and some of them, particularly the *Hawthornden*, is often as sound in January as in the autumn months. Amongst early dessert Apples *Red Astrachan* and *Worcester Pearmain* exhibit that peculiar fruitfulness and persistency in bearing a crop remarked of in the above, and the *Worcester Pearmain* is in season from now until the new year. It is often noted that some sorts of Apples succeed only in certain districts, and these are a bad class to have any dealings with; but I do not think any of your readers could point out a district where the varieties named above fail, and now that the planting season is at hand all gardeners will find it remunerative to introduce them freely.—J. MUIR.

HARDY FUCHSIAS.

THOUGH hardy *Fuchsias* are well known and frequently met with, I think it may be said that as a class they have suffered considerable neglect, which can be accounted for only by supposing that the tender varieties have absorbed a good deal of the interest and attention that should be theirs. To show some neglect it is only necessary to point out the limited range of colour to be found among them, for surely our skilful raisers could have obtained long ago the white sepals and petals and other variations of their indoor relatives, which were originated with no better material and without the intervention of parents possessing those features. But there is still perhaps a further neglect in not using these beautiful plants to the full extent of their merits as garden ornaments. It would not be difficult, I think, to find many gardens without a conspicuous bed of them, or without at least some of the most meritorious forms. It is now a good time, in this era of improving taste, when it is freely recognized that tender bedding-out plants do not include all that is necessary for the flower garden, to advance the merits of these hardy *Fuchsias*, and I propose therefore to enumerate the varieties.

Here, in the Cambridge Botanic Garden, is an old bed which, with the help of two other hardy plants suitable for contrast and relief, is equal in character, I think, to some of the combinations produced only by the aid of winter care and expense. The two other plants are *Gaura Lindheimeri* and *Oenothera macrocarpa*. The former is beautifully light and graceful, producing multitudes of white flowers on slender stems, which associate well with the sprays of red *Fuchsia*. The latter is a creeping plant with large yellow flowers, also in colour very effective in combination, and it occupies the outer circle. It would be easy no doubt to find others equally good, but these plants were used as belonging to the same natural order. I do not recommend these *Fuchsias* alone for flower garden beds, but they are beautiful almost anywhere, either on borders or as forming isolated lawn beds or specimens. Years ago I remember a long line of *Fuchsia corallina* at the foot of a low wall, and its beauty I am not likely soon to forget. Let us hope that the breaks in colour to which I have alluded may be attained before long. The following are the kinds known to be hardy, and as some may exist where the names are unknown or doubtful, I briefly describe them from my own plants growing out of doors.

A. Tube quarter of an inch long, more than one-eighth of an inch thick.

F. RICCARTONI.—Stems upright, branching; flowers about 2 inches long by $1\frac{1}{2}$ inch across the sepals; sepals spreading at right angles; corolla cylindric; stigma not large, spindle-shaped. This is one of the best as well as one of the most common. In the south-west of England and other mild parts it grows up into a shrub and is not killed in winter, but in less favoured situations it becomes herbaceous in habit. It is remarkable for bright red stems when fully exposed. It was raised from *F. globosa* crossed probably with some other variety.

F. GLOBOSA.—Stems spreading, less branched than the last, and not so tall; buds globose; flowers 2 inches long, $1\frac{1}{4}$ inch across the sepals; sepals broadly ovate, only about twice as long as broad; corolla almost cup-shaped; stigma ovoid, large. One of the most charming, distinct, and desirable. It is with me one of the dwarfest. It is said to have been raised from *F. conica*, which, however, it far surpasses. The hardiness of *F. conica* I have not tested.

B. Tube half an inch long, more than one-eighth of an inch thick.

F. CORALLINA.—Perfectly glabrous, young stems polished; habit robust; stems long and spreading, with few branches; flowers 3 inches long, 2 to 2½ inches across the sepals; sepals bright crimson, not reflexed to be at right angles with the flower; corolla purple. The dark green or reddish leaves are strong and almost leathery, ovate, tapering, or slightly rounded at the base, with red midribs about 3 inches long. This is a beautiful plant, one of the finest, and bearing the largest flowers of all. On the coast of Devon it grows against the houses as high as the eaves, but inland, not far distant, becomes herbaceous. It was raised by Mr. Pince of Exeter, and was expected to supersede *F. exoniensis*, which, however, maintained its position. *F. discolor*, I think, was probably one of the parents.

F. EXONIENSIS.—Stems pubescent, especially also the ovary and tube; habit more branching than the last, and stems rather slender; flowers not quite 3 inches long, about 2 inches broad; tube rather more than half an inch long; sepals dull red, spreading, and even recurved; corolla purplish red; leaves ovate, inclined to be cordate at the base. This beautiful and distinct kind was lost sight of by the majority of those interested in the genus till about three years ago, when it was brought to notice on the appearance of a figure of *F. corallina* under its name. It is of interest as one of the early popular Fuchsias, and, like *F. corallina*, was raised by Mr. Pince of Exeter. It has been said to be from a cross between *F. cordifolia* and *F. globosa*. There is, however, no evidence in its appearance of the former species.

F. DISCOLOR.—Stems long and spreading; flowers 2½ inches long, rather more than 2 inches across the sepals, differing from those of *F. exoniensis* by being glabrous; sepals bright red; corolla purple. The narrowly ovate leaves differ from those of *F. corallina* in their smaller size, greener colour, and softer texture. One of the largest I have measured is 2 inches long. This is considered the hardiest of the hardy Fuchsias, but it is of less beauty than the two preceding. It was raised from Patagonian seed.

C. Tube about three-eighths of an inch long, slender, scarcely, if at all, exceeding an eighth of an inch in thickness.

F. GRACILIS.—Tall, erect, and slender, more or less branching; flowers 1½ inch to 2½ inches long in the different forms, 1 to 1½ inch broad; sepals narrow and slightly curved. Under this species I am obliged to group four different forms, all, however, with the same flowers. The true *F. gracilis*, still more slender than these, with rather large ovary and tube, I do not happen to have. One form I have received from Backhouse as *F. salicifolia*, a name I do not find recorded. Its stems produce branches down to the base; the peduncles are nearly as long as the flowers, a greater length than I find in any other. Another form is very pubescent, the leaves reddish and the flowers profuse. This I call "Rufus." The next ("Free Lance") is nearly glabrous, with numerous small green leaves and rather small flowers, and branching very little. The third ("Burning Bush") is nearly glabrous, but the leaves are rather larger than those of the last, and the branches interlace to form a thicket. All these, with the exception of the first, have been known as *gracilis*, and they cannot be referred to anything that has been distinguished under a name. They are probably seed variations. All the hardy Fuchsias are referred by Mr. Hemsley to one species—viz., *F. macrostema*, but for garden purposes they are more conveniently distinguished as above. The true *F. coccinea* is not hardy; it differs from all these by having very short hairy and flat petioles. *F. recurvata* ("Bot. Mag." t. 3521) is apparently a very fine variety, and worth looking out for, as probably it exists in some collection.—R. IRWIN LYNCH.

NOTES ON GRAPES AT THE EDINBURGH SHOW.

For beauty of finish some bunches were perfection, notably Mr. McKelvie's Muscats, which were of a deep golden colour and without spot or blemish. The whole of the Grapes exhibited by Mr. McKelvie proved him to be a first-rate cultivator. Such varieties as Alnwick Seedling, Alicante, Gros Guillaume, and Gros Colman were shown by others in what may be called perfection of finish as far as concerned appearance; but if the question of taste comes in, then certainly we cannot call them "perfectly finished," as they would still require some time before being in good condition for the dinner table. However, as late Grapes will always (most likely) be shown before they are really at their best for eating, we may say that some of the samples in Edinburgh might be called A1 in regard to finish. Allowance can be made for the fact that time alone is needed to develop the edible qualities, as other evidences of "finish" go far to assure us that in due time they will also be A1 in their various classes in regard to dessert qualities, though some of them have a standard of perfection in that respect which is not particularly high.

Gros Maroc was shown fine in colour and bloom, and it is really a very handsome Grape. It colours more easily and quickly than Gros Colman, and its fine berry will insure its being pretty largely grown by those who think more of appearance than taste, as certainly it cannot be called high class in regard to the latter quality.

Barboursa (Gros Guillaume) maintained its character for being a

handsome-bunched variety, and though the size of berry was much behind Colman and Gros Maroc it still presented a very fine appearance.

Madresfield Court in some cases was wanting in finish, though there were some fine samples shown. Lady Downe's was wonderfully well coloured, but not particularly striking in regard to either size of bunch or berry. That fine-flavoured Grape Muscat Hamburgh was well shown, some fine bunches well finished being staged. Gros Colman was, as a rule, wanting in high colour and bloom, but a noticeable exception to this was the bunch shown by Mr. Jeffrey, Craigcleuch, Langholm. It was highly coloured and well bloomed. Mrs. Pince showed its peculiarity of not colouring well at the footstalk, some fine bunches suffering in appearance from this. It is sometimes seen thoroughly well coloured, but more often not. It is a pity, as the quality is good, its distinct Muscat flavour being a great recommendation for a late black Grape.

Duke of Buccleuch was shown by several exhibitors in very good style; in most cases the bunches were not very large, but berries were good, colour fair, but not so fine as has been seen before. No signs of cracking were visible, the bunches being compact and firm. Messrs. Thomson and Sons exhibited a fine basket of "The Duke," a little behind in colour but otherwise good. They also showed a basket of Muscats well up in colour and good in bunch and berry. Duchess of Buccleuch was shown in considerable quantity, and in several instances the bunches were very large and finely coloured. One bunch would weigh about 6 lbs. and was beautifully finished. Another bunch would be nearly 5 lbs., if not over that. It was, however, deficient in colour, as often happens. "The Duchess" carried the prizes in the competition for the best flavoured white, several bunches of it being shown in that class.

Chasselas Napoleon, a handsome white Grape not so much grown as it should be, was shown in grand condition by Mr. Ramsay, Fordel. Its qualities are by no means inferior, it fruits freely and keeps well into the winter when well ripened, though sometimes it cracks and is unsatisfactory. Mrs. Pearson was shown fine in bunch and berry, though a little longer time was needed to improve the colour. This Grape seems a useful variety, though not of the best for quality. Many finely coloured samples of Golden Hamburgh were shown. Its colour is pretty, but its quality and flavour are poor. There were very good examples of other varieties of Grapes, and there were also some very poor exhibits that would have been better kept in the background.—VISITOR.

CHRYSANTHEMUMS AND THEIR CULTURE.

(Continued from page 243.)

JUDGING CHRYSANTHEMUMS.

I HAVE much pleasure in incorporating in my series of chapters on the Chrysanthemum the following notes on judging, with which I have been favoured by Mr. J. WRIGHT, of the *Journal of Horticulture*, who has had great experience in the work, and shared in awarding the twenty-five-guinea cups that I have had the fortune to win in excellent competition; and it is gratifying to feel that my able opponents have borne willing testimony to the justice of the awards on the several occasions.

NOTES ON JUDGING.—Chrysanthemum shows may be said to form a brilliant close to the floral year. They are the last and brightest of exhibitions, and appear to be constantly increasing in number, extent, quality, and popularity. At no other shows are visitors more numerous, and especially more critical, and for no cut flowers are there so many substantial prizes offered as for the great November favourite. For these reasons the question of judging is of paramount importance. The blooms are grown to be judged, and cultivators strive to produce them in the best possible condition, whether they are placed in public competition or arranged to form home exhibitions. Many of these are highly meritorious, and the public are thoughtfully invited to share in the enjoyment of the owners of the collections. These are "judged" unofficially, but judged nevertheless, and it is a consciousness of this fact that stimulates growers to excel in the culture of the plants and blooms. The root and mainspring of this commendable spirit of emulation is traceable to the public displays where man competes with man in friendly rivalry for the coveted prizes.

It is obviously a matter of vital moment that these prizes be rightly awarded, both as an act of justice to individuals and as indicating a standard of excellence for the guidance of those cultivators who have still "something to learn," and these, it may be confidently stated, are in a considerable majority. A prize, then, wrongly adjudged is something more than an act of injustice to an individual, for it amounts to setting up a wrong standard of value, which is a public misfortune. An example will render the matter clearer. Several stands of incurred flowers are placed in competition for a silver cup. Those in one stand range from 5 to 6 or more inches in diameter, and 2 or 2½ inches deep; the florets are broad, though some of them are not particularly fresh, but the blooms almost cover the board. Those in the competing stand range from 4 to 5 inches in diameter, but are 3 inches or more deep; the florets may not be quite so broad as the others, but are faultlessly disposed, and the blooms fresh and firm. Yet the prize is given to the former because of their size and "weight;" but the latter term is a misnomer, for if the whole were weighed the so-called small and "light" blooms would be the heavier because of their solidity. By such an award hollowness and roughness, which are really defects, are recognised as virtues, and cultivators are invited to perpetuate those defects if they hope to win a silver

cup. Such a mistake as the one cited, therefore, means much more than the loss of a cup to an individual, for it represents the seal of authority stamped not on a true but a false standard of excellence, and the inexperienced are thereby guided along the wrong path.

A perfect *Chrysanthemum* bloom must embody several qualities—namely, size, depth, solidity, breadth of petal, finish, freshness, colour. That is the order in which they are placed by Mr. Molyneux. In practice the qualities are grouped somewhat in this way: the judges take into consideration size, with symmetry, solidity, and freshness; breadth, substance, and colour of florets, with the general finish of the blooms. The question of size is not determined by the circumference alone, for depth is never overlooked, or ought not to be, and the nearer the depth approaches the diameter of a bloom the more meritorious it is in point of "build." The presence or the absence of those qualities are perceived at a glance by the trained eyes of experienced adjudicators, and the value of each bloom can be determined in a moment and expressed in "points." Judges must, furthermore, be acquainted with the character of each variety and its capacity, so to speak. It is not possible, for instance, for a "little Cherub" to occupy as much space as a "big Empress," but that is not a sufficient reason that the latter should always receive a greater number of points than the former. The exact reverse would occur if the small variety were better of its kind than the large one. That is the real question to determine, and to enable the actual merits of the blooms to be appraised the judges must have an ideal bloom or perfect example of every variety that may be under examination in their "mind's eye" when engaged in their work. When all other qualities are apparent size carries the day, but if accompanied with roughness, hollowness, or dinginess, mere bulk fails to secure for the bloom a high position, and a full, fresh, solid, bright, and well-finished medium-sized bloom often wins five points when a considerably larger example, but otherwise defective, only scores three or four. When a prize is offered for the "champion bloom" in a show, it is very seldom indeed that the largest example is selected. The honour usually falls to one approaching it in size, but possessing other qualities that the bigger one lacks. The points to aim at, then, in producing a perfect bloom are the greatest size combined with the highest quality attainable, so that the bloom when staged is in the most "perfect phase of its possible beauty." If an incurved *Chrysanthemum* bloom in the acme of its freshness is anything over 5 inches in diameter and $4\frac{1}{2}$ inches deep can be thrown across a room and caught like a cricket ball, yet still retain its contour, it is not far from being perfect. Blooms are not, of course, judged in that way, but the simile is introduced to impress on cultivators the importance of solidity.

Mr. Newton, of the Inner Temple Gardens, London, has defined a good bloom as follows:—"It must possess symmetry—that is, excellence of form, all the parts of the flower being duly balanced; it must possess firmness—that is, density of petals, each possessing sufficient substance to retain it in the desired position; it must possess colour and freshness—that is, the bright colours should be as bright as possible, and the light flowers clear and pure. Now we come to size. On this point I would say the larger the bloom is, provided it possesses all the above properties, the better. Of course, I mean size of bloom in relation to quality. For instance, a very large and loose bloom, with its consequent roughness, I should not deem equal to a bloom somewhat smaller, yet solid, bright, and smooth." This is in complete accord with the above description of a superior bloom, and in no practical sense differs from the enumeration of "qualities" by Mr. Molyneux.

As to the method of judging, this in close competition must be by points. There is no other way in which justice can be done except by lucky guessing, nor the decisions, if questioned, defended. When 25-guinea cups are at stake there must be no guessing in the matter, but absolute certainty of the accuracy of the awards must be arrived at in a systematic manner, founded on the critical examination of every bloom, and registering its merits; and if that is requisite in the case of valuable challenge cups it must of necessity be equally so when smaller prizes are at stake. Justice is not to be measured by money. It is as dear to the poor man as the rich, to the winner of a 5s. prize as to one of five times £5 in value, and the same method should be adopted, and the same care exercised, no matter what the value of the prizes may be. And, as a matter of fact, more time is often spent in awarding the prizes in a minor class than in one for which all the floral world is "waiting for the verdict." It is equally true also that judges are often much longer in deciding on the second and third prizes in a "big cup" class than in awarding the premier prize. This is not mentioned in the sense of praising men who want no praise, but to let second and third prizewinners and exhibitors in small or "local" classes know that the mere "value" of the prizes is never thought about by adjudicators of standing who officiate at the leading shows, and they would not be worthy of the trust reposed in them if it were.

In the rules formulated by the National Rose Society for the guidance of judges we find the following—"Judging shall be by points. Three points shall be given for the best blooms, two for mediums, one for those not so good, but not bad enough to cut out, and an extra point for a very superior bloom." And again, "When stands are equal in respect of blooms judges shall proceed to consider the general evenness, variety, arrangement, and setting up, the boxes being placed side by side and in the same light for that purpose." Those "instructions" are applicable to judging *Chrysanthemums*, subject to one very important alteration. "Three points," with an occasional "extra" thrown in, are quite inadequate as a maximum number for a perfect *Chrysanthemum* bloom, for the simple reason that it is not possible to group the blooms into three defined orders of merit. Not less than six points should be allowed for

perfect blooms, as then the slightly differing gradations in merit of the others can be much better expressed than when three points only are allowed as a maximum. Even when the larger numbers are taken as a basis two stands of blooms occasionally "point up" equal, then an extra point is sought for in evenness, colour, or arrangement. And, further, judges are often in doubt as to whether a bloom should have, say, three or four points—that is, they feel that three scarcely does it justice, while it is hardly worth four. What then? They usually "strain a point," and enter four, hearing the entry in mind, and doing the same in a case of doubt in respect to a bloom in the competing stand. That is judging by compromise, and not on a fixed scientific principle. To arrive at a true estimate of merit there should be two denominators—points and marks, twelve marks making one point, just as twelve pence make one shilling, which is easy enough to remember, and clear and simple enough in reckoning. If a bloom is not worth six points, yet five scarcely does it justice, why not enter it at 5.6, the six representing marks or half a point? Similarly we may find the true value of the next 5.9, its neighbour 5.3, and another in the row 5.6. Suppose these represent the back row in a stand of twelve blooms, we have a total of 22 points, the 24 marks making 2 points. If points alone were relied on the first bloom would probably be awarded 6, the second 6, the third 5, and the fourth 6, or a total of 23 points, one point being gained not by the merits of the blooms, but the fault of the system. If one point can be gained in four blooms six can obviously be gained (or lost) in a stand of twenty-four, which is certainly not a pleasant contingency; and it is suggested that in all cases in which the relative merits of the competing stands are not clearly shown by one denominator that two should be employed, and the chances of a mistake occurring would then be reduced to a minimum.

It does not follow that "point" judging should be adopted throughout a show. Common sense must be exercised in this matter. In many classes the distinctions between the competing stands are manifest at a glance, and it would be a waste of time to examine the blooms individually; but where the competition is at all close the value of each bloom should be noted down and the added numbers will be the verdict. Nor is the process a slow one. Judges often spend twice the time in marching backwards and forwards, balancing the blooms in the different stands (and not infrequently getting confused in the work) that would be necessary for "pointing" them systematically. Good judges will determine the value of the blooms almost as quickly as the figures can be put down, and a stand of 24 is often completed in three minutes. When this method is resorted to the blooms should be "taken" from left to right in each row, first completing the back row, then coming back to the second and front lines respectively. These should be done in all the competing stands in which "pointing" is necessary before any of the rows of figures are added up. The totals are found in a few moments, and the work is done. If the press reporters, as most of them do, take down the names of the varieties in the same order in which the blooms are judged, the value of every one can be seen on comparing them with the judges' figures, and thus these officials are fortified in case their decisions should be questioned; and it may safely be said that in the event of revision the original verdict of experienced adjudicators stands in ninety-nine cases out of a hundred. It is not assumed that the best of judges are immaculate, but it is a fact that if an error occurs it can usually be traced to hurried action through delay in staging, leaving not much more than half the allotted time for the completion of the work. In that event they must either "rush through" the collections too quickly, or be hemmed in by a crowd of visitors. In either case it would be little short of a miracle if every award were absolutely correct, as it should be; and if a mistake occurs under those circumstances the responsibility cannot wholly rest with the judges, but at least a large share must be borne by the officials of the show in failing to carry out the conditions of the schedule. In this respect a well-merited word of recognition must be accorded the directorate of the Kingston Show where everything is invariably in readiness at the appointed time, and the proceedings are conducted like clock-work.

It is very important that exhibitors exercise great care in naming their blooms, or duplicates may be accidentally inserted. In that case the stands will almost certainly be disqualified, for careful adjudicators are in the habit of satisfying themselves that they are acting in accordance with the schedule. That is their plain duty, and they will do it however painful it may be to them to rule splendid stands "out of competition." One mistake is quite sufficient in a class, and no judges can be expected to knowingly make another, as they must do if they ignore the conditions that are published for the guidance of all.

In view of the practice of offering prizes for twelve blooms in eight varieties, twenty-four blooms in eighteen varieties, or forty-eight blooms in thirty-six varieties, awards have occasionally been made in favour of exhibitors staging the greatest number of varieties, while the blooms in the competing stands, in which there were necessarily duplicates, were, on that account, much superior. Such verdicts are not sound. The prizes are given, or ought to be, for the best blooms, and if in a class described as "twenty-four blooms in eighteen varieties" an exhibitor stages the stipulated number of varieties (eighteen), and his twenty-four blooms are better than his opponent's in twenty-four varieties, the latter cannot be justly adjudged the prize, simply because he has exceeded the limitation. So long as an exhibitor meets all the stipulated conditions he does all that is required, and the merits of the blooms, not the number beyond the limit, should be considered by the judges; indeed, in a class worded exactly as quoted, stands that exceed either the number of blooms or of varieties should be disqualified, just as collections of fruit or vegetables are disqualified that contain a greater number of dishes or varieties than

are named in the schedule, for if it is right to disqualify in one case it seems difficult to understand how it can be wrong in the other. If the stipulation were for "twenty-four blooms in not less than eighteen varieties" the judges could not disqualify if there were more than the minimum number, as it is implied that more may be staged, but the merits of the blooms alone should determine the awards. The framers of schedules cannot be too precise in the wording of the classes, for when a sentence is capable of more than one interpretation neither exhibitors nor judges know exactly what to do to be right.—J. W.

My experience of judging, which is not slight, and according to numerous invitations may increase considerably, enables me to appreciate the soundness of the above remarks in every particular. As an exhibitor I have been accustomed to examine carefully the relative merits of competing stands, and am convinced that in close competition the only way in which justice can be insured is by "pointing" the blooms; and I am further convinced that occasions arise when one denominator is not sufficient for gauging with exactitude the merits of some of the examples, therefore I am strongly of opinion when stands "point up" nearly equal in the ordinary way that they should be examined again, and their merits recorded in the manner suggested. As in the balancing of accounts pence must be included as well as shillings, so in ascertaining the exact value of stands of Chrysanthemum blooms that approach each other in merit, the "marks," that bear the same proportion to points that pence do to shillings ought not to be ignored. We occasionally find that judges, when in a difficulty in respect to two collections, find relief in awarding equal prizes; but this cannot be done when a cup or other article of value has to be adjudicated, and I suspect that it is no more likely for two stands of blooms to be staged absolutely equal in merit, or with not a mark of difference, than that two exhibitors shall appear without any dissimilarity between them. There is a difference in the blooms, and that difference should be found and expressed. This can be done in the manner suggested, and I cannot imagine it can be accomplished so well in any other way. Nothing is more easy than judging some classes: it is close competition that tests the capacity of experts, and as it is impossible to foretell how severe the contest may be, skilled and independent adjudicators who have reputations to maintain should be provided to officiate at shows, and their names published in the schedules, good judging being not less important than liberal prizes in establishing public confidence in Chrysanthemum societies.—E. MOLYNEUX.

(To be continued.)

HEATING BY HOT WATER.

[Read before the Members of the Preston and Fulwood Floral and Horticultural Society, August 7th.]

(Continued from page 248.)

HORIZONTAL TUBULAR BOILERS.—The "Red Rose" boiler is a new one, and has been the outcome of the inventive genius of Mr. Joseph Witherspoon, Red Rose Vineries, Chester-le-Street, Durham. It is described as a horizontal tubular which is formed with a

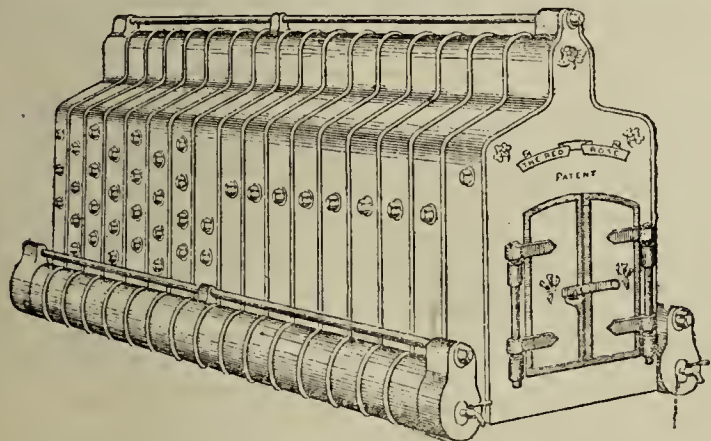


Fig. 38.

number of cast sections; the number of these sections vary according to the amount of piping to be heated. It is a tubular saddle boiler and possesses great heating power, for the whole of the heat produced by the fuel must be brought into direct contact with the heating surface of the boiler. There are no flues to be choked or stopped by soot, as is the case with flued saddles, in which the soot acts as a non-conductor of heat unless the flues are cleaned daily. The boiler, as seen by Fig. 38, has a waterway back and front. The sections are braced together by means of wrought iron rods. No heat can be lost, for one of the sections acts as a break, the same as in a terminal end saddle boiler, which compels the flame,

after striking the top of the boiler, to pass into the combustion chamber beyond. This chamber is full of cross tubes. From amongst these the smoke must pass out at the base. The soot box can be made any size to last one or ten years, according to its size and the material used for fuel. The soot chamber is formed by digging a hole in the ground below the cross tubes. If one of the sections fail the connecting rods should be unscrewed, and also the connections provided for uniting the boiler and flow pipe. When

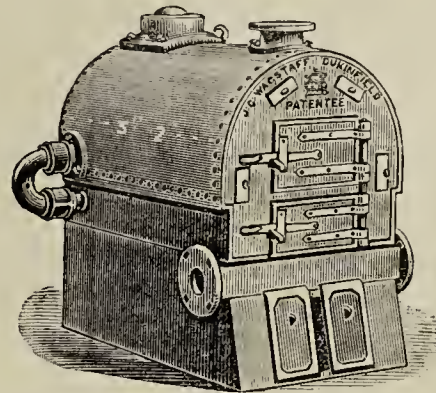


Fig. 39.

this has been done the back can be drawn to allow room for the removal of the broken section. The remaining sections can be pushed up, and when screwed together again the boiler is complete. A small addition, however, is needed to the brick flue by making the boiler one section shorter, and also a few inches of pipe from the boiler to the flow pipe. The sections are connected with india-rubber rings, but these do not come in contact with the fire. The return pipe is connected with the back of the water bars, close to the terminal section. No bricks are required in setting the boiler except for it to stand upon to form the ashpit, the soot box, the flue from it, and the chimney. No heat is lost by radiation when the boiler is placed inside the structure to be heated, which may

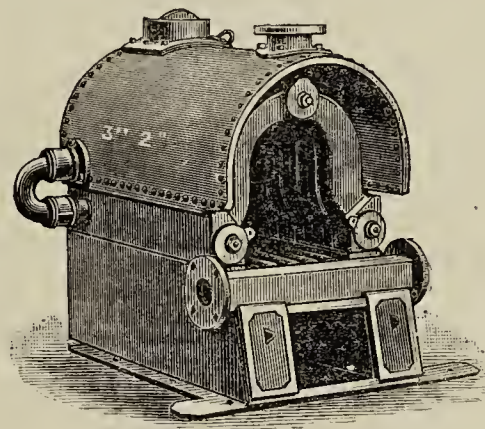


Fig. 40

with safety be done. Anyone, by paying a visit to the Red Rose Vineries, can see the boiler at work in them, and splendid well-finished Grapes hanging just above it. It may be well to state that when the boiler is placed in such a position the fire and all the stoking should be done outside. This boiler is very quick in action, economical in fuel, and will burn any kind. It appears to be well adapted for churches and public buildings where a quick heating boiler is needed. No sinking in the fixture of this boiler is required, and this is a great advantage in wet localities, and also for the horticultural trade, to whom the sinking of a stokehole is a serious item.

Mr. J. G. Wagstaff, Alma Iron Works, Dukinfield, Manchester, has a very similar boiler to the above, which is a saddle in form, as represented by Fig. 39. The tubes, which are in sections, are V-shaped, and therefore expose a large amount of heating surface to the fire. This boiler can be incased with brickwork or rendered portable by the addition of a saddle over the tubes, as shown in Fig. 40. The inner tubular boiler having a corrugated surface and waterway back presents three times as much heating surface to direct action as the common saddle of the same size. The plain outer saddle, owing to the flues passing between the tubes on each side of the inner boiler, also receives fairly direct action; thus the whole of the boiler internally is direct heating surface. A good draught can always be insured, as horizontal fluing is avoided. The tubular

water bars are separately connected, and can be removed without removing the boiler. The return pipe can be connected with the boiler instead of the tubular bars, and plain cast fire bars used if they are preferred. The whole of the surface of the boiler can be freed from soot in a few minutes from the soot boxes at the front. Two doors, it will be observed, are arranged to the front of the boiler, the lower one for cleaning and clinkering, and the higher one for feeding.

The engravings represent the boiler as it worked in the contest at Liverpool, and it is clear that when filled with fuel it will keep the pipes hot and last for at least twelve hours. The fire was banked at 8 P.M., and at 8 A.M. the following morning the temperature of the water in the flow was 104°, and in the return 100°, and the fire was a good one. This is a slow-combustion boiler as well as a quick heating one. It can be set without a single brick, as was the case at Liverpool. Boilers that require no sinking or costly brickwork in setting them are certain to be in demand in the future.

There are other boilers of a very similar make in the market—for instance, those of Messrs. Richardson & Co., Darlington, and Messrs. Staveland & Todd, London. These boilers have been illustrated in the *Journal of Horticulture*, and are not left out on the present occasion because they are inferior or less worthy than any that may be figured or described. There are numerous boilers that cannot be mentioned which are good, choice, and capable of doing their work well. The selection of a boiler is very much a matter of taste, which, in many instances, entirely depends upon the price.—W. BARDNEY.

(To be continued.)

TRENCHED v. UNTRENCHED SOIL.

MR. IGGULDEN'S reply to "A Kentish Gardener's" query on the above-mentioned topic is a most instructive and interesting one, and was, no doubt, looked forward to with much interest by many readers of this *Journal*. Mr. Iggulden keeps to the principles which he has advanced on more than one occasion in the pages of the *Journal of Horticulture*, and no doubt he is fully justified in so doing, seeing that he has given it good trials in different parts of the garden under his charge. As one who is acquainted with the garden under notice, I am able to state that the soil is of such a character as to require great forethought and patience, so as to obtain the best results at all seasons of the year. Trenching has advantages as well as disadvantages. Some soils can and are improved thereby, while others are often injured by the practice. Trenching has been carried out by gardeners, perhaps, from the earliest date on record, and doubtless will continue for years to come; yet I think, with Mr. Iggulden, that it would often be best left undone. Part of the garden here was trenched during the past winter; Peas and Potatoes were the crops planted thereon. Neither crop showed any signs of improvement to justify the cause of trenching, the latter being carried out simply as an experiment. The best crop of Peas obtained this season were from ground well manured and deeply dug only, the previous crop being late Broccoli, and from these sowings we are gathering good Peas daily at the present time. Some were sown in trenches dug two spades in width and prepared the same as for Celery, but the produce was not equal to those grown in ground that was prepared in the ordinary way. Possibly the method would have answered much better if we had had time to keep them well watered. Our soil is of a light sandy nature about from 18 inches to 2 feet deep, resting on a bed of sandy clay, and is well drained. The ground dries wonderfully quickly—in fact, too quickly for growing plants to hold their own during such tropical weather as was experienced during July of the present year. Mulching has to be strictly attended to with us, otherwise Peas as well as other crops would not prove satisfactory. Straw litter fresh from the stables we use for Runner Beans and Peas; short grass from the mowing machine is freely used for Celery, Onions, Carrots and Vegetable Marrows, Tomatoes against walls outdoors, &c.; the latter is applied almost weekly during the earlier part of the season.

It is a singular fact that Lettuces and Kidney Beans in many instances produce heavier crops on ridges between Celery trenches than when grown in any other position, notwithstanding under these conditions no manure is given and the ground left unmoved, except 2 or 3 inches on the surface, which is thrown out of the trenches. We have this season had much heavier crops of these Beans on Celery ridges than on ground that has been dug and manured, the plants, too, growing with unusual vigour in spite of their apparently unfavourable elevation and the long-continued spell of dry weather at the time when the plants were in actual growth.—W. S.

I WAS pleased to see Mr. Iggulden has altered his opinion about trenching sufficiently to admit that it is beneficial on some soils. It would seem by Mr. Iggulden's letter that the soil at Marston is far too rich when trenched, as it grows Carrots and Parsnips too large to be serviceable. I wish I lived a little nearer to Mr. Iggulden, that I might see some of his vegetables. I have seen some of them at exhibitions that were well worthy of first honours; but I suppose these would be grown on untrenched ground, and not on the different pieces of ground that he has trenched each season. There may be some soils which are not improved by

trenching, but I have not had charge of such myself. I have seen soils that were the worse for being trenched, and that were in an unworkable condition for a long time. On one piece in particular that I knew of, which had not been known to be trenched before, a spit of stiff subsoil was brought to the surface which was quite unfit for sowing seeds on the first year. Had this been bastard-trenched and at the same time leaves, ashes, or old soil from the potting bench worked in with the bottom trench the following season, or each season, a small portion of the second spit might be brought to the surface with much benefit, as it would gradually increase the depth of soil, making it more suitable for vegetables to root into.

With regard to trenches for Peas, mine were placed out about Christmas time in the same way as for Celery, a heavy coating of manure being dug in, and we have never missed a day (excepting three days in July when my employers were away) without sending Peas into the house since the beginning of July up to this date (September 17th), and some are now getting too old for table use, and if good weather continue I hope to have sufficient to send in daily for at least another fortnight. With me, Peas have continued unusually prolific this year, while last year they were the reverse. I may add that we have had company staying here nearly the whole of the time Peas have been in season, and they have many times been sent in twice a day. I may be wrong, but I attribute my success to growing them in trenches prepared in winter.—J. L. B.

I DO not agree with the surface cultivation advocated by Mr. Iggulden. A heavy soil is not likely to benefit by deep cultivation unless it is drained. I am practising on a clay soil that has been drained, and I always bastard-trench for anything I wish to grow particularly well. I can assert that it benefits the crop it is intended for, and succeeding crops too. If Mr. Iggulden will examine the Lettuces, &c., on the ridges between Celery trenches he will find the roots have penetrated the undug soil to the bottom, and I believe their luxuriance is caused by the double depth of fertile soil. Few gardeners are allowed to treat a kitchen garden in the manner "F. H., Cobham," described in the former discussion; but if I had charge of an undrained garden with a sour clay soil, I would first drain it, then bastard-trench it, and dig into the bottom spit ashes, rubbish heap, road scrapings, lime, or anything likely to make it work better, and by thus letting the water out and the air in the depth of fertile soil would be doubled in a few years, and it would be against scientific and practical teaching if the crops were not benefited by such treatment.—A. L. G.

HECKFIELD.

GARDENERS who are in the habit of visiting these fine gardens, which are most picture-quely situated five miles from Winchfield station, commanding such extensive views in the county of Hants, always find much to interest them at all seasons of the year. The general "keep" of the whole place is so good that one feels almost inclined to envy the method by which such a vast amount of work is accomplished, and this without any great bustle and excitement. The different details are so carefully "mapped" out beforehand that everything works like clockwork. It is no exaggeration to say that this is one of the best kept places in the country; scarcely a weed can be found anywhere. And this is not all, the crops in every department are excellent. Nowhere can such a varied assortment of bedding be found in a private place. True, the natural advantages of the place are all in its favour—pure air, excellent shelter from winds, and a free-working soil. Space will not allow of a full description of the garden, but I wish to record a few salient points which I noted during a recent short stay. The extent to which Chrysanthemum culture has been taken up here would astonish those persons who have heard Mr. Wildsmith speak in not too favourable terms of the "big bloom" method of growing these plants, but knowing that a "convert" was being made at Heckfield to the present method of producing first-class blooms, I was not surprised to find as fine a collection of plants as can be seen. The varieties include the best. The plants are tall, strong, and well ripened, possessing foliage of that thick leathery description which is so essential to success. The buds are most of them "taken" at the right time for producing fine blooms and prolonging the show of flowers at home. I shall be much surprised if blooms from these plants do not figure prominently at some of the autumn shows. There is a magnificent crop of Peaches on the walls outside, the trees being clean, showing clearly the benefits of constant and correct attention to their requirements. Pears are not quite such a heavy crop as is customary here, but still there is what many would call a good show. The trees are in the best condition as regards health, holding out promises of what they will do another year.

Two long borders, one on each side of the central path in the kitchen garden, are very attractive just now. A capital hedge, about 5 feet high, of Cupressus Lawsoniana forms the background; alongside this and trained flat to the hedge is a row of single Dahlias; below are yellow and white Marguerites, a few Pelargoniums, and some Ageratums; then the front, a space of about 2 feet wide, is planted in panels of Antennaria mentosissima, Alternantheras, and Begonia Princess Beatrice, a new variety sent out by Messrs. Sutton & Sons, and a capital badger, growing dwarf and flowering in profusion; the flowers are white, with age they assume a salmon tinge. Other panels are filled with a new Iresine, bright in colour, which originated with Mr. Coleman at Eastnor Castle Gardens. It is a sport from I. Lindeni, and is likely to be a valuable acquisition to the flower garden. The centre of the panels was occupied with neatly grown plants of Cupressus Lawsoniana erecta viridis and Retinospora

plumosa aurea, the groundwork to all being *Herniaria glabra*, the whole arrangement being particularly pleasing. Flower beds and baskets on the terrace were charming, the arrangement being varied yet harmonious, the object being to alter the style of planting each year, not following any strict rules of fashion. The result is a most interesting mass of plants most effectively disposed. All the beds have raised edges 4 inches high, and planted with *Herniaria glabra*, which contrasts well with all surroundings. Sutton's Miniature Sunflower was used largely for the decoration of the large stone baskets, mixed single and white Cactus Dahlias, Castor Oil Plants, &c. The centres of several beds were planted with Fuchsias. Charming in name, and charming, too, they were, flowering profusely, hanging in a graceful manner, the carpet under them being Verbena Purple King, which contrasted well with the Fuchsias above. Two oblong beds were planted in quite a suggestive manner, as follows:—Two single-stemmed plants of *Abutilon Thompsoni* and one of *Ricinus Gibsoni* were placed among a centre arrangement of *Pelargonium Henry Jacoby* in one and Waltham Seedling in the other; next to this was a broad band of yellow *Calceolarias* profusely blooming; next was a band 6 inches wide of *Coleus Verschaffelti*, then a squarely clipped band 3 inches wide of Silver Thyme, next to this was the raised edging of *Herniaria glabra*. These beds lent colour to their neighbours, which were of a duller hue. In some of the beds were planted *Rudbeckia Newmanii* and *Lilium auratum*. As these were blooming freely the effect was grand with other foliage plants. The houses were all characterised by extreme neatness. Strawberries in pots were very strong and promise a future good crop of fruit.

The noble owner, Lord Eversley, now in his ninety-third year, is very active both in mind and body, taking a personal interest in all matters connected with the garden, even to the details of planting the flower beds, the result being a grand combination between the employer and his excellent gardener, Mr. Wildsmith, who is most courteous to all visitors.—E. MOLYNEUX.

PEAR CULTURE AT CARDIFF CASTLE.

MR. PETTIGREW, The Castle Gardens, Cardiff, has through the *Journal* furnished us with the method he adopts in Pear culture. During my visit to Cardiff on the 17th inst. I took the opportunity of visiting these gardens for the first time, where, with Mr. Pettigrew's able foreman, Mr. Smith, I made my way to the fruit garden, and I at once came to the conclusion to endorse Mr. Pettigrew's writing on Pear culture. I read in the *Journal of Horticulture*, April 28th, 1885, page 337, that the fruit trees at the Castle Gardens were not so hard pruned as generally seen, plenty of young wood being allowed to remain, and this I found to be true. In the upper garden the south wall is completely occupied with Pear trees, all creditably trained fan shape and in fine health, bearing, as it were, ropes of fine Pears from top to bottom of the branches. Amongst them were some extremely fine Duchesse d'Angoulême, such as are seldom seen, both in size and quantity, all other varieties being almost equally good. In the lower garden is the fruit room, and here I was astonished to see such a fine lot of Pears, Pitmaston Duchess and Glou Morceau were very large; they are the finest Pears that I have ever seen. I may mention the fruit trees are in fine healthy condition, with strong robust shoots beautifully spurred, showing they receive the attention which they require.—T. TEBBY.

ORCHIDS.

WITH this I send you the following Orchids for your approbation—*Miltonia Clowesi*, of which we have a plant now in bloom with five spikes, two of the spikes have eight flowers each; *Odontoglossum bictonense*, and two varieties of *O. b. album*; *Coeloglyne Massangeana*, this spike has been in flower for a fortnight; *Cattleya velutina*, we have had several in flower this season, but this we consider the best variety that has opened yet; *Cypripedium Ashburtoniae*, a twin-flowered spike; *Cypripedium Lawrenceanum*, a twin-flowered spike; *Cypripedium Veitchii*; *Cypripedium insigne Maulei*; *Cypripedium insigne album marginatum*; *Laelia præstans*, cut from a plant on a block having a number of flowers. We have also now in flower twenty-six plants of *Oncidium Jonesianum*, some of the plants bearing three and four spikes, with ten to fourteen flowers on a spike.—H. SIMPKINS, Gardener to R. J. Measures, Esq., Cambridge Lodge, Flodden Road, Camberwell.

[A very attractive assortment of very well-grown flowers, but withered by being packed in dry paper instead of soft green leaves.]

A REMINISCENCE OF DONALD BEATON.

If the late Mr. Donald Beaton had lived and practised in the present decade he would have been obliged to considerably modify his ideas as to the value of the Tomato for dessert purposes, but I question if he would not still hold the same opinion concerning Melons. I am not the fortunate possessor of many back numbers of the *Journal of Horticulture*, or, as it was called in the days of Mr. Beaton, *The Cottage Gardener*, and am indebted to a friend for the extracts I am about to comment on.

Mr. Beaton, in his report of the Crystal Palace Fruit Show held on September 7th, 1869, in criticising a dinner-table decoration of fruit and flowers, remarked (see *The Cottage Gardener*, September 13th, page 349), "Such devices are not out of place on dessert tables, but there were two fundamental errors in this fruit device which would keep it out of company who appreciate what is appropriate—Grapes, Melons, Peaches, Pears, Plums, Nectarines, Currants, and *Tomatoes!* Who could conceive

the idea of putting raw Tomatoes in a dessert before a civilised being? The next fault was in principle. The Melon was higher up in the cone indicating that a false cone of stuffing was inside, which is never done in actual desserts."

Further down the same column he goes on to say, "Melons were an enormous trial for the Judges; every Melon was cut and tasted, and if some of the tasters do not get the cholera through it, it will be a mercy. There were scores of them, but I only took a few notes of the smaller kinds. If I were a duke, or a marquis, or even a baron, I would not tolerate a Melon in my dining room that was over 2 lbs. weight. There is nothing so thoroughly vulgar as putting a large Melon before gentility. But as long as vulgar people are happy, societies must encourage fruit to their taste; Tomatoes and large Melons to wit."

Only a short time ago there were plenty ready to ridicule me for suggesting that Tomatoes be tasted at exhibitions, with the idea that we should then get at the best sorts and not have to award the prizes to turnip monstrosities; and although this may not be altogether practicable, I still think, in spite of Donald Beaton and his notions that they are not fit for civilised beings, that the time has arrived when a class should be provided for dessert varieties. It is really surprising how many there are who eat uncooked Tomatoes with as much avidity as a schoolboy will an Apple. For instance, in our long midnight ride to the Liverpool meeting of the Royal Horticultural Society, out of six in the same compartment only one refused an uncooked Tomato, of which one of our party had a good supply in his bag, by way of supplying a little needful moisture. That single civilised being was myself, as, if the truth must be told, I did not then care for raw Tomatoes unless as a salad. Since then I felt that the taste must be cultivated, and raw Tomatoes are now eaten as readily as other fruit. A good Tomato is really fit for the dessert of those classes to which Mr. Beaton alluded, but I do not assert many of them yet admit them to the dessert table, but the time will come for even that. As has often been remarked, the love for Tomatoes must be acquired, and why so many dislike them at first is because they commence with shop fruit instead of having them fresh from the plant. To form an adequate idea of their taste they should be eaten when just ripe and quite firm. If kept till they are soft they become flat and to a certain extent insipid. At one time I was under the impression that the solid fruit, or those with the fewest seeds, of which Trophy is a good type, were the best, and many seem to be still of this opinion, but such are really not the best for eating raw, and the preference should be given to the small Orange-feld or medium-sized fruit of Carter's Perfection. The latter for my choice, and altogether it is the handsomest and one of the best flavoured sorts in cultivation, being good alike for dessert or salad purposes.

Melons would appear to vary considerably in quality in olden times as much as they do now, and if the truth must be told we have not made much progress either as regards improving the varieties or in their cultivation. Instead of the old dung frames we have now well-heated houses, and the larger the Melons are grown the better pleased is the cultivator. Strange to say, the small frame-grown fruit very frequently gain the awards at shows, being found altogether superior to the over-fed and poor-flavoured giants grown under presumably more favourable circumstances. We may procure seeds from what source we will, including the fruit we have awarded the first prize, but, after all, everything depends upon the treatment given the plants. For a fruit to be of first-class flavour it must be cut from a healthy plant, whereas more than half the fruits shown are from dried or dying plants. Well might Mr. Beaton anticipate a cholera attack. I would much rather taste fifty Tomatoes than half that number of Melons at a show.

Mr. Beaton's ideas would appear to be much at variance with those of the Fruit Committee of the Royal Horticultural Society, for did not "The Goodwood" Melon gain a first-class certificate on August 14th, 1883? The fruit of this novelty which gained the approbation of the Committee weighed 21 lbs., and if they had been content to award a cultural commendation, as first suggested, it would have received its due; but, fortunately or unfortunately, as the case may be, it was cut and found to be good to eat; hence the award. But who grows it? or who has exhibited it in a presentable condition? If it had existed in the time of Mr. Donald Beaton it might have done well for the centre of the cone he described, and obviated the use of any padding; but what would he have said of this monstrosity for table purposes? He thought a Melon ought not to weigh more than 2 lbs; the Fruit Committee like them ten times larger. Our tastes with regard to raw Tomatoes are materially changed, and it may be large Melons are not such vulgarities as they were considered thirty years ago.—W. IGGULDEN.

HOW NOT TO GROW ROSES.

"FAIRPLAY'S" communication on page 248 is either a burlesque, or he is one of those terrors to nurserymen who expect hours of attention, which means money, in consideration of giving a trifling order—a fitting companion to ladies who appear to delight in making a draper's assistant display everything in a shop, and then coolly depart, as nothing "quite suits" her. We are, "if possible," to find a nurseryman whose fame rests more on his "pertinacity as an advertiser than his skill as a horticulturist." "Fairplay" may well say "if possible," for the great Rose and general nurserymen, without an exception, are justly famed for their skill. As to the "cosmos of insect pests" on Roses in winter, will your correspondent be good enough to say what they are? I have no interest in defending nurserymen. I am a buyer and not a seller, and have, during a period of forty years, dealt with many firms, meeting with uniform courtesy from all. It is, on the face of it, absurd to suppose that any firm could long conduct

business in the manner indicated. "Fairplay" has possibly been hunting after "cheap" goods, the "culls" or remnants, and at remnant prices, then expecting to have the best in the catalogue. There are numbers of "never-satisfied" people in the world, and when some of these are seen to visit nurseries the attendants get out of their way in the best way they can; but they act very differently with persons who are not known and notorious for their time-wasting and bawling proclivities, that are so repellant to straightforward business men. I hope "Fairplay" is not one of these nurserymen's tormentors, but that his extraordinary production on the page quoted was intended as a burlesque.—FAIRDEALER.



WE are informed that it has been arranged that the ANNUAL PROVINCIAL SHOW OF THE NATIONAL ROSE SOCIETY shall take place at Edinburgh in 1887, in connection with the Royal Caledonian Horticultural Society's Show and Exhibition on July 13th.

— AT an ordinary meeting of the WAKEFIELD PAXTON SOCIETY, held on Saturday evening, the 18th inst., Mr. J. A. Mann, gardener to Dr. Kendell of Heath, gave a thoroughly practical essay on the cultivation of the Melon. The essayist is well known in the district as a Melon raiser and prizetaker, and his remarks on the subject were generally confirmed by most of the members. A good discussion ensued, having especial reference to the fertilisation and other details in the cultivation. A hearty vote of thanks was passed to the essayist on the motion of Mr. B. Waler, and seconded by Mr. H. Oxley. At the meeting preceding the above the subject for discussion was the Pea, when about twenty varieties were placed on the table, which, considering the late period, were in good condition. Of that number, Pontefract Castle, Sutton's Satisfaction, Walker's Perpetual Bearer, Telephone, and Veitch's Sturdy were amongst those most liked. It was generally agreed that the season had not been favourable for the Pea crop in this locality. The Society continues to hold meetings every week, when essays and lectures are given, and are generally well attended. Other towns also appear to be following in the lead of this Society, the latest formation being a Paxton Society at Bradford.

— AN extremely interesting BOTANICAL ADDRESS was recently delivered before the British Association in the biology section by Mr. William Carruthers, F.R.S. The principal object of this lecture was apparently to compare certain species of plants now known with the earliest preserved specimens or with fossils to prove that there has been less variation than might be expected. After giving a long list of plants Mr. Carruthers remarked:—"The various physical conditions which necessarily affected these species in their diffusion over such large areas of the earth's surface in the course of, say, 250,000 years, should have led to the production of many varieties, but the uniform testimony of the remains of this considerable pre-glacial flora, as far as the materials admit of comparison, is that no appreciable change has taken place."

— SOME experiments in TOBACCO CULTIVATION have been undertaken by Sir Edward Birkbeck at Horstead in Norfolk. A number of varieties, the seeds of which were obtained from Kew, have been tried, and up to the present the Virginian variety seems to have given the most satisfaction. One plot is situated in the kitchen garden, alongside a bed of Asparagus; another plot is at the end of an open and exposed field on which Barley was growing. There had been no special cultivation of either plot for this particular plant, which had to take its chance in the kitchen garden with the vegetables for culinary use, and in the field with the Barley crop. But it may be inferred that the land in each case was in "good heart," though not in such excellent condition as is necessary for Tobacco cultivation, which demands high farming. The seeds were sown in a hotbed, where the plants grew rapidly, and were pricked out in shallow wooden boxes, to be kept for a time in a lower temperature. It was not till the middle of June, because of the cold nights, which would be fatal to them, that the plants could be set out in the open. It is intended to carry out the experiments on a more extensive scale another year, and it is proposed to employ an engine house for drying and "curing" the leaf.

— MR. W. B. HARTLAND of Cork sends us blooms of his "Old

Dahlia," which he terms "a remnant of past days in the garden of Old Ireland." It is one of the Cactus type, with rich scarlet maroon florets much reflexed. It was at first thought to be the same as Cochineal, but is evidently distinct, and remarkable for its fine colour.

— THE LEEDS PAXTON SOCIETY have issued the following programme of essays for the third quarter, 1886. The meetings are held weekly at the Society's room, Greyhound Inn, Vicar Lane, every Saturday evening, commencing at 7.30 P.M. September 25th, half-yearly meeting, election of officers, &c.; October 2nd, "The Maidenhair Fern and its Uses," Mr. W. Grix, gardener to Sir Jas. Kitson, Bart., Gledbow; October 16th, "Notes on Gardening: Some of its Difficulties," Mr. J. Newman, gardener to Mrs. F. W. Kitson, Burley Hill; October 30th, "Cultivation of the Pleione," Mr. P. Massey, gardener to T. A. Titley, Esq., Gledhow; November 13th, "General Principles of Gardening," Mr. Jas. Inman, Chapel-Allerton; November 27th, "Mushroom Culture," Mr. J. Bolton, gardener to — Walker, Esq., Hambleton House, Shadwell; December 11th, "Critique on Molyneux's Chrysanthemum Culture," Mr. T. Garnett, gardener to Miss Mackie, St. John's House, Wakefield. Mr. George Hemming is the Honorary Secretary.

— "D., Deal," writes—"As I have always maintained that ROSE MADAME GABRIEL LUIZET is a true Hybrid Perpetual, I am rejoiced that this season has so fully confirmed my view. Some time ago I mentioned to a very good rosarian that I had some autumn blooms. 'Umph,' was his reply, 'I am glad of it,' as much as to say, 'all a fluke,' but now I have to add that no Rose in my garden has been so full of bloom as this. Every shoot has flowered, and the blooms have been, owing to this lovely September, clean and beautiful. In a note I have just had from that good rosarian, Mr. Geo. Mount of Canterbury, he says, 'I do not know if your Gabriel Luizet has been good this autumn; mine have been very good indeed. I have cut several blooms from my garden at Harbledown fit for exhibition. I have thought, perhaps, you would like to know, as there is no doubt of its being a good autumn bloomer.' I do not know whether the experience of others is the same as ours, but I think it is very satisfactory that this most lovely Rose has made good its claim to be thoroughly a Hybrid Perpetual."

— IT is with unfeigned regret that we announce the death of a very old correspondent of this Journal who was well known to our readers under the signature of "C. P. P." The REV. CHARLES PIERREPONT PEACH, vicar of Appleton-le-Street, in Yorksire, died on the 17th inst., at the comparatively early age of fifty-seven, after protracted suffering. There was no one of our correspondents whose views on horticultural matters had more weight, for there was an originality and freshness about the way in which Mr. Peach presented them that they always attracted attention, and frequently produced lively and genial discussion. No one could be more ardent in the pursuit of his favourite recreation. It mattered not whether the subject was Roses, herbaceous plants, fruit trees, Vines, or stove plants, he was ever in the front with them all, and as a horticultural engineer and chemist there were few to surpass him. He was a very estimable man, and greatly beloved.

— SEPTEMBER is not a month in which we expect to find many ORCHIDS IN FLOWER, and it is therefore surprising to see such a pretty display as that provided in the first house of the Orchid range in Messrs. J. Veitch & Sons' Chelsea nursery. The leading feature there is *Odontoglossum grande*, a handsome old species that when well grown can be scarcely equalled in brightness, especially the finer varieties. About a dozen plants, with from three to eighteen large flowers each, are arranged with numerous plants of the bright purple-flowered *Dendrobium bigibbum* and the free yellow *Oncidium tigrinum*, the effect being very pleasing, as sufficient graceful foliage plants are employed. For a late summer display these Orchids are invaluable, particularly *O. grande*. In other houses there are several other beautiful species, varieties, and hybrids in flower, such as the well-known *Dendrobium formosum*, the golden *D. chrysanthum*, a grandly coloured *Lælia elegans Turneri*, a fine form of *Cattleya Acklandiae*, the distinct and beautiful *Dendrobium Phalenopsis* which is seldom seen, with the valuable and handsome *Aerides Lawrencei* and many others.

— A DISTINCT novelty, named *ODONTOGLOSSUM HARRYANUM*, is also now in flower. It has undulated sepals and petals about half an inch broad, barred with brown, the petals with some purplish spots at the base. The lip is large, scoop-shaped, 1½ inch long, yellow, veined

with purple, and with a yellowish crest in the centre. The pseudo-bulbs are flat, oval, and ribbed. It is a striking form, quite distinct from other *Odontoglossums*.

— IN the entrance corridor of the same nursery *LAPAGERIAS* are flowering abundantly, the long wreath-like shoots of red or white flowers associating very beautifully trained over the roof, walls, and pillars. The stock of young *Lapageria alba* plants is also a large one, and they are looking extremely well, clean, healthy specimens from one to two years old. Some of the former are flowering, but the latter are found the most satisfactory, and the largest flowers are generally produced by vigorous two-year-old plants.

— THE bright sunny weather of the past two months has assisted in maturing the *AMARYLLIS BULBS* in an exceptional manner, and such finely ripened samples give the best promise of a highly satisfactory display next season. In about a month's time the foliage will be cut off, but already there are some varieties so far advanced that it could be spared without any loss. There is much difference in this respect in the varieties, some being nearly always growing.

— THE extensive stock of *HYBRID RHODODENDRONS* is still yielding meritorious novelties, three now in flower being *Queen of Yellows*, clear yellow with red stamens, *Distinction*, pale rosy salmon, and *Rose Perfection*, soft clear rose, twelve blooms in a truss. They are all single varieties, but the flowers are of good size and shape.

— **GARDENING APPOINTMENT.**—Mr. Alfred Bishop, late head gardener to Mrs. Davidson of Abbotsford Park, Burgess Hill, Sussex (which he left through the death of his employer), has succeeded Mr. Wickson as head gardener to R. Burrell, Esq., Westley Hall, Bury St. Edmunds. Mr. Alfred Bishop is the eldest son of Mr. W. Bishop, nurseryman, &c., Hemsby, and late head gardener of Bylaugh Park, East Dereham, Norfolk.

— A CORRESPONDENT states that "the celebrated traveller and botanist, Dr. Schweinfurth, who has just gone to Berlin to attend the Colonial Congress, has lectured there on the *KEW BOTANICAL GARDENS*, which he characterised as the finest in the world. Kew, he said, is the Botanical Foreign Office for all nations, for it is the centre of all botanical news from all parts of the world."

— WE are informed that the *LEWISHAM AND DISTRICT FLORAL SOCIETY* will hold their annual *Chrysanthemum Show* at the Ladywell Public Baths, Lewisham, on November 12th and 13th. Mr. Henry Drake is the Honorary Secretary.

— MR. E. J. LOWE, Shirenewton Hall, Chepstow, has sent us a box of interesting *SEEDLING FLOWERS*, and remarks:—"I enclose some blooms of hybrids; first, *Anthemis tinctoria* × *Chrysanthemum atratum*, producing a large buff yellow bloom and having the habit of *Anthemis tinctoria* (the seed bearer), this I have named *Sulphur Giant*. A single pointed-petal *Dahlia* (several blooms) named *Vishnu*, the most distinct and showy *Dahlia* that I know, and most prolific bloomer. A bloom of a single *Dahlia* (white with yellow centre) also very showy, named *Metis*. Hybrid *Mimulus* (hardy). *M. leucis* × *M. cashmerianus* (of gardens), by far the most brilliant hybrid that has yet been raised. These I enclose for your inspection, they have been seen by many florists and botanists and greatly admired." The seedlings are distinct and beautiful, the *Mimulus* being uncommonly rich in colour and varied in markings.

— MR. W. PIERCY, 89, West Road, Forest Hill, S.E., sends us three home-raised *SEEDLING CHRYSANTHEMUMS* which have been obtained from seed saved on the Continent. The varieties are named *Blanche Columbe*, pale sulphury white of medium size and free; *Piercy's Seedling*, bronzy yellow, bright and neat; *Pierre Verfiel*, bronzy red. They are somewhat like others of the early-flowering type, but the tints are good and clear.

— "THE OCCUPATION OF A FARMER," writes "W.," "does not in all cases seem to be a profitable one, if many cases occur like the one brought to light in a morning contemporary. A farmer of Spalding, which is about ninety miles from London, sends to one of the principal markets four tons of early Potatoes. They were sold for £5. The railway company first had their share, which in this case came to £3 7s. 10d.; then the commission agent £1 10s.; while the farmer, the producer, obtained the remaining 2s. 2d." In another case it was mentioned that a firm was sending goods to Liverpool at a cost of 27s. per ton, while

similar goods were being sent to much more distant parts of the continent for 11s. per ton.

— MR. CHARLES PAYNE, gardener to E. W. Nix, Esq., The Gardens, Frashurst, Dorking, writes, "It may be of interest to numerous readers of the *Journal of Horticulture* to know that we have a plant of *LAPAGERIA ALBA* growing in an intermediate house, and bearing a spray between 6 and 7 feet long, with 111 flowers and buds on it. Seventy of the flowers are now open. It is flowering at every leaf at the top of the shoot. The plant is in a pot, and has been flowering for several months."

— A CUCUMBER GROWER FOR SEED desires to state for the benefit of others that he has this year devoted a house to the growing of seed of *Telegraph* for the trade, and that he adopted the new or non-ventilating system. His house, over 100 feet long and 13 feet wide was a sight; fine straight fruit hanging on both sides of the roof of the span as thick as they well could, and 18 inches to 2 feet long, made a splendid picture photographed. He goes on to say, "I had to smear the glass thinly in hot weather with whitening brought to the consistency of limewash with skim milk to keep the foliage from scorching, which it did most in the afternoon, from four to six o'clock. The flowers were carefully impregnated, the fruit swelled well, thickening and knobbing fairly well, but ripened tardily. As they turned yellow they were cut and placed in a pit in the full sun, and the fruit matured very much more quickly than under the shaded roof. I had a quantity of seed fully one-third less, however, than when I grew the plants under an unshaded roof and with ventilation on the old system, and what makes the most difference is that as I sell the seed by the ounce and it does not weigh heavy my profits are proportionately reduced. The seed seems to have good germinating power, but whether the grower will find the plants as satisfactory as the seeds are to the seedsmen is matter of experience. What is the experience of others on this subject? I had the house full of Tomatoes one year, and they paid better than Cucumbers, but this year I expected something extra from such a remarkably grand show of fruit."

— "A TRAVELLER" sends the following note:—"I have just returned from a VISIT TO ST. NEOTS, and in a stroll whilst there through the grounds of Mr. Isaac Hall at Eynesbury, who farms 150 acres, have seen a large field of Onions, followed by Parsley sown with the Onions, acres of Cucumbers, Wood's Ridge, not much smaller patches of Vegetable Marrows, enough to make anyone wonder where they all go to, acres of Runner Beans with a bevy of damsels at work gathering the pods, and was told Royal Ashleaf Potatoes had been grown between the rows of runners; Brussels Sprouts in breadths larger than most kitchen gardens, sturdy plants beginning to button; equally large expanses of Red Beet and Parsnips, acres of Jerusalem Artichokes, with pickling Onions and Red Cabbage enough, anyone would think, to supply a town. But this is only a little of what is grown about St. Neots. Mr. John Hall, Eaton Socon, farms 250 acres; the Messrs. Marshall perhaps more, to say nothing of smaller growers, and that the gardening stretches right away to Sandy and Biggleswade—a veritable land of vegetables of the highest quality, grown principally for and consumed in the great centres of industry of the west and north. Scarcely a weed is to be seen, nothing but high and clean culture."

— **ORANGES FROM AUSTRALIA.**—The experimental consignments from Sydney and Adelaide have been sufficiently successful to afford encouraging prospects of a large trade, and the British public, with this addition to existing supplies, will be able to obtain Oranges all the year round. The enterprise which has achieved this result originated with a colonial bank, and the first consignment, per the John Elder, came to hand from Adelaide in April. It consisted of 1000 cases, and succeeding steamships have brought several more, in lots of 400 and less. The Oranges are not conveyed in the refrigerating chambers, but as ordinary cargo, except that care is taken to allow the air free access to them. They are packed in cases, the majority of which hold 160, although some have contained 600. Each Orange is wrapped in paper, and on the whole the cases when opened are in fair condition. July and August are expected to be the two months when the Australian Oranges will be in chief demand. Those that have been sold in this country already have not all been kept in London, the first consignment having been purchased on the behalf of country dealers, but the greater portion of the later cargoes found its way to the Colonial and Indian Exhibition, where the fruits are being

retailed at 1d., 1½d., and 2d. each. The Oranges are highly commended for their flavour and marketable qualities, but they are badly picked and indifferently sorted. Some cases, judging from their appearance, would almost justify the belief that they had been placed under the trees and the Oranges roughly shaken into them, large and small indiscriminately. A scheme is now being arranged to export English fruit to Australia, the intention being to despatch three successive consignments of Grapes and Plums to arrive in the Australian spring. At present the refrigerating chambers used for the storage of mutton are almost empty on the voyage out, and the fruit will, if possible, be sent in these chambers.

— MR. A. B. SEYMOUR, botanist in the Illinois State Laboratory of Natural History, contributes to the "American Florist" a description and figures of the PALM FUNGUS, *GRAPHIOLA PHENICIS*, which has proved troublesome to many growers of Palms. "It was first known on the Date Palm, but is not confined to that. It occurs also on the Sugar Palm and others. It is a true parasite, and is the cause of disease in the Palms on which it is found. It originates from minute spores of a certain kind, which are so minute and light that they float in the air even more easily than ordinary dust. Falling upon the Palm leaf under favourable circumstances, a spore germinates and grows. The growth makes its way into the tissues of the leaf, and, like other parasitic fungi, produces long slender filaments, which make their way in various directions through the tissues. After some time it produces its fruit or spores, and then it is first seen on the outside of the leaf. All this growth takes place at the expense of the Palm. Besides this the green colouring matter of the leaf is more or less injured or destroyed, and thus the power of the plant to provide a new supply of food is impaired. The most effective remedy is to cut out and burn all diseased parts. If this is not desirable it may be beneficial to wash with a weak solution of carbolic acid or a kerosene emulsion, or to dust with sulphur. Rubbing the leaves with a wet rag before applying the remedy would remove large numbers of the spores, which could then be destroyed."

— IN the course of a recent lecture on BRITISH NORTH BORNEO, Mr. E. J. Wells, C.E., remarked that North Borneo, although the youngest of our colonies, is a most important one both commercially and strategically, lying as it does on the high road between China and Australia, and also within five days' steam of both Singapore and Hong Kong. The lecturer considered North Borneo had a great future. The Chinese followed slowly but surely the treading of European civilisation, and as soon as the demand for labour arose so soon would the stream of emigration set in. The area was about 31,000 square miles, with a sea coast of about 600 miles. The soil and climate were good, well suited for the cultivation of sugar, tobacco, &c. The revenue for 1881 was 20,207 dols.; in 1885, 110,256 dols.; the exports had advanced from 145,000 dols. in 1881 to 387,000 dols. in 1885. North Borneo, he said, might be considered one of the grand timber yards of the world. Sarawak had an area of about 40,000 square miles, and a population of about 300,000, composed of mixed races, and had a coast line of about 400 miles. The revenue in 1880 was 229,718 dols.; in 1884 it was 274,269 dols. Imports and exports in 1881 were 3,666,902 dols.; in 1884, 3,631,974 dols. Labuan, an island on the north-west coast of Borneo, had an area of 30 square miles. It was ceded to Great Britain in the year 1846, and occupied in 1848. The total population of the island was about 6000 of all nationalities.

— THE monthly meeting of the BELGIAN HORTICULTURISTS was held in Ghent on September 13th, the following being present:—MM. Desmet-Duvivier, Em. De Cock, Ad. Rosseel, B. Spae, A. Van Geert père, Edm. Vervae, Ph. Blancaert, and Jules Closion of the firm of J. Makoy and Co., M. Ch. Van. Geert of Antwerp presided, and M. Jules Hye acted as Secretary. Certificates of merit were awarded for *Vanda Sanderiana* from M. James Bray; *Curmera Kegeljeani*, from MM. Jacob Makoy & Co.; and *Davallia tenuifolia Veitchi*, from the same firm; *Alocasia Lindenii*, *Cupania denticulata*, and *Aphelandra Macedoana*, from M. Linden. Cultural certificates were awarded for *Alocasia Van Houttei* and *Sphaerogyne imperialis*, from M. Aug. Van Geert fils.; *Miltonia Clowesi*, from M. Desmet-Duvivier, and *Cypripedium Parishii*, from MM. Vervae and Co. Honourable mention was also adjudged for *Pinanga spectabilis* and *Adiantum Weigandi*, from MM. Jacob Makoy & Co.; *Crotou Alicaë*, from M. Aug. Van Geert fils.; *Ardisia velutina*, from M. Linden; *Lælia euspatha*, *Bolca pulvinaris*, and *Cattleya Dowiana*, from MM. Vervae & Co.; *Cattleya Eldorado*, from M. Linden; *Asplenium dimorphum*, from M. Bern. Spae.

— "D., Deal," sends the following respecting "AMATEURS":—"I am sorry that I did not make myself sufficiently plain to 'Saxoring' or his friends, and I doubt whether I can enlighten him farther. Let me, however, say that the term 'employing a regular gardener,' or 'regularly employing a gardener,' has been interpreted in so many ways that it lays the door open to many evasions. Does it mean employing anyone who is a gardener by profession? Is a person who has a man who acts in the capacity of groom and gardener (as is so often the case) considered to employ a regular gardener? Does another who has a gardener in for three or four days a week come under the same description? Is another who has a labourer in to do all the work which he himself superintends, employing a gardener? These are some of the ways in which the term has been interpreted. I give no judgment on the matter, but only indicate what a very risky thing it is to bring such a term into a schedule."

— THE *San Francisco Chronicle* says that in distributing WATER FOR IRRIGATING PURPOSES IN SOUTHERN CALIFORNIA, it is calculated that 1 inch of water will suffice for ten acres. One thousand dollars per inch is the average value affixed to the title to water, or at the rate of 100 dollars per acre, although sales are daily made at from 150 to 400 dollars per acre, said lands being absolutely worthless without water. At this figure the value of water in San Diego county aggregates the enormous sum of 1,300,000,000 dollars; while the water of Los Angeles county where the valuation is 3000 dollars per inch, is worth 2,400,000,000 dollars.

— DR. T. H. HOSKINS, writing upon the RELATION OF STOCK TO SCION in *Vicks' Magazine*, proceeds as follows:—"A more curious matter still is, that by grafting 'in-and-in' upon the same tree the change produced can be much intensified. By 'in-and-in' grafting, I mean grafting a scion upon the limb of a tree, then next year taking a scion from the graft and grafting it into the same tree; next year take a scion from the second graft and insert it in the same tree. This may be repeated again and again, the result being that you will have all grades between the original fruit of the graft and the original fruit of the stock. To be quite successful there must be difference enough between the stock and first scion to start a change. But by in-and-in grafting the effect is often so marked from one year's graft to the next, and so on, as to make a positive demonstration of what I call 'graft crossing.' R. Dibble, of Brantford, Conn., in June, 1873, first called my attention to this method of intensification of the graft cross by grafting in-and-in. He wrote:—'About forty years ago my father had a large and thrifty Apple tree which bore exceedingly sour fruit. I helped him graft a part of it from a very sweet Apple standing near. The second year we grafted another part from the scions set the previous year. The third year we grafted the rest of the tree from the second setting. These grafts produced three different kinds of fruit, all differing from each of the original stocks. The first strongly resembled the sweet Apple, but were only moderately sweet. The second were slightly striped, like the sour Apple, and neither sweet nor sour, while the third were clearly striped, and a moderately sour Apple.' In grafting common Apples upon Siberian Crabs the cross is so violent that these effects are very often seen, and as this is done to a considerable extent in my neighbourhood, I have frequent opportunities of seeing what remarkable changes are thus effected in size, colour, and quality of fruit."

THE PROPAGATION OF THE CHOICER ALPINES.

WHEN we happen to meet a good collection of alpine plants in private gardens how seldom do we find the rarer types of alpine vegetation represented by more than a solitary specimen, which has been grown for many years, and no attempt probably to increase it in any way. Too valuable it may be deemed perhaps to attempt to divide some solitary rarity lest the operation be unsuccessful, while on the other hand the experience of the would-be operator may be insufficient to attempt it in any other way. The number of alpine plants which will not submit to the care and patience of the propagator are very few indeed, since most of them, if not all, may be increased either by cuttings or divisions, and not a few by seeds. I do not wish it to be understood that I am an advocate of mutilation, and that I would prefer to see half a dozen microscopic scraps than a fair-sized specimen of any given alpine. On the other hand, I delight to see and rejoice in good examples of these plants as much perhaps and probably more than those who find the height of their ambition in some fine greenhouse plant 4 or 6 feet diameter. What I am desirous should be gathered from these observations is, instead of being satisfied with solitary examples of choice alpine, to attempt to increase them in such a way that small colonies or groups may be formed of them either in the border or the rockery border, or the rock garden proper, and when this is accomplished, though the after progress be slow, there will remain the satisfaction of having formed a good stock.

ANDROSACES.—Setting aside preliminaries I will briefly endeavour to give my experience in regard to some of the so-called fastidious alpine, and how they may be propagated with success. To my mind, the work of the propagator is such as anyone can enjoy, not because it is easy and simple—which, luckily, in many departments of gardening it really is, but because it is often beset and surrounded with difficulties, and which only close attention, patience, and care will overcome, and seeing that these particulars are of such importance among the Androsaces, I will first briefly allude to them. They are, taken as a whole, a race of plants difficult to establish, and still more difficult to preserve through our English winters of constant change of damp, and fog, and smoke, all of which are foreign to them in their wind-swept mountain home. Many of the collected plants, too, arrive in such a bad state as to be almost worthless when they come to hand. This is especially the case with those of woolly tufts of rosettes, and which at any time are impatient of confinement and damp overhead. Still there are exceptions even to this, for in *A. lanuginosa* and *A. sarmentosa* we find downy leaves, if not tufted growth. It is worthy of note, too, that while these are two of the best for general purposes they are the most readily increased. The really difficult members of this genus are *A. Chamæjasme*, *A. helvetica*, *A. imbricata*, and *A. glacialis*. All these, if planted out on the rockery, should be afforded full sun, and abundance of water in summer time. They should be planted in equal parts of loam and peat with plenty of sharp grit added, and some broken brick rubbish may also be added with advantage. In winter time it is well to protect them from excessive rains with pieces of glass so placed as to throw off the rain, and at the same time being raised above and clear of the plants, admit abundance of air on all sides. These may be propagated by division, though great care is requisite, but what I consider the better way would be to procure fresh seeds, either collected or home-saved, and by raising seedlings at home they may become acclimatised and be better able to endure our changeable climate. The woolly-leaved kinds of tufted growth I have never tried to root from cuttings, but such species as *A. carnea*, *A. Chamæjasme*, *A. pyrenaica*, *A. villosa* (this sends forth runners), and *A. Vitaliana* may be increased tolerably free by division and also by seeds when procurable. As before stated *A. lanuginosa* and *A. sarmentosa* are readily increased. The former is of trailing habit of growth, and produces umbels of pleasing delicate rose-coloured flowers. It is, in fact, one of the most charming of this family, and as a remarkable fact every inch of stem will root, if cut up into lengths and inserted in sandy soil, and kept close in handlights or bellglasses. Given the higher positions on the rockery, and allow it to trail freely, it is a most delightful little plant. Quite distinct in every respect is *A. sarmentosa*, which has large spreading rosettes of leaves. This gives off Strawberry-like runners, which terminate with small rosettes, which in turn emit roots freely. These tiny rosettes may be pegged down, previously loosening the soil beneath them, or if allowed to ramble at will invariably root freely and soon form a pleasing feature on any rockery. Sandy loam suits it admirably. It comes from the Himalayas, and produces umbels of rose-coloured flowers with a white eye.

OMPHALODES LUCILÆ.—For another instance where propagation is anything but easy and well understood we may turn to *Omphalodes Lucilæ*, one of the most charming alpine and one very slow to increase. This plant forms tufts of obovate spatulate leaves that assume a glaucous hue, and from which issue its exquisite though sweetly modest sky-blue flowers. It comes from Mount Taurus, and as a rock plant it is unique; it is perfectly hardy and frost-resisting, and its greatest enemies are damp and slugs. The latter attack it in a remarkable manner, and especially so if the plants are weak. It is now fourteen years since I first made its acquaintance, at which time I had never dreamt of rooting cuttings of it, and from what I could gather, to attempt it would be waste of time. Seeds were sown, but as these never came abundantly, and what did mature often took two seasons to germinate, progress was very slow. Then if seedlings are obtained you must be very careful or some slug will destroy it. I was not satisfied with the progress the seedlings made, and at length in 1875 determined to make an attempt with cuttings. This, however, was not without mature consideration, for those of your readers who are acquainted with this plant will know that the growths forming the tuft are very compact and close together, and to sever those from the main body of the plant was by no means an easy task. A slip of the knife might have cost me the plant, and I possessed but one. This I planted out in a square handlight in equal parts of peat and loam made rather sandy, and to induce it to make longer growths than usual I kept it rather close for several days. When I deemed them of sufficient length I exposed them to full air and light that the growths might become hardened and eventually I succeeded in detaching some thirteen cuttings, all of which rooted in about a month and made good plants, and of which I was not a little proud. This was my first experiment with this plant, and up to the present time I have never discovered a better way of propagating it, and so far as my experience goes it may be rooted any time from April to August inclusive, provided that cuttings of the right stamp are procurable. The cuttings I prefer are those slipped off with a heel attached, and even these are very short; in fact, so short that I have many times been compelled to tie small pegs to the cuttings, the latter having insufficient stem to hold themselves erect. I half fill the pots with drainage and use very sandy peaty soil for cuttings, with half an inch of clear sand on the surface. Several years ago I saw this plant on the rockery of the late Mr. James Atkins at Painswick growing most freely and thriving in a remarkable manner. Evidently the situation suited it, for it was rambling about freely. It is worth any care, but when taking any special care of it, just admit of sufficient discretion that it shall not be killed by kindness.

ARNEBIA ECHIOIDES.—The introduction of this interesting alpine brought with it many difficulties. It was said of it that it was "a rare seeder, and that cuttings would not strike," and to divide it was scarcely possible. It does seed, however, though not so freely as many members of the same order, and, as regards the cuttings, I have never tried them, simply because it is not a plant which produces the right material for cuttings, but there is a way beyond this by which it may be increased freely. In the month of January or February lift the plant by digging all round it, and take care of every scrap of root; cut these into lengths an inch or so long, and insert them around the interior of some pots or pans, and place them in slight warmth, gentle bottom heat if possible, the apex of the root should be just visible; they will not be long before signs of life are apparent, and you will observe small greenish buds first issue from the root and then slowly and surely develop into leaf. The largest roots will be studded with growth buds, and if the most is required of a good plant these larger ones may be cut in quarters, and in time you will have an abundance of young plants. There are many plants which can be propagated most readily from root cuttings, but which exhibit some indication by breaks on the main roots; the *Arnebia*, however, does not, though with a little assistance it breaks well. To those who are unacquainted with it the following brief description will give some idea. The plant grows 15 inches high, having roughish leaves. On first opening its flowers are of a chrome yellow; on the second day five dark spots appear near the throat of the corolla, which ultimately assume a blackish hue. This is a peculiar and interesting fact, inasmuch as upon one plant and at the same time it is possible to have the flowers in all stages; it is also most floriferous, commencing early in June and continuing till late in October with slight intermissions. It is a most interesting and valuable rock plant, and is a native of the Ural Mountains.

ONOSMA TAURICA.—I will next refer to *Onosma taurica*, which for many years was considered a very difficult alpine to increase. I have, however, before stated in these columns the best method of increasing it—i.e., strip the cuttings off the main portion of the plant by the heel, and without further preparation insert them in sandy loam and cover with a bellglass or handlight. In careful hands every cutting will root, and I make it a rule never to touch a cutting with a knife. Of those I have put in this season I have not a single failure. So long as cuttings are procurable they may be inserted from June to the end of September. The last hatch, however, are always best if allowed to stand over the winter in the store pots; so in view of this do not insert them so thickly as those which are to be potted off at once. It is, perhaps without exception the best rock plant we possess; its golden drooping tubular flowers are deliciously sweet-scented, and when in fine condition—i.e., some 2 feet across, it will yield an enormous number of flowers. In planting it, choose a not over-rich soil, for in such it grows too vigorously and is liable to decay at the collar, and for this reason it is well to place a few stones round the collar of the plant, so that it may be dry always; the air filtering, as it were, between the stones, will materially assist to keep it from decaying. Overhanging a ledge of rock, with its roots running deeply into some fissure of rock, it always appears extremely happy, and though it does not make so much growth in this position as it does on an even surface, it is certainly a longer liver. It forms a compact tuft of linear-lanceolate leaves, and is a true perennial alpine, the leaves and also the flower stems being densely covered with short stiff hairs. It grows from a foot to 15 inches high.—J. H. E.

EXHIBITING BLACK CURRANTS—CARTER'S CHAMPION.

IN answer to your Lincolnshire correspondent in reference to Carter's Currant, I suppose he means "Dunnett's Black Champion Currant." I have to confess that I have not been able to get hunches the size of Grapes from it, but I had fruit from it this year from two small bushes, which I exhibited at our local show in August in a pretty fair competition, of Lee's Prolific and Black Naples, and was easily first in both the gentlemen's gardeners' class and the amateurs' class. I visited two other shows afterwards, Alnwick, the largest in our county, being one of them, and I am quite satisfied that the "Champion" is the best Black Currant I have yet seen.

As regards exhibiting Black Currants in bunches, my opinion is that it is not advisable; as, for instance, at one show where I happened to be in which the rules required the above condition complied with, the public were quite astonished at what they considered such "shocking judgment," in a dish of large Currants not being placed, while two others, "slovenly picked," were first and second.—JOHN BUNN, Felton, Northumberland.

PIT-MOUND GARDENING IN THE BLACK COUNTRY.

A SERIES of articles appeared in one of the Black Country newspapers recently in reference to reclaiming much of the pit-mound surface for gardening purposes, and as the writer's words descriptive of the surroundings are so aptly illustrative I quote them here:—"Up to the close of the last century, and before the invention of James Watt had met with one of its earlier applications in the raising of coal from the mines, mining operations in this locality (i.e., the Wolverhampton district) had not been carried on upon any scale sufficiently large enough to have marred the beauties of the surrounding scenery. But with the introduction of steam power and the development of pumping machinery, the hidden treasures of Mother Earth were not only more easily wrested from her, but they were more eagerly sought for in every direction. Then as vast caverns began to stretch far and wide their gloomy windings below, so a synchronous change came o'er the spirit of the surface above. The sky line

became broken at every point by the gaunt forms of 'whimseys' houses; the landscape bristled with chimney stacks, and our new-born industrial life then quickened to the pulsating throbs of nodding and panting beam engines. The face of Nature broke out into eruptions like so many plague spots; swags, subsidences, and 'crownings in' on the one hand, and rubbish heaps and pit mounds on the other, at once and for ever obliterated the natural levels of the entire district. The Black Country is characterised not only by an unevenness of surface, but by a desolateness and sterility of appearance. For this must be held responsible in a great measure the gross carelessness of colliery managers and the callous indifference of coal owners. It has always been the aim of mine owners to raise their mineral at the lowest possible cost, and it has always suited a manager's interests, and at the same time benefited his pocket, to carry out this economic programme by ruthlessly ripping up the earth in the readiest and cheapest manner possible. The collier, in his daily struggle for bread, is perforce condemned to live in the midst of all that havoc and desolation which his labours have been made to create."

This forbidding and uninviting neighbourhood of thriving collieries by a natural law then exercises a magnetic influence over the surrounding locality. To such a centre as this there is an irresistible attraction for the workers and artificers in iron; for in this twice-blessed country of England it is the decree of a hountiful Providence that where coal is there shall iron be also. And as these twin industries of coal and iron have brought into existence many teeming centres of population throughout the length and breadth of the land, not the least of which is the South Staffordshire coal field, these industries have caused quite half a million beings to be concentrated within the confines of the Black Country. The life of a collier is not a pleasant one to contemplate. The surroundings of his house are like the scenery which meets his eye—unlovely. Can it then he wondered at that his tastes are unrefined, or that his pursuits are sometimes brutal? What is there in his daily life to elevate or to refine? Let those who sneer at his drunkenness, his dog-fighting, and his many other traditional brutalities, remember this. From him the beauties of Nature have ever been shrouded in soot or hurried in shale; as he has been robbed of Nature's elevating influence, so also has society and all its civilising tendencies been denied to him. Society has turned its back on the Black Country; a Black Countryman is regarded by society as a sort of barbarian—as one who must not "stand between the wind and its nobility." Well, this is a truthful description of a long extensive track of desolated Nature, so ably written by Mr. Hackwood, who holds an important position in connection with the Board schools of Birmingham. The Midland Black Country extends from the outskirts of Birmingham to Wolverhampton, and takes in Smethwick, Old Hill, Darlaston, Wednesbury, Oldbury, Bilston, West Bromwich, and a host of other places, each having a large population of its own; and some idea of the extent of acreage occupied by the exhalations of shale and other excreta from coal pits and ironstone pits may be grasped by the following facts given by Mr. Hackwood in the newspaper articles I have alluded to.

"It has been stated in the public Press that colliery wastes occupy many thousands of acres of the Black Country. It was with a view to test the accuracy of this statement that some information was sought as to the real extent of these wastes and their fitness for reclamation and cultivation. A circular was addressed to every town surveyor in the district asking for certain tabulated information and reliable statistics relating to the question."

Well, the result of information gained in this way gives us an approximate area of colliery waste lands in the district of Wednesbury alone of 246 acres. This is for one township only, and in this district a large number of small gardens have been reclaimed—that is, converted into gardens from the shale and other *débris* turned out of the coal and ironstone pits in the district. Wednesbury has not yet a horticultural society, but one is determined upon for next year. Darlaston, which started a horticultural society this year, and most successfully, is a large township adjoining Wednesbury. Betwixt Wednesbury and Darlaston there is a large and well-populated district known as King's Hill, where there is an enormous mass of pit-mounds, quite two acres in extent, under garden cultivation. These are known in the district as "Knowell's Mount," and an immense amount of credit is due to Mr. John Hall, who is the foreman painter of the great mass of ironwork manufactured at the Old Park Iron Works, Wednesbury. This enormous mass of shale and other non-gardening deposits has been drawn from the coal and ironstone pits underneath, and quite two acres of what formerly was good arable and cultivated land has been buried by the deposits from the pit. The immense mass rises from 25 feet to the greater height of 100 feet above the ordinary ground level, and has no shelter whatever, but is fully exposed in every direction to wind and smoke. The entire mass is composed of shale, ironstone deposits, and small coal, from which good garden soil is absent. This great mass has been levelled down to a certain extent, and night soil has been mixed with it, and although but about three years in cultivation excellent crops have been grown here. At the present time the area of two acres, exposed to all the winds which blow, and, as I before stated, without an atom of shelter, are now producing excellent and large crops of Cabbage, Cauliflower, both crops free from fly and caterpillar, and it is difficult to find these crops free from these pests generally in the Black Country. Savoye, French Beans, Little Gem and other dwarf Peas, Potatoes, Jerusalem Artichokes, good Celery, Carrots, Leeks, Onions, Parsley, Rhubarb, Brussels Sprouts, &c. It is really a wonder how these crops are obtained with everything dead against a fair prospect of success; but there is in shale and its accompanying deposits a drought-resisting power which helps vegetation very consider-

ably, and with the admixture of good stimulants, night soil especially, good crops can be had when labour is expended on their production.

The cultivation of crops on Knowell's Mount is done under enormous difficulties, for, in addition to what we have written, a large galvanising ironworks exists on the south-west side, within 50 yards, and on the other side, and within a quarter of a mile, are the very extensive plant of the Old Park Hall Iron Works, and a host of other deleterious matter is being poured out from the numerous chimneys of other works close by, and the "air we breathe" there is not such as gardening plants thrive upon generally. The only manure applied to this large tract of garden is night soil carted there as it is taken from the closets, and is mixed with the shale preparatory to its being used on the soil. Some idea will be formed of the immense area of waste land from pit mounds when we state that in the townships of Wednesbury, Brown Mills, Wednesfield, Walsall, and Dudley, there are 2345 acres lying idle, and this is but a small proportion of the entire acreage of such lands in the Midland Black Country.—W. DEAN.

(To be continued.)

SPATHOGLOTTIS AUGUSTORUM.

AT a meeting of the Royal Horticultural Society on July 13th this year, Sir Trevor Lawrence, Bart, M.P., exhibited from his celebrated Burford Lodge collection of Orchids a plant of *Spathoglottis augustorum*, a little known but handsome species well worth attention. The genus *Spathoglottis* does not receive much attention now, though there are several pretty species, and it is somewhat remarkable that Mr. B. S. Williams does not refer to any of them in the last edition of his "Orchid Manual." That represented in the illustration (fig. 41) is, however, stronger in habit and altogether of bolder appearance than most of the others. The flowers on the Sir Trevor Lawrence's plant were about 2 inches in diameter, but they are said to greatly exceed that size in a wild state. The sepals and petals are oval, pure white, or faintly tinged with rosy mauve; the lip long, very much contracted towards the base, and two-lobed at the point, of a bright purple colour, a pretty contrast with the other portion of the flower. The flowers are clustered in racemes near the apex of a long peduncle, rising above the graceful arching bright green leaves.

The species is a native of the Sunda Isles, where it was discovered by M. Auguste Linden and M. Auguste de Ronne, when collecting for the Compagnie Continentale d'Horticulture, and is said to occupy damp hollows or recesses in high regions. It is a terrestrial plant, and requires a compost of peat, loam, and crocks, a high temperature, and abundant supplies of water.

MADRESFIELD COURT GRAPE.

IN reference to the remarks of your correspondent Mr. Udale, on Madresfield Court Grape, I wish to join issue with him as to heavy cropping preventing cracking. I have one Vine here planted in a mixed house. This Vine has two rods and is now carrying a very heavy crop, and not a single berry have I observed to be cracked. I may mention I keep plenty of ventilation both top and bottom, night and day, with a little fire heat. The border is outside and is very wet and cold, so as to cause some of the other sorts to shank. I therefore contend it is not necessary to treat this fine Grape, as a great many people seem to think is beneficial, by subjecting it to an injurious dry treatment at the roots to prevent cracking. I also agree with Mr. Cooke as to well thinning out the berries so as to give them room to swell, as the least cramping of this very thinskin Grape would be a source of evil.—ALFRED BISHOP.

VARIETIES OF VIOLETS.

SWEET Violets may not be all referable to *Viola odorata*, yet it is difficult to otherwise account for the fact of our finding much the same form of Violet in many of the mountainous countries of Europe near the sea. We get from the Crimea a Violet very little different from that found in Britain's hedgerows, from Greece a closer-growing and more diminutive form of Violet, and from Spain we have a variety not materially dissimilar from *V. odorata*, though it is distinguished as *V. arborescens* through its forming stems by age. The colour of the flower is the same, or a bluish purple, and all except the Grecian have white forms, which is generally the first breaking up of species into varieties. Acting on this principle, which is only suggested by the cultivated selections, and not on any definite data, I would only further observe that the double purple Violets of the East, such as *Patrie* and *Double Russian*, are not very different from the double form of *Viola odorata*, only in *Double Russian* the flowers are imbricated much more than in *Patrie*, which seems to have the petals set-on-end against each other. In *Viola odorata plena* or *Double Purple* or *Scotch*, we have the petals imbricated as in *Double Russian*, but in both there is a strange leaning of the petals to the erectness that prevails in *Patrie*. In *elegantissima plena*, which is clearly of the *Patrie* type, we ascend to the coveted imbricated form, with a much decreased vigour and hardness of plant. In the Neapolitan there is a

singular admixture of imbricated and stand-on-end petals, and there is an equally suggestive co-mingling of broad with narrow, and of short with long petals, it being manifest that the highest forms are the result of a long course of cultivation and selection. Our sweet Violet has not advanced so far as the Russian, simply because it has not been operated with to any great extent in the sunny and genial climate of the Adriatic coasts, but we get so far as it has been subjected to advancing influences greatly improved forms, of which none afford a better example than Queen of Violets. So far as my observations tend, the Russian Violet is only another form of *Viola odorata*, due probably to long cultivation in the alluvial soil of Ukraine, the same Violet, in fact, as prevails in the Crimea, the Neapolitan having had a similar origin through subjection to the influences of the Apennines on the one hand, and the Adriatic on the other. The difference between *Viola odorata* and *V. suavis* is not great.

Neapolitan Violets are generally accepted as the progeny of a separate species—viz., *V. italica*. It may be so, and if it is, which is the species? The single Neapolitan? I think not. The foliage is certainly somewhat different, the leaf is longer in proportion to its width, more pointed, and the lobes are of different length, the longest overlapping the petiole. The flowers are paler in the species; lavender, white eye, a pale variety of *V. suavis*, intermediate between an albino form of Russian and the species, a form in fact of *V. suavis*, due to long subjection to cultivation in a more favoured climate. The less hardiness of Neapolitan to Russian Violet is not a fatal objection, as varieties resulting from high cultivation are more tender than the species, and this is enhanced in favour of our proposition when the varieties are originated from varieties of a higher order than the species in a much milder climate than the species obtains in its native habitats.



Fig. 41.—*SPATHOGLOTTIS AUGUSTORUM*.

In *V. odorata* the foliage is heart-shaped, blunt-pointed, and with the lower part or lobes closed or overlapping at the midrib; petioles long and comparatively weak, which becomes more marked in the cultivated than wild state, hairy, having a rough appearance, the petioles not infrequently becoming twisted, knotted, or warted. The flower stems are weaker and longer than in *Viola suavis*, the petals are narrower, and the spurs more prominent, the flower being more pendant. Russian has larger, more pointed leaves, glaucous or shining green leaves, much less hairy, and the lobes open or not nearly so close as in *V. odorata*; petioles stouter, more angled, and as short or shorter; flowers more erect, larger, and broader petals, footstalks stouter but not longer. In fragrance there is no appreciable difference. In some places Violets are found not distinguishable from Russian, and the Scotch is identical, but whether they are escapades from cultivation, or improved forms of *Viola odorata*, is matter of speculation. The Russian Violet never forms knots or warts on the petioles, and this characteristic pervades the varieties equally with the species.

The varieties of Violets may be thus classed:—

Viola odorata, blue. Spring. Britain.

Viola odorata alba, white. Spring.

Viola odorata var. grey or white and reddish purple. Spring.

Viola odorata rubra, pink. Spring.

Double varieties:—

Viola odorata plena, bluish purple. Spring. Syn., Double Scotch.

Viola odorata alba plena, white. Spring. Syn., Compacta.

Viola odorata rubra plena, pink. Spring; winter and spring in frames. Syn., Double Rose.

Viola odorata var. russicus or Crimean, slightly larger in all its parts than the species, flowers bluish purple. Winter and spring.

Viola odorata var. Patrie, probably the double form of Crimean. Double, purple-violet, streaked red. September to April.

Viola odorata var. græca or Grecian, bluish-purple, a small form of the species. Spring.

Viola odorata var. *elegantissima plena*, double, blue, indigo centre, waxy petals, finely imbricated petals, small in all its parts. Probably the double form of Grecian. Spring.

Viola odorata purpurea plena, double purple. Spring. Syn., Double Russian. Very little if any difference between this and the double form of *V. odorata* or Double Scotch.

Viola odorata var. *alba plena*, Double White. Spring. Syn., Double White Russian. Very little different from the double white form of *V. odorata* or compacta.

The two last named are generally accepted as *V. odorata* *suavis* varieties, but they are almost identical with *Viola odorata plena* and *Viola odorata alba plena*, and certainly are not varieties of *V. odorata* *suavis* or *sempervirens*, their foliage being of the well-defined *V. odorata* type, and are scarcely worth keeping distinct.

Viola odorata *suavis* or *sempervirens*, bluish purple. Spring. In mild seasons flower in early winter. Ukraine in Russia. Syn., Russian, Scotch, London, floribunda of some, &c.

Viola odorata arborea, purple. Winter and spring. Syn., Tree Violet.

Viola odorata arborea plena, double purple. Winter and spring.

Viola odorata arborea plena, double white. Winter and spring.

Varieties of *V. odorata* not referable to any particular class, the foliage being intermediate, or partly after the species and part after the subspecies or variety *suavis*, with in one at least after *arborea*—viz., King of Violets. They are generally accepted as garden forms of Russian, which I think erroneous, being more like varieties obtained through cultivation than transmutation effected from seed (cf *Viola odorata* vars).

Viola odorata var. *argenteoflora*, white, tinted rosy purple, purple spurs. Spring, but flowers freely on the runner wires, and is almost a continuous bloomer. Raised by Mr. G. Lee. Evidently a cross between a white and purple variety of Violet.

Viola odorata parmaensis plena, semi-double, white, striped rose. Spring. In frames flowers in winter.

Viola odorata La Reine, double white, tinted purple. Spring.

Viola odorata Queen of Violets, double white, tinted purple, occasionally very large. Spring. Syn., Belle de Chatenay.

Viola odorata Queen of Violets, var. *cærulea*, double, bright light purple. Spring.

Viola odorata Empress, double, purple. Spring. Very fine. Originated by Mr. H. Cannell.

Viola odorata Blandiana, double, purple, striped white. Autumn, winter, and spring.

Viola odorata King of Violets, double, dark indigo-blue. Spring.

Viola odorata *suavis alba*, white. Spring. Syn., *albiflora*.

Viola odorata *suavis superba*, bluish purple, tinted rosy purple. Spring. Larger in all its parts than Russian. Syn., Russian Superb.

Garden varieties of *Viola odorata* *suavis* and vars.:

Giant, bluish purple. Early winter, if favourable, to spring.

Devoniensis, deep bluish purple. September to April.

Floribunda, bluish purple, very floriferous. September to April.

Raised by Mr. G. W. Boothby from Giant.

Czar, purple. September to April.

White Czar, white. Autumn, winter, and spring.

Victoria Regina, purple. September to April. Raised by Mr. G. Lee.

Odoratissima, bluish violet. Spring, and during the winter in frames. Raised by Mr. G. Lee.

Prince Consort, bluish purple. September to April. Raised by Mr. G. Lee, but not sent out up to 1886.

Princess of Prussia, purple. September to April. Raised by Mr. G. Lee, but not sent out up to 1886.

The four last named are the largest, best shaped, have most substance, and bloom over a longer period than most single varieties of Violets.

Viola odorata *suavis* *Wilsoni*, pale purple, often pale in colour, and termed a pale blue, white eye, narrow petals, curious flower, highly fragrant. Spring, or in frames in autumn, winter, and spring.

Viola odorata *suavis* *Barrensteini*, bluish purple. Autumn, winter, and spring.

Viola odorata *suavis* *Lauchiana*, purple. Autumn, winter, and spring.

The two last are perhaps only forms of Giant of continental origin.

Viola odorata *suavis* *Lavisiana*, lavender, white eye, large, very sweet, and distinct. Spring, in frames autumn, winter, and spring.

Viola odorata *suavis* *pallida* (*italica*), pale lavender, white eye, very sweet. September to April.

This is the probable single Neapolitan, the form the doubles occasionally give, and which is very inconstant, evolving into the double forms. Seedlings are very variable.

Varieties of Neapolitan or *Viola odorata* *suavis* *pallida* :—

Neapolitan, lavender, white eye. Winter and spring. Syn., Double Neapolitan (*Viola odorata* *suavis* *pallida* *plena*).

Marie Louise, lavender-blue, white eye. September to April. Very liable to evolve into New York.

New York, deep mauve, streaked red, white eye. September to April. Syn., *Odorata pendula*, Venice, Marguerite de Savoie, Nice, Marie Louise of some, Count Brazzi's Neapolitan, Duke of Edinburgh, Madame Millet, and De Toulouse.

De Parme, deep lavender, white eye. September to April.

Duchess of Edinburgh, cream white ground, petals tinted mauve, bordered blue. Winter and spring.

White Neapolitan, occasionally semi-double only. Winter and spring. Syn., Swanley white, Count Brazzi's White Neapolitan (*Viola odorata* *suavis* *pallida* *alba plena*).

The last named six varieties have double flowers. The whole of the others have single flowers, unless otherwise stated.—*VIOLA*.

PLUMS IN LONDON—FOREIGN FRUIT AND RAILWAY CHARGES.

PLUMS and Damsons have been pouring into London in such quantities as have never been known before. Mr. Skinner, one of the largest growers in the country, and who has dealt in Covent Garden for over half a century, affirms that he has never known a year at all approaching this for both Plums and Damsons, and indeed stone fruit generally. Usually large quantities are imported into London from the Continent, but there is this year such a glut from English grounds that the Continental growers are altogether out of it. There are no foreign Plums in the London market. Indeed, it is reported from some quarters of Kent that great quantities of Plums are being allowed by the owners to rot upon the trees, as they find it does not pay them to gather them and send them to market. Growers complain that this waste is due to the exorbitant charges of the railway companies, who are reaping a rich harvest from the splendid crops of our own grounds while they are actually bringing down prices in the market by giving an advantage to Continental growers. This is not the case this year with Plums and Damsons, since, as it has been said, there are no Continental fruits of these kinds on our market.

But all such fruits as foreign growers find it worth while to send over here can be sent at rates lower than those charged to our own growers. For example, it is said that Pears and Apples are being conveyed from Belgium to Covent Garden at from 4d. to 5d. a bushel. From Maidstone 6d. is the charge. Thus it would seem that it is not only the foreign sugar trade that is being fostered by a bounty system. There is a bounty system for the benefit of the foreign fruit trade also, and this is applied by our own railways. The plea for this very unsatisfactory state of things is that if our railway companies did not cut down their rates to foreign growers the traffic would be taken by steamers. They are, in fact, compelled to this reduction by competition. That may be so; but one would think that where competition does not compel this reduction, common fairness to rival traders should. If this is not sufficient, some other means must be adopted. So at least the English growers think, and they are understood to be casting about for these other means. Some of them whose grounds are in the neighbourhood of Sittingbourne have been endeavouring to organise a service of fruit-harges brought up by steam-tugs. The cost this way, if it were practicable, would not amount to half the railway rates, it is said. The first experiments, however, do not appear to have been altogether successful. It is a tidal creek that runs out from the Thames towards Sittingbourne, and the difficulties of tide have occasioned the loss of a market to the first cargo. With ripe fruit this, it is clear, may sometimes prove serious, and may possibly thwart this reversion to a mode of transit familiar to the days before railways. It does not, however, seem to be as yet quite certain that a little scheming and contriving as to the time of dispatch may not overcome this difficulty. Among growers to whom water carriage is not available there are proposals of combination to provide means of land transit apart from railways, should argument fail to secure fair terms. Meanwhile, it would be interesting to know, if some statistician would tell us, what sort of a tax Londoners are paying on this one item of fruit alone, through the high rates of carriage rendered to some extent necessary by the extravagant cost of our railway construction, and the enormous sums which were originally paid to landowners along their lines of route in order that towns might be planted and industries developed, and a fabulous value thus given to the estates of these same landowners. It would at least be curious, if not startling, to see how large a part of every 6d. we spend in Plums goes to help out the dividends on that tremendous outlay of capital, to say nothing of the fruit that is rotting on the trees because we parched and heated Londoners cannot get at it.—(*Daily News*.)

ROYAL HORTICULTURAL SOCIETY.

SEPTEMBER 21ST.

THOUGH no prizes were offered on this occasion the exhibits before the two Committees made a very good display, the collections of hardy flowers and Dahlias being numerous.

FRUIT COMMITTEE.—Present: T. Francis Rivers, Esq., in the chair, and Messrs. W. Paul, W. Warren, G. Norman, J. Ellam, J. Burnett, G. Bunyard, P. Crowley, S. Ford, R. D. Blackmore, C. Silverlock, Harrison Weir, and T. B. Haywood. Mr. T. Hungerford, Berami Station, New South Wales, exhibited specimens of the Navel Orange from trees eight years old cultivated without irrigation. The fruits were highly commended. Messrs. Paul & Son, Cheshunt, exhibited plants in fruit of their new perpetual Strawberry Roi Henri. Mr. Warren of Isleworth sent several dishes of Apples, Pears, and Plums. Mr. W. Taylor, Osborn House, Hampton, showed fruits of Cox's Emperor Plums. Mr. T. Baines exhibited specimens of the Cut-leaved Bramble. Mr. J. Burnett, Deepdene Gardens, Dorking, showed fruits of the Tyson Pear, and the late Raspberry Belle de Fontenay. Mr. R. Smith, Kenward, Yalding, Maidstone, sent fruits of Prince of Wales Peach from trees on open walls. They were of good size and colour. (Vote of thanks). Mr. Horley, Toddington, Beds, showed a seedling purple Plum. Messrs. Paul & Son, Cheshunt, had about one hundred dishes of Apples.

Mr. R. Gilbert, The Gardens, Burghley, Stamford, had a fruit of a green-flesh Melon named Her Ladyship's Favourite, which was of good flavour. Mr. Morrall, Rugeley, showed a seedling Apple. Mr. J. James, Cowley Road, Uxbridge, had a seedling Tomato, large, round, even fruits. Mr. W. Roupell, Harvey Lodge, Roupell Park, showed some handsome bunches of Madresfield Court Grapes and a tree of Fertility Pear in a pot, and bearing sixteen

fine fruits. A cultural commendation was awarded. Mr. T. Laxton, Bedford, exhibited specimens of his open air Tomatoes, the handsome Dartmouth Crab, the Czar Runner Bean, and Sandy Prize Onions. A vote of thanks was awarded. Messrs. J. Veitch & Sons, Chelsea, sent fruits of Clapp's Favourite Pears from a pyramid on the Quince stock. (Vote of thanks.) Messrs. Paul & Son showed a collection of about a hundred dishes of Apples, the fruits clean and fine. Messrs. H. Lane & Son, Berkhamsted, showed four large Vines in pots, representing Alicante, Foster's Seedling, Black Hamburgh, and Gros Colman, bearing numerous bunches well coloured. Messrs. W. Paul & Son, Waltham Cross, exhibited about 150 dishes of Apples, representing many varieties.

FLORAL COMMITTEE.—Present; G. F. Wilson, Esq., F.R.S., in the chair, and Messrs. J. Douglas, T. Baines, S. Hibberd, G. Paul, W. Holmes, R. Dean, H. Ballantine, J. Dominy, R. M. Pollett, A. J. Lendy, J. O'Brien, H. Turner, H. Cannell, W. Wilks, C. Noble, J. Hudson, H. Bennett, G. Duffield, Amos Perry, and Dr. M. T. Masters.

From Messrs. J. Veitch & Sons, Chelsea, came a collection of new Rhododendrons and half a dozen plants in pots of the bright scarlet-berried *Crataegus Lelandi*, which were loaded with their wax-like fruits, and had a most ornamental appearance. The Rhododendrons, which comprised Queen of Yellows, Rose Perfection, and Distinction, are noted in another column. A vote of thanks was awarded for *Curcuma sumatrana*, with a spike of bright red bracts and yellow flowers. An elegant *Aralia* named *Trevesia palmata* from Sumatra was also shown, the leaves having four to seven deep lobes. Mr. G. Humphries, Kingston Langley, Chippenham, sent some seedling Dahlias; and Mr. G. S. P. Harris, Orpington, Kent, also sent three varieties of Dahlias, a bright yellow self named Freedom being notable. Mr. W. Bull, Chelsea, sent several new plants that were certificated, together with *Maranta eminens* variegated with light and dark green, and *Palaourea jugosna* with elliptical velvety green leaves veined with white and pink.

Sir Trevor Lawrence, Bart., M.P., Burford Lodge, Dorking (gardener, Mr. Bain) contributed a group of *Cyrtanthus hybridus*, and a variety named rosem, all flowering well and very ornamental. *Crinum Powellii* with fine, large, delicate, rosy flowers was also shown from the same garden. A vote of thanks was accorded to Mr. A. Monks, gardener to Dr. Duke, The Glen, Lewisham, for *Cattleya Gaskelliana* var. *Sunray*, a variety with bluish-tinted sepals and petals, with a crimson stripe in the centre of the petals, and a rich crimson lip, yellow in the throat. Mr. H. Simkins, gardener to R. J. Measures, Esq., Cambridge Lodge, Camberwell, was awarded a cultural commendation for *Grammatophyllum Ellisi*, a healthy well-grown plant, with a spike of fourteen flowers curiously mottled with brown on a yellow ground. Mr. T. Laxton, Bedford, showed a new Pink named *insignis*, *Gaillardias*, and early *Chrysanthemums*. Mr. C. Turner, Slough, had a stand of Pompon Dahlias, comprising several novelties, three of which were certificated. A vote of thanks was accorded to Messrs. Paul & Son, Cheshunt, for *Aquilegia Rowolfi aurea*, a golden variegated form.

Messrs. H. Cannell & Sons, Swanley, showed a stand of Cactus and other Dahlias, of which several were certificated. Some trusses of a bright blue *Hydrangea* were shown by Mr. G. Ford, Leonardslee, Horsham, who was awarded a vote of thanks, a similar recognition being accorded to Mr. W. E. Boyce, Highgate, for an early flowering *Chrysanthemum*, named Golden Fleece, of excellent shape, and very bright yellow.

Mr. T. S. Ware, Tottenham, as usual had a magnificent display of hardy flowers, comprising *Tritonias*, *Lilies*, Dahlias, early *Chrysanthemums*, *Asters*, &c. The Dahlias were especially beautiful, the Cactus section being well represented by *Picta formosissima*, Mrs. Hawkins, Constance, Juarez, and the new *Cochineal*, which was certificated. Single Dahlias were also admirably shown. Messrs. Kelway & Son, Langport, Somerset, also had a large collection of *Gladioli*, similar to those they have been showing during the season. Messrs. Paul & Son, Cheshunt, exhibited an extensive collection of *Roses*, Dahlias, and ornamental foliage shrubs. A choice collection of hardy flowers, comprising *Asters*, *Helianthus*, *Helenium*, *Rudbeckias*, *Physostegia speciosa*, and many other flowers. Messrs. Rawlings Bros., Romford, exhibited about eighty fine Show and Fancy Dahlia blooms, including all the best varieties, together with a stand of Pompon and seedling Dahlias. Messrs. W. Paul & Son exhibited eight boxes of fresh and bright Rose blooms.

CERTIFICATED PLANTS.

Davallia solida major (W. Bull).—A strong growing variety with smooth shining green bipinnate fronds somewhat triangular in form, 2 feet long and about 18 inches broad at the base.

Selaginella tessellata (W. Bull).—A plumose species with large, erect, and curving fronds, very elegant in the fruiting state.

Cespedia discolor (W. Bull).—A handsome shrub or small tree with lanceolate leaves 2½ feet in length, of a soft bronzy hue in a young state and deep green when mature. It much resembled *Grias cauliflora* in habit and shape of the leaves.

Cyrtanthus hybridus roseum (Sir Trevor Lawrence, Bart., M.P.).—A handsome variety, distinguished from the interesting hybrid previously honoured by the warm rosy tint of the flowers, the flowers being similar in other respects.

Cypripedium Sanderianum (J. Veitch & Sons).—A long-petalled species with a brown striped dorsal sepal and a light brownish lip. It is a distinct species, but its full attractions could not be judged from the small plant shown.

Rhododendron Queen of Yellows (J. Veitch).—A garden hybrid with bright yellow flowers and red stamens, the lobes of the corolla round, and the truss had nine flowers, though the plant was small.

Rhododendron Rose Perfection (J. Veitch & Sons).—Another fine hybrid of the same type as preceding, but with well-formed clear rose-coloured flowers.

Selaginella gracilis (J. Veitch & Sons).—A South Sea Island species of slender growth, dark green, the stems drooping, 18 inches or more in length.

Dahlia Mrs. Foster (C. Turner).—A handsome show variety of grand form and substance, of a peculiar pink and salmon hue.

Dahlia Queen of the Belgians (Rawlings Bros.).—A delicate pale pink tinted show variety, much like Mrs. Gladstone.

Dahlia Gazelle (C. Turner).—A Pompon variety, white, tipped with bright crimson, the blooms very neat in shape.

Dahlia Iolanthe (C. Turner).—A very neat Pompon, white, tipped with bronze and yellow.

Dahlia Don Juan (C. Turner).—An extremely dark maroon Pompon variety, very small and neat.

Dahlia Cochineal (Ware).—One of the Cactus section, with broad dark scarlet florets, very distinct.

Dahlia Empress of India (R. H. Munday, Basingstoke).—One of the Cactus type, with well-formed blooms, broad florets, light crimson, striped with maroon.

Dahlia Charming Bride (Cannell).—A single variety, white edged and tipped with bright rose.

Dahlia Lady M. Marsham.—A single bright scarlet variety, very showy.

Dahlia The Quair (Paul & Son).—A handsome single variety of a very dark scarlet hue, the florets broad and of great substance.

Ulmus Pitevri pendula (Paul & Son).—An elegant drooping Elm with deeply serrated dark green leaves.

Crataegus Lalindei (J. Veitch & Sons).—An ornamental shrub with most abundant small bright scarlet fruits in dense clusters on the branches.

DRESSING CHRYSANTHEMUM BLOOMS.

In the first place, kindly allow me to thank "W. M." for drawing my attention to his remarks, p. 256 of last week's issue of the Journal, on the subject of dressing *Chrysanthemum* blooms; and secondly, allow me to inform "W. M." that the reason the Judges gave the first prize to the blooms your correspondent quotes as being undressed (?), was simply because they were superior to any others which were placed in competition with them, and not because they were "undressed," as "W. M." assumes they were. I do not for one moment think they were purely undressed flowers—that is, staged as grown, without any manipulation of the petals at all, nor do I think anyone else can think so who saw them and who knows anything about dressed flowers. Certainly they were not well dressed, but I venture to say that something had been done towards arranging some of the florets.

Seldom indeed are *Chrysanthemum* blooms seen of such extraordinary size both in diameter, depth, and breadth of petal as those in question, and it was purely on account of these qualities that the first prize was awarded to them. Let it be understood they were not blooms such as are sometimes seen—viz., very large in diameter, flat and thin of petals, and hollow-eyed; had they been such as these I know the Judges who officiated at the show in question would not have placed them where they did. Many times and in different places have prizes been offered for undressed blooms, which has always resulted in a failure in this manner. Very little competition could be obtained, and next to no interest taken in what was staged in the undressed classes. Why, I thought the subject of staging undressed blooms of *Chrysanthemums* was almost done with; certainly it is by anyone who understands the difference between the two blooms. Staging dressed blooms of *Chrysanthemums* is simply presenting the flowers in the most favourable manner, just in the same way as a person would stage any other kind of garden produce—that is, use all legitimate means to show it to the best advantage. Dressing the blooms of *Chrysanthemums* is doing no more than washing the dirt off Potatoes or trimming the roots and tops of an Onion or a Cauliflower when staging these for competition, and who would dream of presenting these vegetables without "dressing" and expect to win in the bargain? Undressed blooms will not do for competition—that is, if winning prizes is the object and I fancy this is a weakness amongst most men.—E. MOLYNEUX.

SALVIAS AS OUTDOOR DECORATIVE PLANTS.

THE *Salvias*, including those of subtropical and temperate climates, constitute a very extensive genus of plants, widely varied both as regards stature, flowers, and foliage; and although, as is often said, some of the finest are unfortunately too tender to endure our severe winters in the open air, the same may be said of *Pelargoniums* and hosts of other plants used for the embellishment of our gardens during summer. Most of the *Salvias* to be mentioned will flourish in the open air during the warm months; they are showy, and give as great a profusion of bloom as most plants used in our flower beds, besides giving a variety not surpassed by any other genus of plants in general cultivation, from the most lovely blue through many shades of purple, scarlet, and yellow to pure white, varying in size as well, from the charming little *chamædryoides* to the large finely formed bloom of *S. patens*. By themselves sufficient variation may be had to make a most beautiful flower bed, and in this way we prefer growing them, as much for the novelty as the effect. Many of the species are grown in the greenhouse and conservatory, but in July, August, and September there is generally no lack of flowers inside, and these could be well dispensed with. The less robust kinds, even when in full flower, could be lifted if required, care being taken in the process, when they would continue to flower in a house from which the autumn frosts could be excluded. Otherwise they are readily propagated by cuttings taken now, or a little earlier, and placed in heat. During winter they will require all the light possible, with just sufficient heat to exclude frost. They are easily drawn, and fire heat seems to weaken them very much; indeed, they might well be treated in

exactly the same way as *Pelargonium* cuttings, only giving them a little more room and plenty of light.

S. angustifolia is nearly allied to *S. Pitcheri*, both of which are fairly hardy in ordinary winters, and flowering late in the autumn, both blue-flowered, and charming in their way. On a south border, where they would get plenty of sun, they would no doubt flower earlier, and give more satisfaction in every way. The former is between 2 and 3 feet in height, but rather straggly. *S. azurea*, with narrow linear leaves and charming deep blue flowers, is a desirable plant, native of Carolina. *S. aurea*, for which ferruginea would be more descriptive, is a charming little plant, from 6 to 12 inches high, with hoary roundish leaves, native of the Cape. *S. chamædryoides* is one of the most beautiful of the small-flowered group, and besides being a good border or bed plant is pretty for the rockery, where it is hardy, unless in severe winters; it is between 12 and 18 inches high, much-branched, and forming sturdy little bushes, covered with handsome blue flowers; leaves oval, crenated at the margins, and rugose or rough on the upper surface, native of Mexico. *S. Greigi*, a charming and easily managed plant of recent introduction, forms neat little bushes, the branches being thickly covered with lanceolate shining green leaves, the flowers intense scarlet, borne on short spikes; it strikes readily from cuttings, and prefers cool to warm treatment; a good plant for winter flowering in conservatory. *S. Grahami* is an old garden favourite of rare merit, with bright scarlet flowers, larger, if anything, than the above, on more elongated stalks; the leaves are smaller, ovate, crenate, and roughish on the upper surface. There is another, said to be a variety, but widely distinct, with much lighter flowers and very large leaves. Both are natives of Mexico. *S. interrupta*, a Morocco species, with large blue and white flowers, is also a desirable plant.

S. involucrata, a rather better form of which is called *Betheli* in gardens, is a rank grower, but a most charming plant when well flowered. It is fairly hardy in the open against an east or south wall, profuse flowering, and very peculiar with its large coloured bracts. *S. paniculata* has pale purple and white flowers, excellent as variety, but none of those above surpass or are even equal to the well-known *S. patens*, with its variety *alba*. It is a good habited plant, free with its numerous large and brilliant blue flowers; it stands well in a cool frame, and is certainly a desirable plant in every garden. The white variety is particularly pleasing, making a handsome companion to the type. *S. pseudo-coccinea*, *coccinea*, and *porphyranthera* are all excellent plants of the scarlet type, the former being a valuable addition to our summer flowers. Besides these, *S. splendens*, *S. rutilans*, *S. gesneriæflora*, *S. fulgens*, *S. Heeri*, *S. calicifolia*, and many others are alike beautiful and useful. Even those of a hardy nature are so varied that many a collection would be considerably improved by a careful selection; besides, in the case of those who combine a little pleasure with a little profit in keeping bees in their gardens, these *Salvias* act as loadstones to the busy workers. Among the best are *S. sylvestris*, a good form of *S. pratensis*, *S. Horminum*, *S. glutinosa*, common Sage, *S. officinalis*, *S. verticillata*, *S. austriaca*, *S. sclarea*, the *bracteata* form, *aurita*, &c.—M.

CUSCUTAS.

A VERY interesting but pernicious plant is the Hellweed or Dodder, and it is perhaps at this season of the year that it chiefly exhibits the characteristics that render it so worthy of notice. There are two species, known as the Greater Dodder (*Cuscuta europæa*), and the Lesser (*C. epithymum*), both of which have been indigenous from time immemorial, and one or other of which may be found growing in nearly every county of England as well as in Scotland and Ireland. To determine the source from whence it came would be difficult, as may be inferred in case of the very appropriate specific name of the former kind, so no one in particular can be fairly reproached for having contributed to the British flora a plant that is so undesirable to possess—that is, to any great extent. One thing is certain, that in some districts of France and Italy its ravages, in past years, have been so extensive as to occasion serious loss to agriculturists, whose crops of Lucerne or Clover have been extensively damaged by this remarkable parasite.

Although denied by Nature both roots and leaves, it is only necessary to introduce it amongst plants on which it is known to attach itself to demonstrate its destructive powers as well as its amazing fertility in producing seeds. These, it may be remarked, are sufficiently small to admit of their being present in other seeds, more especially in some samples of Clover, without being detected, save by those who are familiar with them; and, like many others, if allowed to ripen, it is by no means impossible for them to vegetate when brought to the surface, although the ploughshare may have buried them in the

ground for many years. The plant cannot but be regarded as nothing short of a vegetable phenomenon from its very inception. The embryo of the seed is without cotyledons or seminal lobes, being simply* a spiral thread without roots, and the plant consists only of red-tinted, succulent, thread-like stalks, severing itself from the soil and twisting about the plant on which it grows in a spiral direction contrary to the sun's motion, and drawing its nourishment from it by small sucking papillæ fixed into the pores of the bark or rind, thereby exhausting the foster plant of its juices, imbibing its virtues, and often destroying it. In this country the crop that is most frequently attacked by this pernicious parasite is Red Clover, but it will luxuriate on many other plants than those of this genus, notably the Hop, of which a very fair example has been forwarded to the Editor. It grows on many leguminous plants, especially Vetches and Beans, as well as on Flax, Thistles, Nettles, Mint, Balm, Thyme, Gorse, and Heather. So destructive is Dodder to the Clover crop that whole fields have been rendered nearly useless for fodder, and entirely so for seeding. It may, however, be assumed that in the majority of instances where a crop has been jeopardised by its presence, sufficient care or judgment has not been exercised in selecting the seed from which the crop has been produced. An erroneous notion prevails amongst some agriculturists that Dodder in certain samples is insidious rather than separable, whereas its presence can be readily detected. It cannot be too widely known that the boldest samples of seed are generally most free from it, or can easily be made so; whereas it is not infrequently to be found in samples of small seed, especially those imported from some parts of the continent, and in these cases it is not only difficult to free the seed entirely from it, but a large proportion of the bulk must of necessity be sacrificed in accomplishing it effectually.

Notwithstanding its devastating powers when luxuriating amongst our field crops, there is no reason why it should be denied a place in our gardens, for these leafless plants produce a profusion of rather minute flowers in dense clusters, which partake somewhat of the colour of the thread-like stems, and together present not altogether an unpicturesque effect. In support of this it may be mentioned that in the first volume of Baxter's "British Flowering Plants," on page 18, where the plant is figured, the author states that he had seen "a large field of Beans completely matted together with this parasite; it has taken possession of the whole crop, and having elevated itself several inches above the Beans produced a very beautiful effect, especially when the sun shone upon it, and he truly observes further on that "it must be a very serious evil to the farmer." So great an evil was it in Tuscany as far back as the year 1825, that the crops of leguminous plants were so much injured by it that the method adopted by the farmers to become rid of it was "either by cutting the crop frequently early in the season (this applied perhaps more particularly to Lucerne) and thus preventing the Dodder from fixing itself, or by paring and burning the surface, and thus destroying at once both the crop and the seeds of the parasite."† But, although admittedly a source of great vexation and pecuniary loss to the farmer, the limits of the Didders in gardens can be easily circumscribed, and they then become objects of interest as well as of beauty.—S. P. E. S.

LONDON'S LESSER OPEN SPACES—THEIR TREES AND PLANTS.—No. 10.

USED in its broad sense, Lambeth is a name that covers a suburban district of something like twelve square miles, but, in its commoner much-narrowed application, it refers to a space adjacent to the Thames between Southwark and Vauxhall. Its level is still low, and at one date much of the ground was really marsh, Lam-by-the, the primitive form, meaning the "haven of mud or dirt," antiquaries say, though Dr. Ducarel, friend of Tradescant the gardener, angrily denies this, much objecting to its being so styled. However, the moist soil, by the adoption of certain measures, was made suitable for horticulture, and in the seventeenth century it looked very different from what it is, a site of factories, of benevolent institutions, and streets of houses, mostly fifth or sixth rate; we may indeed find a Paradise Street and a Pleasant Place, but they have lost the characteristics that gave their names. Vine Street tells us of a spot somewhat elevated formerly above the marshy flat, where once throve a plantation of Vines, and in the Stuart times Lambeth yielded abundant fruit and vegetables also; Asparagus, Peas, Melons, and Apricots are notable of these. The mention of sundry trees indicates the existence of some dry spots amongst the lowlands. Mulberry trees there were, too; our ancestors seemingly had more liking for that fruit than we have, and a Queen Elizabeth's tree of course, many Mulberries being associated with that Royal dame, planted perhaps in her honour, as we read she had a weakness for sitting under one of them when in fruit. Of Lambeth Walnuts, a memory yet lingers in its Walnut Tree Walk, though the trees have been felled. Few gardeners know that some of our familiar evergreens, after they had been grown here and there as rarities in noblemen's gardens, were first fairly cultivated at Lambeth by the Tradescants and their friends. The younger

* "Flora Scotica," Vol. II., p. 1090.

† London's "Gardener's Magazine," Vol. I., pp. 79 and 197.

Tradescant, indeed so Parkinson tells, brought here, in 1628, from Virginia the first exotic Ferns seen in England—viz., *Cystopteris bulbifera* and *Adiantum pedatum*.

The teeming population of Lambeth has now, however, a few open spaces, small or large, which afford a breath of fresh air, with the sight of trees and shrubs. On the edge of it, in the Blackfriars Road, is Christchurch and its churchyard, an enclosure not yet formally open to the public, but occasionally accessible. This is a space of historic interest, for the ground was once part of the old Paris Garden, and the manor was so named from an owner thereof in the twelfth century. Richard II. very sensibly issued an order during his reign, that the butchers of the City, instead of leaving their garbage to produce unpleasant odours about London bye-ways, should have it carried across to Paris Garden, where it might be profitably employed in manuring the land. Afterwards this garden became a place of recreation, then the church was built, overlooking the main road, about 200 years ago. The oldest trees along its sides are Planes and Poplars; two of the latter, on the south side, are remarkably large and densely leafy for London trees. Younger trees are scattered about of both kinds, the flourishing condition of these indicates that the subsoil is still moist. For this reason, too, in spite of the dry season, the Lilacs and sundry evergreens promiscuously set along the walks, with a flowering Ribes here and there, have not yet the dinginess of a London summer. The few beds in a grassy space are formed on the favourite plan of a shrub centre, the outer circle being of Pelargoniums, Pyrethrums, and Lobelias. Such a winter and spring as that of 1886 tries metropolitan evergreens, but the only kind that seems to have suffered here is a variety of the Cypress. Aucubas, however, are not benefited by the Lambeth air, nor are the Bays, but about London these and most vergreens would fare better if the leaves were now and then well syringed.

The churchyard of St. John's, Waterloo Road, is a space of about an acre, and since 1877 a great boon to a crowded locality, though mixed in aspect, because some folks who held an interest in old tombstones objected to their removal. Hence a number of these are stacked along part of the boundary wall, others are arranged on the sides of the church, where they form the background to rockeries. However, there is not here followed the practice of another London churchyard, where I saw rockeries contrived out of bits of smashed-up monuments, but these surroundings interfere with the garden-like appearance of the ground, and its rockeries, which might be improved by a judicious assortment of plants, have at present only feeble-growing Sedges, some Ferns and Flage, with a few Sedums. Attempts are made to hide some of the tombs by training over them Ivy and Virginian Creeper, but the latter is only a covering in the summer. Grassy slopes are in the centre, enclosing flower beds of small size chiefly filled with Pelargoniums, the borders along the sides have a variety of shrubs. One large space was totally occupied by Marigolds, exhibiting a mass of bloom, if of a gaudy character. Amongst the shrubs some fine Lilacs were noticeable, also several Rhododendrons, though they seldom bloom here; there have been planted recently a number of Hazels, and a few Abeles are scattered about. This is a species of Poplar one does not often come across in London, yet it will flourish as well as the commoner black and white species. Of annuals, only part of those sown generally live. This year Stocks and Nemophilas stood as the survivors, and a few Nasturtiums. Of trees this ground possesses a double line of Planes in proximity to the church, probably in middle life from their size, and north of it several more of superior size and age, which doubtless owe their vigour to the freedom this tree has from the attacks of trunk-piercers of the insect race, so destructive to town Limes and Elms.

The open space of two acres abutting on Lambeth High Street, though only a public ground since 1884, already has more of the appearance of a garden than the one above described, perhaps because it is scant of shrubs and has no trees. It had some, which have died long since. Indeed, as the gardener remarked, evergreens and many other species have little chance, for it is not merely smoke that has to be contended with just there, but a combination of sulphurous and acid vapours from surrounding factories. He had planted some Poplars and Planes, but had doubts about the result; yet, somewhat to his surprise, the half-hardy and tender plants which had been arranged in the central beds during May by free watering came into flower and braved the foul atmosphere well. Mignonette had been freely sown, and had succeeded. If allowed to re-sow itself, the plant will perfume town gardens year after year. The cockney's "London Pride" and "Sweet William" were represented. Sunflowers were also showing their tall flower-heads, beside straggling whitish-grey Lilies. My attention was called to several clumps of *Hypericum calycinum*. These were full of leaf, but did not promise for bloom.

To the Metropolitan Public Gardens' Association the public is indebted for the conversion of St. Mary's Cemetery, Newington (on the edge of Lambeth) into a pleasant, well-arranged garden, fortunately with purer air than the last-named; it has about the same extent. Trees it does possess; the oldest are Limes, of which there is a line, planted perhaps early in this century, and many young Poplars, with some juvenile Robinias, which I hope may make wood, as the species is a favourite. Elders of various sizes were going out of flower, but had been full of bloom here as everywhere in 1886, when from some cause this shrub flowered in unlikely spots amongst London smoke; so, too, the Privet, which exhibited many blossoms in this Newington ground, though they withered off without forming berries. It is a species that has seldom the chance of doing its best to attain to size, being principally set for hedges, though I have visited a lane at Old Wandsworth, in Surrey, where there are examples of the Privet that have really almost attained to the dignity of trees. Folk used formerly to plant about London churchyards the

"weeping Willow," as the cockneys would style it, though it rarely lived any time. Within this enclosure are some Willows, that testify to its moisture below; they belong to the narrow-leaved *Salix helix*. Amongst the evergreen shrubs dotted about, varieties of the Holly were conspicuous, also Thujas and Aucubas making fair progress, but few specimens of the Bay had their leaves somewhat scant. Of the red-flowered Ribes there were goodly bushes which must have been planted many years since. It was curious to see how thickly some patches that had been sown with grass were now covered with the common Yarrow, which would have rejoiced a herbalist of the olden time. He might have shared my views about the Monkshood, which was scattered along one border, and which folks will introduce in public gardens, objectionable as it is. The Yuccas had not long been planted, but they were a suitable contrast to some light-foliaged species around them, and Chrysanthemums were sufficiently numerous to give a display of flowers when most are going off. Amongst the grass there have been made small beds of quaint devices, chiefly filled with varieties of the Pelargonium, edged with Lobelia.—J. R. S. C.

REVIEW OF BOOK.

How I Managed and Improved my Estate. London: George Bell and Sons, York Street, Covent Garden, 1886.

IN a well printed neatly bound volume of 103 pages a series of papers is republished that originally appeared in the *St. James' Gazette*, and which conveys some interesting and useful information upon a highly important subject. The author, who gives neither name nor *nom de plume*, deals with the subject in eight chapters—1, Choice of an Estate; 2, Underwood; 3, Timber; 4, Building and Quarrying; 5, Making Grounds; 6, Farming and Shooting; 7, Fishponds and Aviaries; and 8, A General Concluding Summary. He states in the opening chapter that

"Some twenty years ago, having obtained the means of satisfying my longing to return to country life, in which I had been mostly bred, I gave up my London occupations and looked about for a piece of land which would suit me; and, after several journeys into different parts of Sussex, my favourite county, I found an estate, or rather two contiguous estates, just after my mind. I gave £14,000 for them; farmed them and managed the woodlands almost entirely myself, obtaining during the whole time I held the land considerably higher returns than I could have obtained in rent; sold a thousand pounds' worth of timber; spent about £5500 on improving house and land; and within fifteen years afterwards had parted with the place, which I had made too grand for my use, for £27,000: the whole transaction leaving me £9300 richer than I was before in money, and richer also in a great deal of pleasant experience and country knowledge, some of which it may be worth while to note down."

After describing the estate he proceeds to give some account of the way in which the improvement was effected that enabled him to dispose of it so advantageously. A considerable portion of the outlay was devoted to the ornamentation of the estate, but attention was devoted to the improvement of the estate in other directions. For instance, the home farm of 100 acres was managed under the direction of the bailiff, producing £200 per annum, at the rate of £150 as rent and £50 as interest on the £800 or £1000 capital required to work it. This arrangement was made with the bailiff, who it would appear found the terms very satisfactory to himself, as, says the author, "After returning me my stipulated minimum of rent and interest thought the good will of a 'public.'" Rearing pheasants was found to be the least profitable undertaking, as the birds cost £2 each by the time they were bagged.

In the chapters on Underwoods and Timber some useful instruction is furnished, as the following extracts from the first named indicate.

"In Sussex, which is perhaps the most thickly wooded county in England, it is the custom, as elsewhere, for landed proprietors to keep the bulk of the woods in their own hands. But tenants of Sussex farms, which in most cases contain a certain extent of Hop land (usually in the proportion of about one acre in twelve or fifteen), are commonly allowed to hold a piece of woodland sufficient to supply them with Hop-poles. Each acre of Hops (of 1250 "hills" to the acre) requires 3750 poles; and these in ordinary farms where boiling in creosote is not practised, have to be entirely renewed once in four or five years; the time varying with the more or less durable nature of the poles, according as they consist of Larch, Oak, Chestnut, Ash, or Birch: the Sussex woods commonly consisting mainly of the four last, Larch scarcely ever appearing as Hop-poles, except on especially highly cultivated farms, on account of their greater cost. For Larch-poles do not grow crop after crop from "stubs" as the other kinds do, but have to be planted on new ground every ten or twelve years. Growing Larch poles is sometimes a very profitable thing, a single acre having been known to bear a crop of twelve years' growth, worth £120; but capital and long waiting are required for their culture, and for these Sussex farmers are not famous.

"There can be no fixed proportion on Sussex farms between woodland and Hops; for one acre of woodland may grow ten times as many poles as another, according to its freedom from or embarrassment by larger timber, the number and health of the "stubs," and the nature of the wood. Ash and Chestnut give by far the most abundant cuttings. In one wood I know there is about half an acre of unmixed Ash which gives more poles than any five acres of the remainder.

"The woods had been long neglected. They carried only £4000 worth of timber upon ground which might have borne ten times as much; the underwoods had been cut, crop after crop, at the usual intervals of ten or twelve years, without any proper supervision to secure that a sufficient number of "tillers" should be left for future timber. It is a rule, when patches of underwood are sold, that the purchaser cuts it down, but leaves all trees which may have sown themselves since the last cutting standing; and, should there not be enough of these seedlings to supply the gaps in the large timber, then a healthy shoot from a "stub" should be left here

and there; but my woods consisted wholly of more or less ripe timber and underwood, and there were therefore large planting operations before me.

"The underwood also had suffered greatly by neglect. Though mostly standing upon inclines, and therefore easily drained, the old trenches had not been cleared for fifty years or more, and could scarcely be traced; and much ground which ought to have borne good crops of Ash or Chestnut had run into Willows, poor Birch, stray Dogwood, and other marsh-loving growth. The roads for carrying cut timber, if ever there had been any, had disappeared; so that whenever timber had been felled (and in Sussex it is the custom to fell the fully ripe trees every time the undergrowth is cut) the 'stubs' had been damaged by horses, cart-wheels, and the heavy trunks which were dragged over them at random.

"Altogether these woods—though as beautiful as could be wished to look upon (for outside, a wood looks much the same whether it bears £40 or £400 an acre in timber), and though better as pleasure grounds and for sport than if the planting were perfect—afforded as much room for improvement as heart could desire; and I set about it in earnest as soon as I came into possession. I made timber roads through the larger woods. This is a simple work, consisting merely in the formation of wide alleys by the removal of trees and the roots of the undergrowth.

"The drainage I found very costly; for, the ground being uneven, the open trenches had often to be made very deep. I therefore drained only the worst spots. Planting could, of course, only be done as spaces of ground were cleared by the annual cutting of the underwood—that is, on my ground, at the rate of from ten to twenty acres a year.

"During my period of possession I planted about 120,000 forest trees. This sounds like a great undertaking; but it was really a much less portentous thing than those may imagine who would infer that, after thirty years or so, I should have found myself, in return for a commensurate outlay, the proprietor of that number of well-grown timber-trunks, in addition to those already standing in my woods.

"In planting up old underwoods, at least five plants out of ten expire under the difficulties of their position. When the 'stubs' are wide apart, the ground is usually choked with rank grass and Briars, which cannot be kept down, and which stifle all but the strongest young trees before they are able to strike their roots well and get their heads into the air. When the growth of underwood is comparatively thick, and there are consequently no grass or Brambles, the same result is produced by the growth of the original underwood itself, which in a couple of years overtops and excludes from the needful air and light all but the most sturdy youngsters.

"Nor is the expense of planting such a number of trees anything like what the reformers of our land laws and other persons of exclusively urban experience might suppose. For planting up underwoods, Larch, Ash, and Chestnut (Oak, Birch, and Beech are very seldom used) should be about 4 feet high; and for such plants you pay at the best forest nurseries from 25s. to 30s. a thousand. An active man is able to plant, if I remember rightly, from seven hundred to a thousand a day.

"It is of no use to plant underwoods with trees of larger growth than I have mentioned. They would be more likely to be suffocated than the smaller ones; for a year's addition to the age of a plant renders it much less able to strike its roots freely. A Larch of 2 feet high, planted in the open, would probably soon overtake one of 5 or 6 feet, if planted beside it and at the same time. Of all trees Ash is the most profitable to plant for underwood, if the soil be rich and not too dry or damp; for it grows so fast that it can, in favourable circumstances, be cut over twice, while other kinds of wood only give one crop. I had a plot of Ash on a piece of rich ground that gave a crop of poles every five years, which was worth at the rate of at least £40 an acre. But this was a rarity.

"Successful planting requires close and intelligent supervision. When left to an underling, twice as many trees die as when the work is properly seen to, especially if the work is 'piece work'—that is, paid for by the number of trees planted. I found that nothing but my almost constant attendance on the spot could prevent the planters from doing more than take out a 'spit' of earth, stick the tree in one side of the hole, and chuck the lump of earth back again, settling it with one or two stamps of the heel. Again, if the matter is left to the ordinary labourer, thousands of plants, lying ready for planting, may be killed in one night of frost or one day of dry east wind, by neglect of the precaution of covering them with loose earth or at least with a sack or two.

"All planting operations, whether for underwood or large timber, are a work of considerable time. Underwoods do not begin really to pay until about twenty-six years after planting—that is to say, at the third cutting. The first cutting—though this valuable point is commonly omitted—should be two years after planting, in order to force the young stubs to send up several shoots instead of one.

"This first cutting is practicable only in a perfectly new plantation, or where the old underwood is so thin that it may be all cut over again, together with the new plants, two years after a crop of underwood has been taken. This, of course, involves a loss of two years' growth in the next crop; but I found by experience that this sacrifice was well worth making, not only because it allowed of the cutting of the young plants, but still more on account of the immense advantage they thus obtained from the admission of light and air, the want of which is so fatal to the new trees planted among underwood."

A chatty readable style is adopted, and many amusing anecdotes are scattered through the pages.



KITCHEN GARDEN.

SPRING CABBAGE.—These are now the most important of young crops. A quantity of these should be grown in every garden, as nothing

will compensate for their absence in spring. They are very often the only vegetable in the garden in April and May. The earliest of the plants were placed out some time ago, but the second-sized ones are now large, and others should be planted. It is always a good plan to have at least two plantations of them, and although the seed may have been sown at the same time, there is always some difference in the size of the plants. In fact it will be observed that some of these in the earliest seed bed are quite small now, and these ought to be looked after until the spring, when they should be placed out to succeed those planted now. We find the slugs and snails very troublesome this season. We have heard of some young Cabbage plantations being completely spoiled by them, and many blanks may have to be filled. A dusting of fresh lime in the morning or evening will destroy a great many pests, and if it is found that they continue to be destructive, hand-gathering ought to be resorted to. Dutch-hoe between the first planted Cabbages, and when they are fairly established draw a little soil up to their stems with the drag hoe.

HARVESTING ONIONS.—This work may now be completed. Those of the White Spanish types generally die sooner than such varieties as James's Keeping and other strong upright growing sorts, and where any of these are still fresh and strong in growth they should have their stems twisted and laid over. It will be found that those of this description have very thick necks, as the small-necked ones have almost dried up in the stems, and as the thick ones are bad keepers they should be placed by themselves for immediate use. When first taken under cover all Onions should be placed in some cool airy shed until quite dry, and they may then be stored in an Apple or any other room without emitting any disagreeable odour. In fact we always keep our Onions on the floor of our Apple room during the winter, and no harm results from it. Before putting them in the shed pull the greater part of the stem off, and the rough loose outer skin can also be cleared from them. Where they are intended for roping the stems should be left a little longer than where this practice is not carried out. There need be no hurry in doing it, as this is work which can very well be done on any wet day during October or November. We never rope our Onions, as they keep equally well without, and although they may look well hanging in strings, we do not value this kind of decoration. Autumn Onion seed has germinated uncommonly well, and the plants are very healthy. Sprinkle a little soot or lime amongst them occasionally to prevent the grubs increasing, and Dutch-hoe amongst them when the surface of the soil is dry.

LATE POTATOES.—These are now well matured and should be lifted and taken in. The disease is more prevalent amongst them than the early ones, but the crop is a good one. Only dig when the soil is dry, and it will fall from them when they are cast up on the surface. When dug on the forenoon of a sunny day they will soon dry and be in good condition for taking under cover in the evening. Place them in an open shed if possible for a few days, then turn them over, and in doing so remove any showing signs of disease, but none of the latter should ever be hoisted in the first instance. The good ones will keep well in any dark place where the temperature does not fluctuate very much or rise too high.

TOMATOES.—Plants which fruited under glass early in summer and until lately have been thrown away. We are now gathering fruit from the open air, and some late plants in pots will soon be taken into a warm house to induce them to ripen a crop until far into winter. The open air plants, which are growing wherever there is a strip of bare wall between the fruit, are now very useful, as the fruit from them is well developed and finely flavoured. Do not allow any fresh shoots to form on them, and cut away some of the largest of the leaves where they are shading the fruit. Give them abundance of liquid manure, and should the weather become rough and cold place a light over them. If ripe fruits are very plentiful now bottle them for the winter or convert them into sauce. Do not allow ripe fruit to remain on the plants after it is matured, as it hinders the development of the later fruit; which are very important. If any surplus plants have been standing about in small pots all summer, transfer them into larger ones now, place them in a genial atmosphere, and they will produce a useful crop about Christmas. Laxton's open air Tomato is the best of all for out of door culture.

MUSTARD AND CRESS.—These will not grow freely in the open air after this time, and seed should now be sown in shallow boxes or on the surface of some bed or border under glass.

FRUIT FORCING.

PEACHES AND NECTARINES.—*Trees Ripening the Fruit in July.*—The trees will now be approaching the resting period, and the foliage is falling. They should be kept somewhat drier at the roots, but if the lights have been removed, the trees being in a condition to allow of it being done in August, they should remain off some time longer, in fact until heavy rains and snow. If the trees are very strong it is not wise to remove the lights, and if the growth is complete and the wood not ripening kindly, form a trench about one-third the height of the trees from the stem, and detach all roots down to the drainage, leaving the trench open for ten days or a fortnight, when it may be filled again and made firm. This will cause the growth to harden, and the sap will be concentrated on the buds, and help to plump them. Young trees only will require this, but older trees that have the wood very strong should be root-pruned and have the roots wholly or partially lifted before the leaves have all fallen. In the case of weakly trees remove the old soil from over and amongst the roots, supplying fresh rather strong loam with about a tenth of crushed bones added, and a twentieth of wood ashes or charred

refuse, making it firm, and following with a good soaking of weak liquid manure. It will cause the trees to form fresh roots and invigorate them, also preventing the buds falling.

Trees Ripening the Fruit in August and Early September.—Cut out the wood that has borne fruit, leaving no more than can be freely exposed to light and air. Cleanse the foliage of dust and red spider by water directed with force from a garden engine or syringe, and repeat occasionally. If there is scale promptly apply an insecticide, also against red spider and brown aphides, which sometimes attack the younger parts of the wood in autumn. There must not be any lack of moisture at the roots, therefore apply water to the inside borders as necessary to keep them from becoming too dry. Afford abundant ventilation, and if the wood is not ripening well keep the house rather warm by day, and throw the ventilators open at night, but a warm, close, moist atmosphere must be avoided, as that would be more injurious than otherwise.

Late Trees.—These trees will need to have the shoots thinned where too crowded, and those which have borne fruit should, as soon as the fruit is gathered, be cut out to a successional shoot at the base. This with free ventilation and gentle fire heat in dull weather in cold localities, and with the growth strong, will assist in ripening the wood, which is of primary importance as regards next year's crop. Avoid a too-dry condition of the borders. The trees must not lack moisture, and yet a rather drier condition is advisable whilst the fruit is ripening. Some soft netting will be useful to save any fallen fruit, but it must be looped up in small pockets to prevent the fruit bruising each other. With an examination of the fruit every morning by an experienced person, the ripe fruit being removed, there is no necessity for the netting. The fruit is better gathered before dead ripe, and kept in a light airy fruit room until required.

Figs.—*Early-forced Trees in Pots.*—Examine the roots, and as it is not advisable to increase the pot room, remove a few inches of soil from the base of the balls, cutting back the roots, and replace, fresh fibrous loam, about a sixth of old mortar rubbish, and a sprinkling of crushed bones, good drainage being provided. Remove the loose surface soil also, and supply the above compost, adding a fourth of well decomposed manure. Afford a good watering, and place the trees where they can have plenty of air with shelter from heavy rains and snow. This is only available for trees that are not in large pots, as those that are in large pots and have been stood on brick pedestals to prevent their sinking with the fermenting leaves require different treatment. In their case all the decayed, indeed every particle of the old Oak or Beech leaves, should be removed, and remove all the surface dressing from amongst the roots with a hand fork, shorten the strongest roots, and the drainage being attended to the trees are placed in position on the loose brick pedestals, and the soil surface-dressed with the compost named firmly rammed into the pots. Supply water to settle the soil, and after this keep the house cool, dry, and well ventilated until the time of starting in November or early December. This is a preferable plan to repotting annually, as the trees are less likely to cast their first crop of fruit, and it is not advisable to disturb trees in 18 or 20-inch pots at the roots more than can be helped. Trees that are not in as large pots as desired, or when it is thought advisable to increase the root space, a liberal shift may be given, the sides of the ball being loosened with a hand fork, and any straggling roots cut back, also the matted roots in the drainage. Provide good drainage, using the same kind of soil for potting as previously advised, and ram it as hard as the ball, the soil being well moistened before the potting is proceeded with.

Succession Trees.—Houses in which the trees are ripening off second crops of fruit must be kept drier as the days become shorter, a little fire heat being necessary to admit a free circulation of air and prevent damp. Particular attention must be given to the exposure of the wood to the full influence of sun and air, thin all soft and useless wood, and allow the points of the shoots to stand well up or out to the glass and light. Supplies of water must be discontinued for borders that have been properly mulched and watered up to the middle of this month.

Lifting Over-luxuriant Fig Trees.—Gross-feeding as Figs are, they are in rich borders apt to come too strong, and in that case prepare for lifting them as soon as the leaves have begun turning yellow; indeed, it should be attended to as soon as the crop is gathered. Carefully lift the trees, cut back all long roots, reserving the fibrous only. Good drainage is necessary. A foot of brickbats with a thin layer of old mortar rubbish over, and then a couple of feet depth of soil composed of good turfy loam, a sixth of old mortar rubbish, and a similar proportion of road scrapings, with about a twentieth of crushed bones, forms a suitable and durable border for Figs. Place the compost together firmly so as to insure a sturdy short-jointed growth. Spread out the tree roots evenly, work in the soil amongst them and make it firm, placing them in layers as they rise, and keeping them well up, not covering the topmost more than 2 or 3 inches. The soil may be moist when used, but it ought not to be wet. Give a moderate watering, and keep cool and dry. A border of 4 to 6 feet width is very much better than a wide border, and the pit-like borders filled with rich soil that becomes a sour mass impervious to air are very unsuitable to Figs. What is wanted is firm sweet calcareous soil that will admit of the free percolation of water and air through and retain the manurial elements essential to the production of fine Figs.

MELONS.—*Latest Plants.*—While the fruit are swelling water must be given. Keep the roots active with tepid liquid manure occasionally, and supply ammonia to the atmosphere by damping available surfaces in the evening. Keep a moderate moisture by syringing in the morning and at closing time, at which time a light syringing of the foliage may be practised if the weather be bright. Remove all superfluous growths as they appear, and admit air early or at 75°, keeping the bottom heat steady

at about 80°. Maintain a night temperature of 65° to 70°, 70° to 75° by day, and 85° to 90° with sun heat, closing sufficiently early to run up to 95° or more.

A little fire heat so as to insure a circulation of air constantly and prevent the deposition of moisture on the fruit, and no more water at the roots than is necessary to prevent flagging, will accelerate the ripening and do much to improve the flavour. In dung-heated pits and frames no water will be required, but keep the sides well lined and leave a little air on at the back at night. Keep the fruit well raised above the surface of the bed. Any fruit wished to be kept for a time should be cut with a portion of stem and placed in a dry airy room, or if wanted ripe in a warm house in the full sun, and they ripen better than in cold frames.

THE FLOWER GARDEN AND PLEASURE GROUND.

Early Frosts.—Already, September 15th, we have had a slight taste of winter, and although the frost has done no harm, there was enough to warn us to prepare for more severe weather. If not already done, stock plants of *Alternantheras*, *Iresines*, *Coleuses*, *Heliotropes*, *Lobelias*, *Ageratums*, *Tropæolums*, *Centaureas*, or all that are usually propagated from cuttings in the spring should be potted up. It is a mistake to lift any with large balls of soil about the roots, as this is generally of too close or cold a nature to suit pot plants during the winter. Neither should large pots be given them, as they will form but few fresh roots before the spring, at which time they may be given a shift in order to encourage the production of abundance of soft wood. When first lifted, these old plants are best stood under frames in a cool position for a few days, or till recovered somewhat, and must be very carefully watered, or the more delicate of them will damp off badly. If damaged by frost they are still more difficult to winter, and all injured parts must be removed whenever they decay, or it will spread to the sounder portions. In nearly every case we prefer to prepare stock plants during the summer, as these are invariably much the most serviceable in the spring. Dahlias should now be looked over, and the labels attended to, as later on, or after they are disfigured by frosts, it is a difficult matter to correctly label them. Seedlings especially ought to be attended to in this respect, as only the best of these should be preserved. In many instances a little timely attention saves much subsequent confusion and annoyance.

Summer Chrysanthemums.—With us these are exceptionally fine. For mixed borders they are simply invaluable, as they flower abundantly from July till frost intervenes—that is, if planted on fresh or well-manured ground. *La Petite Marie* is a little gem, and *St. Mary* is also a most useful white sort; and there are abundance of other good sorts to choose from, and which may be alluded to at some more seasonable time. What we have to say now is that young or spring-struck plants are much the best. Strong old plants may escape slugs and frosts during the winter, but unless lifted in the spring and freely divided they will form too many weakly shoots, which are not the best for long and continuous flowering. We left all ours out the first winter we had them; but never again, as we lost them all, principally by slugs. Already a certain number of each sort worth growing next season are carefully potted up, and after being stood in a cool shady position for a few days were transferred to the conservatory and greenhouse. Here they are very effective, and will be till the successional and late sorts are in full bloom. They will then be cut down and stored closely in a cold frame, and protected from severe frosts only. In the spring we shall have abundance of good cuttings, which will be struck in boxes and soon transferred to the open ground.

Shrubby Calceolarias, Violas, and Gazanias.—The two first named are the most popular, but all are useful, and where many thousands of summer bedding plants have annually to be put out a good percentage of *Calceolarias* and *Violas* especially ought to be included. They can be wintered in closer compass and with much less trouble than the majority of bedding plants, and this with us is a strong recommendation. A good time to put the cuttings in is either late in September or the first week in October, later than this there is a risk of the *Calceolarias* and *Gazanias* being injured by frost. We prepare a series of frames for the cuttings, but where fewer are required one or two frames or a few handlights may suffice, the preparation and after treatment being the same in every case. No bottom heat is required, and all that is necessary is to stand the frames on a well-drained hard bottom, placing inside about 1 foot of semi-rotten stable manure or leaves, making this firm, and disposing on the top of it about 6 inches of any light loamy soil, facing this over with 2 inches of fine sandy soil. In the case of the *Calceolarias* the preference should be given to sturdy flowerless shoots, cutting to a joint and trimming off the lower pair of leaves, and none should be more than 3 inches in length. They ought to be dibbled in firmly up to the first pair of leaves, and about 3 inches apart each way, as fast as they are made, for if allowed to flag badly they do not quickly recover. After being lightly watered in, the glass should be put on and the cuttings kept carefully shaded from bright sunshine. When the nights are mild a little air may be admitted, the aim being to keep the cuttings fresh and green and to check premature weakly growth. They strike in about eight weeks, after which they ought to receive abundance of light and air whenever the weather permits. The best *Viola* cuttings are those obtained from the base of the plant and which have not reached their flowering size; but the tops of the old shoots may also be easily struck and form good plants the following spring. The former may be pulled off the old plant and require no trimming, while the tops can be treated similarly to the *Calceolaria* cuttings, and in cold frames or under handlights every one of them will strike. Young shoots of *Gazania splendens* may be struck as simply as *Calceolarias*, and are also very easily protected from frosts.

THE BEE-KEEPER.

NOTES ON THE HONEY SEASON.

EXTRACTORS.

BETWEEN September 4th and 13th in this part of Scotland we had heavy rainfalls, high winds, with an almost sunless sky. One day only during that period the sun shone, and then for a short space of time only. This has been disastrous alike to bees, crops of every kind, and threatening a total destruction in some places to the Potato crop. The other day of Potatoes sufficient for a family of four, only one was free from the disease. There has been only one day upon which the drones flew, the result being that only a few late-bred queens are fertilised. I have sufficient for my own use, but some friends must be disappointed. The loss in bees is but a trifle when compared with the crops lying upon the sodden soil caused by exceedingly heavy rains.

The honey of this year here in the north is not only scarcer than that of last year, but is as a rule very much thinner and inferior in quality, most of it being quite subject to the extractor. The above report applies to a wide area, and in many places there is not even a surplus of honey on account of the low temperature. Where my bees stand at the Heather we had a fall of snow on May 13th that completely buried the sheep, and frost and rain have been seldom absent since.

My own harvest of super honey is much below the average, but in consequence of my nuclei being in good condition to keep as stocks my harvest of drip honey will be as large as usual, most of my summer stocks being available for that purpose, otherwise I should have had to be content with much less honey. Others who have followed this system of management have also found the nuclei plan a good and profitable one. There is one difficulty—How are we to dispose of our surplus bees? Most bee-keepers of my acquaintance are of the same opinion as myself, that plenty of bees in a hive now are as good and better than too many, which would be the case if we preserved all our surplus bees. I can get rid of all I have, but I hear from many persons that their surplus bees are condemned to the brimstone pit. "What inhuman treatment!" some will say, but our system of management is in reality the proper one of preserving bees, but they will by-and-by accumulate, so much so that there will be no demand for surplus bees, and what is to be done with them? If we were to pursue the course of spreading brood, stimulative feeding, and other questionable manipulations so much advised at the present time, we should, instead of having surplus bees to dispose of, be in want of many.

I have said that the honey of this year is thinner than is usually the case, yielding to the extractor. When such is the case, and the bee-keeper has nothing but stocks to extract from and for stock, having no nuclei in reserve, then doubtless it is an advantage to save the combs by its use. I have always advocated that the merit of everything in connection with bee husbandry should be proved by actual test or experiment. Once only at a show have we seen this done. It was with Abbott's Little Wonder extractor, from which, after much puffing and blowing, the honey could not be moved. Nothing but pressing will extract the best samples of honey; but when that cannot be had, it is well to use the extractor. To ripen thin or unsealed honey by the aid of heat spoils its flavour, and so does extracting the thinner and lighter portion to be found on the top. Nevertheless, it is better to skim it off and give it to the bees than use heat to volatilise an essential element of honey.

Are honey extractors perfect in their arrangements? I do not think so. Some are made to take one comb and others four. Some are driven by gear wheels, others by a simple crank. I prefer the silent movements of the latter,

but with oscillation in both sorts when driven, and without showing any contrivance to steady or fasten them, and with the outlet close to the floor, as shown at all exhibitions, I am sure there is room for improvements in them. I would therefore suggest that extractors should have the cone-shaped bottom inverted, having its apex at the bottom. This arrangement would allow all the honey to flow freely towards it, which should have a spigot attached. The cylinder should be supported by three stout legs sufficiently high to allow a drainer and receiver to stand underneath, and means so that the whole thing could be fastened to prevent oscillation. Of course a stout girder of triangle or square shape must be riveted firm to support the revolving cage, which I would prefer to take one comb only, but steadied by an automatic water balance. The above is my idea of what an extractor should be like.

Lately a cluster of Cyprian queen cells were forwarded to a gentleman by rail. When lying amongst other parcels at the railway station they commenced piping briskly, which greatly surprised the officials, who could not understand the strange sounds, but concluded it was a musical box playing foreign airs.—A LANARKSHIRE BEE-KEEPER.

HOME MARKETS FOR OUR HONEY.

SOME months ago a controversy raged upon the most proper measures to be taken for promoting the ready sale of honey produced by cottagers and the other bee-keepers of this country. The end was, it will be remembered, that a British Honey Company was formed, the chief supporters and, in fact, originators of this Company being leading members of the British Bee-keepers' Association. The avowed object of the Company was to facilitate the sale of honey by bringing together the producer and retailer by means of the wholesale dealer. At the time I protested against any such method being resorted to, and pointed out that at the present day a directly opposite policy ought to be essayed and a serious effort made, not to introduce a third participant in the reduced profits of bee-keeping, but by reducing the number of hands through which honey had to pass before reaching the consumer, enable the producer to receive the difference saved by knocking off one of the intermediate profits—by, in fact, bringing together, if not the producer and consumer, at any rate the producer and retailer without the intervention of any wholesale dealer, thus saving the profit which must otherwise be lost to the producer by the intervention of a fourth man. Protests had, however, at the time but little effect, and the Company was floated amid the self-laudation of a clique who were well represented by "George Walker, Wimbledon," who, in reply to criticisms, asked those who condemned the enterprise to wait until sufficient time had elapsed to prove the wisdom or folly of establishing such a Company on a large scale for the sale not of British honey, but also of foreign bee produce, thus effectively and for ever keeping down in price our honey, because on the slightest scarcity of British honey they are at liberty to go to other markets and purchase what they require.

Now, if this Company had not been formed by professed friends of the bee-keeper there would be little objection to what would in that case be a perfectly legitimate commercial enterprise, with the object of securing a good dividend to the shareholders and fees to directors and other officials; but when we find the Chairman of the B.B.K.A., and Editor of the *British Bee Journal*, and others in somewhat prominent positions installed as Directors of the Company, it is absolutely necessary to criticise so very doubtful a policy. By their co-operation they give not an implied but an express sanction to the acts and ways of doing business of such Company, and authorise the purchase and sale of foreign honey to the detriment of home bee-keepers. They say that this is not so, and that the powers taken to trade in foreign honey are only to be used when English honey is scarce; but surely this means that however scarce honey may be in bad seasons, prices will vary but little from what can be obtained in the best years.

It behoves us all to consider whether in following the advice of such interested persons we are not acting inimically to the true interests of *bonâ fide* bee-keepers as opposed to the bee-keeping shareholder and director. At present, indeed, the matter might have been allowed to lie dormant, but I see in a paper read by the Rev. J. L. Seager at the second day Conference at the Colonial and Indian Exhibition on the 4th of August it is written thus, "There is one point to which I especially wish to call your attention, and upon which I much hope we shall have a discussion. I refer to the increasing difficulty of selling honey. To a 'small

extent' the honey companies are doing this. But what we want to do is, if possible, to bring the consumer and producer together without the intervention of the middleman, who practically absorbs all the profits." This is surely a most severe criticism by an eminent bee-keeper and a member of the B.B.K.A. on the policy of the establishment of the Honey Company; and the concluding sentence is still more pregnant with meaning, for it is written, "The cry is constantly making itself heard, 'We cannot sell our honey.'"

There were present at this meeting Messrs. T. W. Cowan, Walker, Hooker, Garratt, Lyon, and others, and Captain Campbell, Revs. G. Jenyns, and Hon. H. Bligh, and not one of these bee-keepers had a single word to say in favour of the Company. The Company, then, is a failure so far as the attainment of the object dangled before the eyes of the bee-keeping fraternity. But how can this be? The cry is, "We cannot sell our honey." Yet every week since the Company was established an advertisement has appeared in the *British Bee Journal* something after this kind: "British Honey Company.—Wanted, honey." Now, here is something strange: the Company always wants to purchase and the producer always wants to sell. This can only be accounted for in one way, and the cause is very evident; in fact, Mr. Seager in his address virtually gives the reason when he says, "the middleman practically absorbs all the profits." In a few words, the price offered is so low, and the margin between the price offered to the producer and received by the middleman from the retailer is so great, that while a large profit lies in the hand of the middleman, the producer is left with a miserably small profit, and the middleman takes away the remainder of what ought to be the reward of his labour and expenditure. The necessity for a good dividend and the powers of purchasing foreign honey have beaten down the price of honey more than some of us imagine. It is hard that a company floated by the producer should be worse than useless to its parent.

Bee-keepers must endeavour, if they want to sell their honey at fair prices, to create a local demand. They must dispose of all the honey they possibly can at home, and if the attempt is honestly made they will succeed far beyond their most sanguine anticipations; but if the trouble of doing this in any of the many ways lying open to them is too great, they must be content to receive what a honey company will give, and see the profits of bee-keeping continually reduced until at last in despair they forswear bees and bee-keeping as unprofitable, and take up some more remunerative industry.—FELIX.

(To be continued.)

MR. HEWITT AND SIMMINS' DRY-FEEDING SYSTEM.

In your issue of August 19th, page 170, "A Hallamshire Bee-keeper"—otherwise Mr. John Hewitt—makes the following strange statement: "Feeding bees on dry sugar alone as a practical thing was my idea, and I made a big fight for it in the *British Bee Journal*, and no one tried to 'sit' on the idea more than Messrs. Abbott and Simmins, and yet within six months the latter claimed all the credit, and said he had been working at the problem for years, though his published letter, not six months before, entirely repudiated the theory. In fact, it was entirely owing to his scouting the idea of bees being able to consume dry sugar that I came out in its defence, and told what I knew. But Mr. Simmins began to make a trade of it, and advertise his 'dry sugar feeders,' and when I wrote to the "B. B. J." pointing out his inconsistency, I was quietly dropped, and he was allowed to figure as the man."

To say the least, the claim put forth by Mr. Hewitt is peculiar and contradictory, and there will be no difficulty in showing that not only is he entirely in the wrong, but that he has not even introduced a practical idea in regard to feeding bees. Your readers, like myself, will be surprised to hear that Mr. H. can lay claim to having originated the present system of feeding dry sugar to bees, which embodies the principle of giving uncooked sugar in specially prepared feeders, and which alone are adapted to the purpose.

My own system was introduced as the result of practice, and is suitable only for stimulation and storing during such times as it is desirable so to do. I wish it to be distinctly understood that I have on no occasion advised my plan for winter feeding, neither do I recommend feeding in winter in any way, believing it, as proved by my own experience, always possible to store bees properly before the season arrives. Yet, it so happens that all Mr. Hewitt can lay claim to is that in the autumn of 1883 he advanced the long since exploded theory that bees could exist during winter upon dry combs devoid of liquid stores, and one or more dry slabs of candy, he considering that the whole of the stores could be extracted and sent to market, while the bees would thrive until spring upon about 6 lbs. of candy made drier than is usual.

Mr. Hewitt knows as well as I can tell him, that it was not until after his theory had been advanced that I made any mention of the subject, and my letter will be found in the "B. B. J.," vol. xi., page 195, wherein I show that not only would the process lead to disaster, but that it would be simply impossible to get the combs entirely free from honey so late as September 20th, and moreover the act of exposing the pollen, in addition to the wet combs and frame of candy, would cause unseasonable breeding

and activity, the very thing which Mr. Hewitt hoped would not be the case. If mild for a week or two after inserting the candy, which often is the case at the date named, the same would be stored as syrup, or at least the balance would be, after the requirements of the extended brood nest had been attended to, and some other consumed in building new combs in the candy frame, as well as the wide space given the bees to cluster in, and who does not know at what expense of vital energy comb-building is carried on late in the year? Mr. Hewitt, doubtless, knew afterwards to his own cost.

In fact, it was due to the hint given by some who had begun to try it that Mr. H. then advised the insertion of candy at a later date, finding his first legs fast failing him. How the starving process he then recommended, and the addition of candy at a later period succeeded, is best shown by his own silence the following spring. Mr. Hewitt was so satisfied that the whole thing would succeed, and that he had given a new plan of wintering, that he was going to hang the whole of his stocks upon this candy peg. No doubt there were many who hoped to hear from the author of this new theory after his bees were wintered (?), but that the result was not published no practical bee-keeper was surprised. There was nothing new in giving candy in frames, as the same thing had been done for years before Mr. Hewitt mentioned it, and if he has now settled down to the knowledge that candy can only be relied upon in winter when given as an addition to liquid stores, then his own good sense ought to tell him that he has no claim either to a new method of wintering or a new way of using candy.

In one instance I notice that Mr. H. does mention that he could conceive no better way of feeding bees from spring till autumn than by inserting frames of candy, but it may interest him to know that long before I knew his name I had been remarkably successful with candy poured into frames for stimulative feeding, but this—called by its right name "candy feeding"—has been entirely superseded in my own apiaries by my present plan of dry feeding with the enamelled sheet to induce the necessary moisture.

The strange part of it is how Mr. Hewitt could have mixed this wintering theory and all the troublesome candy making with the system which I have made public after the problem had been reduced to practice, a process, too, which I recommend only to be used during the months of activity, and by which there is no cooking or other preparation needed. Mr. Hewitt is fully aware that I have not advertised my feeders for sale, and that he should say that I have done so cannot be wondered at, considering the heedless expressions of which he seems to be capable. Had he been only as consistent and honourable as it appears he would wish others to be, there would now be no need for me to remind him of his own position in relation to the theory presented by him.

Mr. Hewitt's statements with regard to wintering on candy alone will be found in "B. B. J.," vol. xi., pages 119 and 155, and though he may feel disappointed that the theory did not meet with general approbation, he may rest assured that the bee-keeping public would willingly give him his due if only he could show that he had introduced something worthy of their notice. At the same time I would ask him in a friendly spirit to abstain from attacking others in the manner that he does, and, above all, before doing so to be certain that he has truth and justice on his side.—S. SIMMINS.

THE CANADIAN EXHIBIT.

THE exhibit of honey from Canada, which is now on view at the Colonial Exhibition, will be likely to cause alarm to timid bee-keepers who already are dissatisfied, and not without reason, at the small price offered for honey, even though the honey harvest of this year has been much below the average. It is no use trying to shut our eyes to the fact that the sale of this 40 tons of honey will sensibly affect the price of English honey. Still we venture to think that the ultimate result will be to the advantage of English bee-keepers, and for much the same reasons as the late exhibition of the B.B.K.A. has done good in bringing before the public mind the great advantages of honey as food, and the capabilities of our own country for supplying a large amount of honey. At present honey has a very limited sale, and until we can educate the public mind to the fact that it is a necessary food, and not merely a luxury to be indulged in by the few, so long will there be a difficulty in securing honey even at the low price offered by the honey companies and the dealers.

To take a parallel case, we can well remember tasting our first Tomato nearly thirty years ago, and thinking how unpleasant it was. For many years after this there was little or no demand for this fruit, but within the last few years the demand for Tomatoes has enormously increased, and it is said to be a better paying crop than Grapes, and as far as we are concerned we never pass by this fruit, especially in the form of salad.

It would be difficult to point out the reasons for this change, but the fact remains that the consumption of Tomatoes is steadily increasing. So with regard to honey, if the public will take it into their heads to use honey in larger quantities than they have done, there will be no difficulty in finding out the real value of honey.

The public press is a very good indicator of public opinion. Though the B.B.K.A. have held several shows in London during the last twelve years, very slight notice was taken of these shows, for bee-keeping was looked upon more as a hobby than an industry. But with regard to the last Show, the Press quickly recognised the fact that there was something in bee-keeping, and all the leading papers had editorials on the subject, pointing out the great strides that had been made during the last few years.

At present the supply far exceeds the demand, and, except for sections, there is not much business done in honey, as last year's stocks have not been exhausted. The Canadian exhibit will help to educate the public mind, and when once the demand is established there will be no difficulty as regards the supply either from home or abroad.

This naturally brings us face to face with the question, Can we compete with Colonial or foreign bee-keepers? In the *Pall Mall Gazette*, September 17th, there is an account of bee-keeping in Ontario by Mr. Jones, one of the deputation from the Ontario Bee-keepers' Association. He estimates the average honey harvest at £100,000, and the average yield of honey from a hive at 30 lbs., though cases have been known where 100 to 600 lbs. have been obtained from one hive in a single season. This, of course, is an enormous yield, and we have never known a hive in Great Britain that could touch this limit, though Mr. Cowan averages 100 lbs. from his fourteen hives, and we met a bee-keeper in Wales this summer who had taken 200 lbs. from one hive, and still had the Heather honey harvest to increase this yield.

The price of honey in the comb at Ontario is 1s. a pound, while extracted fetches 8d. Taking into account the cost of carriage, commission, &c., these prices are too high for the English market. Last year the wholesale price of good 1 lb. section honey varied from 6d. to 8½., and extracted from 4d. to 6½. per lb. This year prices have slightly stiffened, as the harvest has been deficient, but a large bee-keeper offered to supply sections at 6s. per dozen, and said that he could at that price secure a very good profit for himself. Everyone knows that the question of carriage is the burning question of the day, as far as farm produce is concerned. Foreign fruit is underselling our home fruit, because the railways give greater facilities for conveying fruit from the continent, and charge less for the freight than they do for fruit from the Kentish orchards, with the result that the farmers are allowing their Plums to decay on the trees, as it does not pay to send them to Covent Garden. If the Canadian bee-keepers can get their honey delivered in London at less cost than we can get honey delivered, say from Lancashire, it will be a bad look-out for the British bee-keeper; but though they may be able to undersell us as far as extracted honey is concerned, it will be a more difficult task to drive our section honey out of the market.—A SURREY-SHIRE BEE-KEEPER.

TRADE CATALOGUES RECEIVED.

J. Broadhead & Sons, Leeds.—*Illustrated Catalogue of Brushes.*
Hooper & Co., Covent Garden.—*Bulb Catalogue for 1886.*
James Cocker & Sons, Sunny Park, Aberdeen.—*Catalogue of Bulbs.*
H. Cannell & Sons, Swanley, Kent.—*Catalogue of Winter-flowering Plants and Bulbs.*
P. J. Kane, Kells, Meath.—*Amateurs' Annual List of Bulbs.*
Wood & Son, Wood Green, London, N.—*List of Horticultural Specialities.*
William Rumsey, Waltham Cross, N.—*Catalogue of Roses, Trees, and Shrubs.*



* All correspondence should be directed either to "THE EDITOR" or to "THE PUBLISHER." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

Old Dahlia (*W. B. Hartland*).—We have noted the Dahlia in another column, and we are obliged to you for the return so promptly sent.

Bedding Plants (*A. L.*).—The Lobelia to which you refer is probably Snowball, and the Alternanthera is either *A. versicolor*, which is very dark in colour, or *A. latifolia*, which also has large leaves, but of a much lighter shade.

Gardener Leaving (*Kittie*).—The best time for the gardener to leave with the chance of obtaining another place would be in March, and notice could be given expiring in that month. You will probably have no difficulty in securing the services of such a man as you seem to require for £60 or £70 per year.

Growing Pines (*Ferndale*).—An ordinary Cucumber frame is of no use for growing Pines. You will require a structure with at least two compartments, one for succession, and the other for fruiting plants, also a close pit for suckers. Without these conveniences and some practical knowledge Pines cannot be grown satisfactorily.

Pear Congress (*E. F.*).—We are not aware that the report to which you refer has been published.

Muscat of Alexandria Grapes Decayed (*J. B.*).—The berries are partly decayed round the base of the stalk, in consequence of the house being kept too close and moist. It is a very common occurrence this season, also "spotting," which arises from the same cause. The Grapes sometimes crack next the footstalk, and that arises from the Grapes being grown in too dry an atmosphere, and afterwards or when ripening keeping them too moist. The only remedy is to maintain a drier atmosphere, keeping a little warmth in the pipes so as to admit of a free circulation of air in the day-time, and sufficient at night to prevent the deposition of moisture on the berries. The inside border should also be covered with some dry straw or fern so as to prevent moisture rising.

Muscat of Alexandria Grapes Shrivelling (*A. B. C.*).—The cause of the berries shrivelling is a deficiency of moisture until they were sufficiently advanced in ripening, with probably a deficiency of heat and of light to insure their thorough maturity. The check consequent on the breakdown of the heating apparatus a month ago is sufficient to account for the shrivelled condition of the berries, as they were imperfectly swelled and ripened. Nothing will now restore them to freshness, but we presume the shrivelling is confined to the small berries, the larger ones being plump. Make sure that there is no deficiency of moisture in the border. If fairly moist it is sufficient; if dry afford a supply, covering with dry material so as to prevent evaporation.

Wintering Fan Palm (*Gardener*).—If it be *Chamærops Fortunei* it may be wintered safely in an outhouse or stable stall if it only have a fair amount of light, and the roots are protected with hay or straw, only giving sufficient water to keep the soil moist. Should it be a *Lantana* it would not winter safely in such position; but the other is nearly hardy, and would succeed outdoors in sheltered positions, but it ought not to be put out at this time of year. Keep it until next spring in the outhouse, and then give it a trial.

Planting a Slope (*Merchant*).—The material forming the slope being stiff clay it will not answer to make large holes in it for planting the shrubs, as they will only become receptacles for holding water; or if the soil is so porous as to allow the water to escape there will only be the good soil in the holes for the shrubs to grow in, and they will languish in a year or two after planting. We have tried the plan and found it fail. The best plan would be to mix some ashes with the clay to the depth of a foot, which will improve its texture, and then cover the whole of the slope with a foot or 18 inches depth of good soil. Common Laurels pegged down might be the most suitable. Rhododendrons would not suit the position, and it is doubtful if the soil would be adapted for them.

Rods of Vines (*Idem*).—You ought to cut away the rods of the old Vines as soon as the leaves have fallen, and the young canes may be trained in their place. It is not wise to treat the Vines on the annual rod system. We should cut the present canes back to a third the length of the rafter, and depress their upper part before the eyes start, so as to cause the lower buds to break, and when they have done so the cane may be secured in position. Train up a shoot from the upper part in continuation of the rod to the top of the house, and this may be treated similarly to that of the previous year. In this way you will have a new rod in three years, the fruit will be borne on spurs after the first year, and they can hardly fail to fruit satisfactorily for some time, only do not keep them too closely pinched, and do not prune closely. The long rod system is not suitable for general practice, but a modification of the rod-and-spur system is most advisable as securing the best results. The system advised by "Experientia docet" seems most suitable to your case, as you get no fruit, therefore allow more growth.

Fruiting of the Loquat—Culture of Anonas (*Lord Ashbrook*).—The Loquat (*Eriobotrya japonica*) produces its flowers and fruit from the points or terminal buds of the shoots, and to get these stout and well matured is the chief point in its cultivation. It requires plenty of light. The Anona requires a stove or tropical temperature, 60° to 65° in winter, with 10° to 15° rise from sun heat, 70° to 75° in summer by artificial means, and a day temperature of 80° to 90°, or 95°. The Anona attains to the dimensions of a tree 20 or more feet in height, and will require to be grown in a tub, or preferably planted out in a border. This, however, need not be done until the plant is too large for the pot, when it may be placed in a tub or planted out in a well-drained border, having 2 feet depth of turfy loam, with a sixth of old mortar rubbish and a twelfth of charcoal. The plant may be allowed to grow until it forms a good stem of say 6 feet, when it may be stopped so as to form a head, and afterwards will not require any pruning, only in removing irregularities, so as to form a compact head.

Cape Gooseberry Treatment (*W. S.*).—*Physalis edulis* or Cape Gooseberry is a half-hardy or greenhouse perennial, and requires to be grown in a greenhouse, or will succeed in a frame, or even outdoors in summer. We should shift the plants into 6-inch pots now, using good loam, with a fifth of well-decayed manure and a sixth of sharp sand well incorporated, and draining efficiently. Pot moderately firm, but not very hard, and supply water carefully until the plants are established, when freer watering is necessary, none being given until the soil becomes dry, but before the foliage flags, and then afford a thorough supply sufficient to show at the drainage. Keep the plants in the 6-inch pots during the winter in a light position, and afford the requisite support to the growth with stakes, or the growths may be trained to a trellis. The fruit is used for confections, some persons being very fond of the sweet acidulous flavour. It is of easy culture, and readily raised from seed. The plants may be shifted into larger pots in spring.

Renovating a Lawn (*Tennis Player*).—As the lawn is used for tennis it is difficult to know when to sow the grass seeds, but now is perhaps the best time, as when the seeds are sown in spring the ground is used so soon after sowing that the grasses have scarcely time to become established, therefore sowing is best performed during moist weather in September. As you have, however, a quantity of other weeds to grub up, and as these ought to be cleared off before sowing, it may in your case be advis-

able to defer sowing until spring, making the most of the autumn for eradicating the weeds. In February, or as soon after as the weather permit, apply a dressing of well-decayed manure, spreading it evenly, and letting it remain until the close of March, then with an iron rake scratch the ground well forwards and backwards, which will assist in getting in the manure and form an open surface. Early in April remove the loose portions of the manure by raking it evenly, and any stones should at the same time be removed. This will form a good tilth for the grass seeds, which may be sown early in April, with an early prospect of rain, and on a fine or calm day. The proper kinds to sow are *Festuca duriuscula*, 4 lbs.; *Festuca ovina tennifolia*, 2 lbs.; *Cynosurus cristatus*, 3 lbs.; *Poa nemoralis* semper-virens, 2 lbs.; and *Poa trivialis*, 1 lb., a renovating mixture of the choicest grasses for one acre. If the lawn is not used for tennis then add 6 lbs. *Trifolium repens*, and 2 lbs. *Trifolium minus*. This is a capital addition, the whole for a very bare lawn not being too much; but if there is a good growth of grass already the quantities may be reduced one-half, and if used for tennis the *Trifoliums* must be very sparingly used, as they keep long damp towards the end of the season. Rake lightly over after sowing, roll it firmly, and spare the lawn as much as practicable early in the season, so as to give the grasses a chance of becoming established.

Orchids Spotted (Pat).—The spot of which you complain is often brought about by the soil at the roots of the plants having become sour. It is also due to too much water at the roots of the plants and in the atmosphere. Nothing will cause the plants to become spotted sooner than a close saturated atmosphere. The temperature appears to have been high enough. A low temperature when the house is too moist would very soon bring about this state of things. We advise you to keep a drier atmosphere, and the plants slightly drier at their roots, also provide a circulation of air daily when the weather is genial; at the same time you must avoid cold draughts, for they are detrimental. If the soil is not sour at the roots and you follow the directions given the plants may be grown out of the spot another year. If the soil is sour repot the plants at once, remove carefully the old material and wash the roots in tepid water, and then place them amongst fresh soil. Water must be applied with great care after potting until they commence growing and rooting in spring. When the air in the house holds the greatest possible amount of aqueous vapour in suspension, or, in other words, when it is fully charged with moisture, the two thermometers on the hygrometer will stand at the same level; but as the amount of moisture decreases the wet bulb thermometer will sink, and the greater the dryness of the atmosphere the greater will be the difference between the two thermometers. During the day, if the dry-bulb thermometer stands at say 76°, the wet-bulb thermometer should be about 69°, and at night if the dry thermometer registers 70° the wet one should be about 66°. These figures are given as examples, but they will be found to vary considerably with the different changes of temperature and seasons. By means of a set of tables published by "Glaisher" in pamphlet form you can find the ratio of the weight of vapour which the air actually contains, to that which it would contain if it were completely saturated. We advise you to procure Mr. Castle's book on Orchids, published at this office, price 1s., post free 1s. 2½d., which will give you further useful information, not only on the subject of hygrometry, but on the history and culture of Orchids generally.

Renovating Fruit Trees (Young Gardener).—A start should be made at once, and all puny growths that have been made during the season cut clean out of the trees. Reserve the best and strongest. These should have been shortened back to within 4 inches of the main stems at midsummer, or soon after, and then all sub-growths broken out at this season of the year. No time must be lost in clearing out superfluous shoots, and shortening others so that light and air can penetrate to the fruit spurs, which are now probably hidden from light by a crowded mass of growths. If pruning has been done as you describe they cannot well be in any other condition, unless the trees are very thin, and even then the necessary light and air will not reach those portions of the tree from which the fruit another year is expected. These growths only serve to rob the trees of their fertility and give endless labour during the winter in pruning. About the end of October, before the leaves fall, you may finally prune the trees. Then, or as soon as their fruit has been gathered, commence to root-prune them. If this has never been done since the trees were planted you must exercise great care and caution in the operation. Under such circumstances cut a trench a good distance from the stem all round the trees, and then work the soil back until you come to the roots. Shorten the strong ones sufficiently to check the trees, which will cause them to form fruit buds in abundance next season. If the trees have not been lifted for a good time we advise you not to approach too near the stem, but leave a good ball of soil undisturbed. Trees lifted or severely root-pruned would require two or three years to recover sufficiently to bear any but poor small fruits. If the soil is poor procure some good fibry loam, and add about one 6-inch potful of half-inch bones to each barrowful of soil, one-seventh of decayed manure might also be added. Three or four barrowfuls or more of this may with advantage be placed about the roots of the trees. When you have completed this mulch the surface with manure, which can be forked into the ground in spring if appearance is an object, or allow it to remain on the surface during the summer. This would be best if you could do so. By lifting early while the trees have their leaves upon them they make a few fresh roots before winter, and start into growth with greater freedom the following spring. After the trees have been once lifted they may as they become too luxuriant be more severely dealt with. They will have made a quantity of fibres, and the cutting away of a good quantity of roots will not cause such a great check as would be the case if you did this at first after being undisturbed for many years.

Names of Fruits.—The names and addresses of senders of fruit to be named must in all cases be enclosed with the specimens, whether letters referring to the fruit are sent by post or not. The names are not necessarily required for publication, initials sufficing for that. Only six specimens can be named at once, and surplus fruits beyond that number cannot be preserved. (*Nemo*).—1, Doyenné Boussou; 2, Pêche; 3, Bishop's Thumb. (*W. W.*).—Plums cannot be named correctly unless a portion of the young wood and the stalks accompany the fruit. 1 is Cox's Emperor; the other two we cannot name without these requirements. (*T. Stephens*).—1, Springrove

Codlin; 2, Sussex Peach; 3, Not known—worthless; 4, Beurré Capiaumont; 5 and 6, Not known. (*W. F. C.*).—Denbigh Plum. (*H. E. R.*).—Dunmore Plum. (*Pomona*).—1, Pigeon; 2, Hawthornden; 3, Warner's King; 5, Small's Admirable; 4 and 6, Not known.

Names of Plants.—We only undertake to name species of plants, not varieties that have originated from seed and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in firm boxes. Slightly damp moss or soft green leaves form the best packing, dry cotton wool the worst. Not more than six specimens can be named at once. (*Amesbury*).—*Crataegus coccinea*. (*J. F., Collumpton*).—The yellow flower is *Lysimachia vulgaris*. The other is *Euonymus microphylla*. (*W. H.*).—1, *Erythrina Crista-galli*; 2, *Laurus Camphora*, the Camphor Tree, and not the "Victory Laurel," which is *Ruscus racemosus*.

COVENT GARDEN MARKET.—SEPTEMBER 22ND.

TRADE quiet, with no alteration. Supplies heavy.

FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples	1 6	to 4 0	Melon	1 0	to 2 0
Cherries	0 0	0 0	Oranges	6 0	12 0
Currants, Black ..	0 0	0 0	Peaches	2 0	4 0
" Red	0 0	0 0	Pine Apples English ..	3 0	4 0
Figs	0 6	0 9	Plums	1 0	2 0
Grapes	0 6	3 0	St. Michael Pines ..	4 0	6 0
Lemons	10 0	15 0	Strawberries	0 0	0 0

VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Artichokes	1 0	to 0 0	Lettuce	1 0	to 1 6
Asparagus	0 0	0 0	Mushrooms	0 6	1 0
Beans, Kidney ..	2 0	3 0	Mustard and Cress ..	0 2	0 0
Beet, Red	1 0	2 0	Onions	0 3	0 0
Broccoli	0 0	0 0	Parsley	2 0	3 0
Brussels Sprouts ..	0 0	0 0	Parsnips	1 0	2 0
Cabbage	1 6	0 0	Potatoes	4 0	5 0
Capsicums	1 6	2 0	" Kidney	4 0	5 0
Carrots	0 4	0 0	Rhubarb	0 2	0 6
Cauliflowers	3 0	4 0	Salsify	1 0	1 0
Celery	1 6	2 0	Scorzonera	1 6	0 0
Coleworts doz. bunches	2 0	4 0	Seakale	0 0	0 0
Cucumbers	0 3	0 4	Shallots	0 3	0 6
Endive	1 0	2 0	Spinach	3 0	4 4
Herbs	0 2	0 0	Tomatoes	0 2	0 6
Leeks	0 3	0 4	Turnips	0 4	0 0

PLANTS IN POTS.

	s. d.	s. d.		s. d.	s. d.
Aralia Sieboldi ..	9 0	to 18 0	Ficus elastica ..	1 6	to 7 0
Arbor vitae (golden)	0 0	0 0	Fuchsia	2 6	6 0
" (common) ..	6 0	12 0	Foliage Plants, var. ..	2 0	10 0
Arum Lilies	0 0	0 0	Heliotrope	4 9	6 0
Bedding Plants, var. doz.	0 0	0 0	Hydrangea	6 0	12 0
Begonias	4 0	9 0	Ivy Geraniums ..	0 0	0 0
Calceolarias	3 0	6 0	Lilium auratum ..	12 0	30 0
Cinerarias	0 0	0 0	" lancifolium ..	9 0	18 0
Cockscombs	3 0	4 0	" longiflorum ..	0 0	0 0
Crassula	0 0	0 0	Lobelia	0 0	0 0
Cyperus	4 0	12 0	Marguerite Daisy ..	6 0	9 0
Dracena terminalis, dozen	30 0	60 0	Mignonette	3 0	6 0
" viridis	12 0	24 0	Musk	0 0	0 0
Erica, various	0 0	0 0	Myrtles	6 0	12 0
Euonymus, in var. ..	6 0	18 0	Palms, in var. ..	2 6	31 0
Evergreens, in var. ..	6 0	24 0	Pelargoniums, scarlet, doz.	3 0	6 0
Ferns, in variety ..	4 0	18 0	Pelargoniums	6 0	9 0

OUT FLOWERS.

	s. d.	s. d.		s. d.	s. d.
Abutilons	2 0	to 4 0	Lily of the Valley, 12 sprays	0 0	to 0 0
Ageratum	2 0	3 0	Marguerites	2 0	6 0
Arum Lilies	4 0	6 0	Mignonette	1 0	3 0
Asters	0 3	0 6	Myosotis	1 6	3 0
Bouvardias	0 6	1 0	Pelargoniums, per 12 trusses	0 9	1 0
Camellias	6 0	9 0	" scarlet, 12 trusses	0 3	0 6
Carnations	1 0	3 0	Roses	2 0	9 0
"	3 0	6 0	" (adoor), per dozen	0 6	2 0
Chrysanthemums 12 bches.	3 0	6 0	" Tea	0 9	1 0
"	1 0	3 0	" red	0 3	1 0
Coreopsis	2 0	4 0	" Moss	0 0	0 0
Cornflower	1 6	3 0	Primroses, Yellow, dozen	0 0	0 0
Dahlias	2 0	4 0	"	0 0	0 0
Epiphyllum	0 0	0 0	Pyrethrum	3 0	6 0
Eucharis	2 0	4 0	Spiraea	0 0	0 0
Gardenias	2 0	4 0	Stephanotis	2 0	4 0
Gladioli	6 0	9 0	Stocks, various 12 bunches	3 0	5 0
Hyacinths, Roman, 12 sprays	0 0	0 0	Sunflowers	0 6	1 0
Iris	0 0	0 0	Sweet Peas	2 0	4 0
Lapageria, white, 12 blooms	2 0	4 0	Sweet Sultan	0 0	0 0
Lapageria, red	1 0	2 0	Tropaeolum	0 0	0 0
Lavender	4 0	5 0	Tuberose	0 4	1 0
Lilium candidum 12 blms.	0 0	0 0	Violets	1 0	0 0
" longiflorum, 12 blms.	3 0	6 0	" Czar, Fr., .. bunch	0 0	0 0



AFTER HARVEST.

WHILE giving due attention to the timely and careful preparation of seed beds for winter corn, let us not forget to

do our utmost to break up all the corn land having no layers, to stir it well with horse hoes, cultivators and harrows after the ploughing, to burn couch grass and other noxious weeds, and then to throw the soil into ridges with ploughs for the winter. If only this could be done before heavy rain falls we should have the land in the best order for the winter, and we should also be able to make splendid seed beds next spring, for the ridges are so fully exposed to the action of frost, rain, and wind, that in spring the soil crumbles before the cultivator like ashes. Do not mind what is said about the loss of nitrates from bare soil by the drains in winter. We want, and must have, clean soil always; we cannot afford to have weeds among our crops, for that involves a loss that is really serious. If we would have crops as full and abundant as possible there must be no weeds to steal fertility from the soil; strenuous efforts to destroy them now will be repaid by better results among our crops next autumn.

The mention of results reminds us that we are able to record a decided improvement in the quantity of our field crops this year, but we are not satisfied—far from it. Knowing as we do that it is possible to grow 80 bushels of Oats on an acre of land, we cannot and shall not rest satisfied with anything short of that. Our Winter Oats gave us a yield of 60 bushels an acre, weighing 2640 lbs., or 240 lbs. above the general average, and we have reason to hope that our Black Tartarian Oats will reach or closely approach our standard yield of 80 bushels. Ten quarters of corn per acre at £1 per quarter, with the straw to boot, is a paying crop; so too is a crop of Wheat, if only we can touch the possible yield of 6 quarters an acre, which at the lowest current rate means £9 an acre for grain only, and the straw is worth at least £2 more. If we concede the possibility of obtaining such crops, as we assuredly do, what is to be said about the low general average of the Wheat crop in this country? Loud is the outcry, bitter the complaints about foreign competition, yet if only such competition compels us to effect such improvements in practice as shall lead to results similar to those we point to, it will be a blessing rather than a curse to us. There can be no doubt that the low average of the corn crops in this country is owing to careless slovenly practice, combined with ignorance. Inferior seed frequently foul with Charlock and other weed seed, soil foul, wet, and poor, late sowing, and similar practice all round, all tend to seriously affect both the quality and quantity of the corn yield. When the depression came, what was the remedy which farmers were invited to adopt? In some few instances improvements in cultivation were recommended, but generally fruit farming, dairy farming, poultry rearing, and the cultivation of sugar Beet, were the substitutes for corn-growing, which we were invited to adopt, and now we have an attempt at the cultivation of Flax and Tobacco. We know of one attempt at the manufacture of Beet sugar in East Anglia which resulted in a loss which we have heard estimated at £100,000. The factory buildings still exist, but they are silent and empty, and we have no doubt that the late sugar company would gladly hand them over to the Flax and Tobacco men.

We have repeatedly shown that fruit farming was a rash speculation, especially for tenant farmers. This year it has failed to answer even among our famous Kent fruit growers. Recent accounts state that they continue to suffer from a plethora of production. At Ashford a farmer says he could only get 2s. a bushel for his Plums, although they were large and fine. The price would not cover the cost of gathering and sending to market, and they were left upon the trees. Another man at Mersham sold a crop of 60 or more bushels of Plums on the trees, but the purchaser did not go either to take them or pay for them. Other statements tell how large quantities of Gooseberries have been wasted because the price which the dealers offered were not sufficient to pay for picking, how there was an actual loss of £1 over the sale of 20 tons of bush fruit, and how two growers sent 48 bushels

of Plums to London, which were actually sent to be sold at Manchester, with the final result of a remittance of 4d. from the factor to the growers.

Again we say avoid speculative farming, and rather strive hard for improvement in the culture of what may be termed legitimate farm crops. Each field should be treated according to its particular requirements. Above all things do not forget the drains. We have several faulty ones marked for repairs, and certain fields or portions of fields are to have new drains. To make sure about this matter it is best to have a pocket plan of each farm done on tracing cloth, to mark any weak points in drains as they come under notice. Whatever outlay is involved now in drainage will prove an investment of capital upon which next season's crops will pay good interest. We regard drainage as the chief factor in profitable farming, for without it, no matter how deeply we stir the soil or how highly we manure it, our efforts will prove comparatively futile, our labour vain.

WORK ON THE HOME FARM.

Ploughs were set at work without the loss of a day after harvest, and the Rye sowing will be finished before this note is printed. If the sowing of this crop is not yet done upon the farms of any of our readers no time should be lost in getting it done at once. In southern counties Spring Oats should come next in order of sowing, our object being to have this crop forward in growth so that it may be ready if we should require it for the sheep in early spring. In the north midland counties Winter Tares should be sown in the last week of September, but in the south we have found this crop answer best if sown a fortnight later. We may add that we have proved this upon a farm some thirty miles due south of London, where, if sown in September, the Tares were liable to become so forward in a mild winter as to be spoilt by spring frosts. We intend sowing one field of Winter Tares after the Mangold crop is cleared and clamped, the tops being taken off on the land, the leaves being ploughed in and not eaten by sheep. We mention this as an important matter, for the leaf growth of Mangolds is so strong this season that the leaves will when ploughed in impart much fertility to the soil, and contribute materially to invigorate the Tare crop. The second crop of Clover is so abundant that the sheep could not eat it while it was palatable food for them, and we have had to have a considerable breadth of it mowed for stover. We considered this course preferable to seed-saving. We may mention that we have devoted a certain proportion of Clover for seed, but so many farmers are saving Clover seed this autumn that the price is likely to be low, and we prefer to make an extra quantity of stover as the more saleable article of the two. The new Clover layers sown with Barley have grown so strongly that we have had some trouble in getting the Barley straw, crowded as it was with Clover tops, ready for stacking. That has been done at last, and the Barley saved in sound dry condition, but plump, bright coloured Barley will be so scarce that it will probably command a high price, to the benefit of those farmers who are so fortunate as to possess it. Fattening sheep are thriving upon Clover, Coleseed, Mustard Grass, and Turnips, one or more of these articles of diet being available for them upon one or other of our farms. The growth of Mustard has been so vigorous that the tops are high above the heads of the sheep, but they are so fond of it that there is nothing left but the stalks' bottoms when they pass on to a fresh fold.

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude, 111 feet.

DATE.		9 A.M.					IN THE DAY.				Rain
1886. September.		Barometer at 234 and Sea Level	Hygrometer.		Direction of Wind.	Temp. of Soil at 1 foot.	Shade Temperature.		Radiation Temperature		
			Dry.	Wet.			Max.	Min.	In sun.	On grass	
		Inches.	deg.	deg.		deg.	deg.	deg.	deg.	deg.	In.
Sunday	..... 12	30.035	64.8	60.5	S.W.	59.4	68.7	54.3	100.2	48.4	—
Monday	..... 13	30.108	67.4	61.8	S.E.	60.2	77.0	61.9	115.2	58.7	—
Tuesday	..... 14	30.084	65.2	62.1	N.E.	60.8	79.2	53.4	115.2	43.2	—
Wednesday	..... 15	30.377	59.8	53.2	N.E.	61.2	67.8	55.8	107.7	52.4	—
Thursday	..... 16	30.476	54.4	49.9	E.	59.8	63.7	45.0	96.2	37.1	—
Friday	..... 17	30.294	57.8	52.2	N.E.	58.6	67.7	42.2	105.8	33.8	—
Saturday	..... 18	30.149	53.8	54.6	N.E.	57.5	69.4	44.9	106.4	38.5	—
		30.218	61.5	56.3		59.6	70.5	51.1	103.7	45.3	—

REMARKS.

- 12th.—Bright in the morning, and fair throughout.
 13th.—A fine morning and brilliant day.
 14th.—Another glorious day.
 15th.—Fine with short interval, overcast in a bright afternoon; fresh N.E. breeze throughout.
 16th.—Dull and overcast, with bright intervals in afternoon, and fine evening.
 17th.—A fine, bright, almost cloudless day.
 18th.—Another brilliant day.

A fine rainless week, with high barometer; easterly very warm days, and some cold nights.—G. J. SIMONS.



30	TH	Sale of Orchids at Stevens' Rooms.
1	F	Sale of Orchids at Protheroe and Morris' Rooms.
2	S	
3	SUN	15TH SUNDAY AFTER TRINITY.
4	M	Sale of stock at the King's Acre Nurseries, Hereford.
5	TU	
6	W	

BULBOUS PLANTS.

FROM the want of proper attention at the right moment it has too frequently happened that a season's bloom has been sacrificed, and many bulbous-rooted plants considerably weakened, by remaining in the same soil for several years. It has often been urged that to dry a bulb, tuber, or corm has a tendency to weaken it, and that it is not consistent with the conditions under which they exist in their native habitats. There is much truth in this statement: still, there are exceptions. In the first instance we have not to regard the plant as in its native haunts, for even there we do not find them uniformly distributed over any given area; on the contrary, we find some gathered in colonies, as though giving preference to certain localities and conditions of soil. We have then to deal with plants under cultivation for the most part as foreigners, and as existing under very opposite conditions to those under which they are found in a wild state.

Some plants and bulbs seem to take to our climate most readily, while others are not so well adapted to it. Some plants, too, lose all or the majority of their roots annually, and it is here where the line should be drawn as regards the beneficial results or otherwise of the drying-off process. For example, the *Liliums* taken as a whole commence to put forth new roots immediately on the ripening of the flower stem of the current season, so that if any new plantations of these are anticipated it should be done at that particular time. The common white garden Lily, *L. candidum*, it will be observed, at flowering time, and especially during hot seasons, is rendered leafless, and as soon as flowering is completed is the best time for its removal, as by carrying out the work at this time we do not sacrifice any new roots, which speedily form and which it is so important should be retained. I have known repeated instances where even gigantic bulbs of this particular species have been transplanted in full leaf and with new roots attached have taken a whole season to recover. The members of the genus *Lilium* are by no means benefited by the lifting and drying process, nor, indeed, are any bulbous or tuberous-rooted plants, provided the conditions under which they exist are such as they require; but at certain seasons it becomes an absolute necessity to adopt some means of protecting and preserving them.

Take for another example the genus *Narcissus*. There we have one entirely opposed to the *Lilium* family, inasmuch as it will endure a great amount of hardship, and provided the bulbs are lifted and dried at the proper time no amount of sun will injure them; indeed, in some species it is most beneficial to them, and becomes a primary condition in their successful culture. Among those that are benefited by a thorough periodical baking or drying may be mentioned *monophyllus*, *citrinus*, *triandrus*, and others. This drying may of course be accomplished without lifting the bulbs by simply placing lights over them, so that no rain may reach them, and this with a scorching sun overhead will have the desired effect. With the great multitude of *Narcissus*, how-

ever, this is not indispensable, for where soil and situation suit them they may remain for years undisturbed.

The species of *Chionodoxa* which lose their roots annually do not appear to be influenced one way or the other by lifting and drying, beyond the fact that those lifted come a little later in flower, I prefer to leave these undisturbed, for nothing can surpass, in the darkest days of spring, the lovely gem which during the past few years has been occupying such a prominent position among our earliest flowers. I have had occasion recently to lift a small bed of it, which have been only a season planted, and the remarkable progress made surprised me. This was more noticeable in *C. Luciliæ* than in *C. sardensis*, though all were similar when planted, and have been grown under precisely the same conditions.

At the present time plantings may be made of *Gladiolus Colvilli* The Bride, but those destined for early work in pots should have been planted earlier; the flowering is now some time past, the growths decaying, and the corms well matured. This is a most valuable pot plant, and indispensable to the bouquetist, as by successional plantings and introducing into warmth the earlier batches they may be had from February till June, in which latter month they flower naturally in the open ground. In all cases where this is grown, whether it may be in pots or in the open ground, a light sandy soil should be used; in cold, clayey, and retentive soils it soon deteriorates, and in fact should never be planted in them; in light sandy soils it grows freely and increases rapidly, and we cannot have too much of so lovely flowers. Too often this is left to be ordered with the general bulbs, such as *Hyacinths*, *Tulips*, &c., and in consequence time is lost. Those potted should be placed five in a 5-inch pot, for the corms are not any larger than a good sized *Crocus*, and these will be ready for introduction into slight heat by the middle of November, and by being brought on gradually will flower early in the year, and I am of opinion that its flowering period may be very much extended by adopting special means in its culture; at any rate, I mean to experiment in this direction, and shall have pleasure in recording the results hereafter.

All *Scillas*, *Muscari*, *Triteleias*, *Alliums*, *Brodias*, *Snowdrops*, and similar bulbs, should be lifted at once if not already done, if any new plantings are to be carried out, as if left in the soil too long they will make new roots, especially if the weather continues showery. While speaking of *Scillas* I may mention that *S. sibirica* (which has found a most formidable opponent in *Chionodoxa Luciliæ*) is sometimes very much damaged on cold stiff soils by a grub which bores into the bulb, and unfits it for flowering. In such a case it is better lifted and thoroughly examined, laid in the sun to dry for a fortnight, and, protected from rain, they will be benefited thereby. When replanting them use a fair amount of sharp grit about the bulbs.

I wonder if any readers of the Journal have experienced difficulty in flowering *Anemone fulgens* after the first year; if so a complete and thorough baking in full sun is the best cure. They undergo a complete rest, they shrivel, but as soon as they are again planted they rapidly swell and push forth roots in an incredibly short space of time. This is the cure for *Anemone fulgens* that will not flower, but which rarely occurs on other than stiff holding soils. On light sandy soils they do remarkably well, their increase is rapid, and the number of flowers increase in the same proportion as the size of the tuber. A three-months rest is not too much for them. It is also a noteworthy fact that not only is this scarlet Wind-flower benefited by a thorough drying, but also all similar tuberous species and varieties, by which I mean *Anemone stellata*, *coronaria*, and the like. These may be kept dry for months without vitality being impaired, and as soon as they are again placed in the soil they commence swelling immediately. As an example of the quick manner in which these *Anemones* answer to the soil, I may state that in the spring of the present year, about the end of March, I planted some 500 tubers of *Anemone fulgens*, dry, shrivelled scraps

they were too, and these had been out of the ground for at least eight months—viz., from July of last year to March of the present. In a little less than two months from planting time this little batch was a blaze of scarlet flowers, and from which not less than 700 or 800 flowers were taken. They occupied a warm south border in turfy loam, and were planted about 4 inches deep. If this could be followed up it would not be impossible to have these brilliant scarlet flowers at all seasons of the year. Of this much I am certain, that it cannot be so much dried or shrivelled as to be useless, therefore none should be cast away. I examined these a month ago, and judge my surprise at finding the tubers fully three times their size when planted, or above the average largest size obtainable from bulb growers generally. I find, therefore, that they must be lifted, for they will be overcrowded if I leave them another season. Almost all the treatment referred to for the Anemone will suit the Persian and Turban Ranunculus, for these, if ever so shrivelled, will be sure to push forth if not decayed. These may be lifted and thoroughly dried, after which place on a dry shelf till required for planting again. This latter may be done for the Turbans from October to March, and the Persians from January to April.

The lovely forms of the English and Spanish Irises are now at rest, the bulbs are fully mature, and the roots—i.e. fibres, decayed. It is noticeable in these two sections how much shorter-lived are the growths of the former compared with the latter, which are generally the first to flower, and the last by quite a fortnight to ripen their stems. Where any new plantings are required these bulbs may be lifted at once and dried for a few days or even weeks prior to planting again. The "chickens" may be either detached or remain with the mother bulb. I prefer the former, and plant the "chickens" thickly in small nursery beds for a season or two. Provided the bulbs are sound and plump when planted, they will endure with impunity a great amount of hard frost; the late spring frosts, however, sometimes nip the young growths. There are some lovely forms in both sections, and all are charming for border decoration in early summer or for cutting.

The various species of Tulips should be harvested at once, and given a fair rest and drying off. This is especially needful on cold soils or wet; on very light sandy soils they pass the winter very well indeed. All the species and forms of Calochortus and Cyclobothra need attention in lifting, drying, and storing for the winter season. These I invariably find deteriorate if kept in the soil all the year round, and as it is natural for them to lose their roots annually, in common with many I have herein named, they are better out of the soil than in it, at least when they have to contend with such a climate as our own.—J. H. E.

LATE GROWTH AND RESTING VINES AND FRUIT TREES.

I EXPECTED that the article upon this subject on page 255 of the Journal of September 15th would have brought out some of our fruit growers, but they appear to be silent. I trust they are thinking, however, and may yet favour us with their views upon this important subject. As you think the subject one not unworthy of further discussion I venture to say a few words upon it, more in hope of gaining something new than in anything new I may advance myself.

Let us take the Vine, as I think the principle that governs the proper resting of the Vine covers most other fruit trees bearing an annual crop, whether grown inside or out. To maintain Vines in a healthy fruitful condition for any length of time they must have an annual season of rest. This rest may be divided into two distinct periods. The first is from the time the fruit is off until the leaves fall and the Vines are pruned, and may be called "proper" or "strengthening" rest. The second is from the time they are pruned until started, and may be called "dormant" rest. The first rest I consider essential, the second non-essential, though beneficial when it can be had. Now, my experience and observation have led me to the conclusion that this matter is not yet thoroughly understood by the majority of practical gardeners. What is the prevailing practice? As soon as the fruit is gathered the heat is stopped and the ventilators opened; and Vines that have revelled in a strong moist heat while growing are subjected all at once to this unnatural treatment. This is con-

tinued until all the leaves are off, which is not long, as the sudden check and a few cold days and nights that we seldom miss in late summer and autumn soon bring them down, and the gardener considers his Vines are ripening off beautifully, and he will be able to give them a long season of rest, that they may be restored, built up, and thoroughly prepared for the work of another season. Such treatment I consider radically wrong and unnatural. How can Vines get reinvigorated after exhausting their energies to a certain extent in bringing a full crop of fruit to maturity after their leaves are gone? This is what many expect their Vines to do during the season of "dormant" rest, too many considering this period of rest the all-important one, and ignoring the other altogether. How many thousands of plants are forced annually for the production of cut flowers or for decoration, and how many of them are ruined, or at least crippled beyond the possibility of forcing the following season, simply through neglect after they have flowered? I am afraid a similar fate annually overtakes thousands of our fruit trees after the hard and trying work of maturing their fruits.

After the fruit is gathered is the time to treat our Vines kindly. Fire heat, except under unusual circumstances, should not be turned off; but rather, in the case of Peaches and such-like that may have been grown throughout the season without artificial heat, it ought to be applied to make sure of the perfect ripening of the wood. The same remark applies to Vines. Perfectly ripe wood must be hard and brown, but all brown and hard wood is not ripe in the sense of having a sufficient quantity of material stored up for the production of first-class fruit. Therefore keep the fires going, and ventilate freely but judiciously, the aim being to keep the foliage fresh as long as possible. Feed liberally. If the Vines are in good health and have plenty of good leaves late growths should not be troublesome, as the temperature here advocated is not a "growing" but a ripening one. I do not think that the few small and weakly growths that generally push in autumn are of much consequence either off or on, but if allowed to remain they must on no account crowd the principal foliage. As no fruit is on the Vine to exhaust its strength, every particle of elaborated sap must go to build up the strength of the Vine, plumping the buds, and thickening the rods. I believe the whole secret of successful fruit culture lies in the autumn treatment. I have known a Black Hamburgh Vine with one rod produce 50 lbs. of splendid fruit, bunches averaging 5 and 6 lbs., rod 15 feet long. The Grapes were generally all cut by the end of July. It then received about four months of the treatment advocated. I think it was your correspondent Mr. Bardney who some time ago contributed an article to the Journal upon the setting of fruit, attributing the failure not so much to the want of pollen as to improper treatment the previous autumn. I agree with Mr. Bardney on that point, as I believe the autumn is the time to prepare for a good set, a good crop, and good finish.—D. B.

THE REV. CHARLES P. PEACH.

IN MEMORIAM.

IN common with, I venture to say, all who knew him, the intelligence of our dear friend's death came with mingled feelings of sorrow and thankfulness—of sorrow for one who was in his days of health and strength ever the cheery companion and kind friend, and of thankfulness that his years of suffering were over and that he had entered into rest, and I feel that I should like to throw my small pebble on the cairn which many will seek to raise in their memories to one whom they so loved in life.

It is now some years since I was enabled in my wanderings to visit the beautiful vicarage of Appleton-le-Street, and there found not only the hospitable welcome for which Yorkshire is proverbial, but also much to interest me in its garden and surroundings. The bedding out system was then in its full glory, and although the slight murmurings which precede the storm were heard, our friend would have nothing of it. True, his bedding out was different from that of most people. There was a most careful eye to colour, an exact arrangement of the various shades of the same colour, and a careful selection of the varieties most suitable for the purpose that tended to give it an appearance of unusual harmony. This, however, was but a small portion of his work as a horticulturist. His fine trees, his houses, ferneries, borders, &c., all showed that he did nothing by halves, that he held to the maxim that whatever was worth doing at all was worth doing well; and combining with his practical skill a thoroughly sound scientific knowledge, he was able to master many difficulties and to initiate new modes of culture. He never took anything on the mere *ipse dixit* of another, but was ever prepared to prove all things, and was ever ready to impart from his stores of knowledge any information that might be needed.

The readers of the Journal in past years knew well the signature of "C. P. P.," and were always sure to meet something

worth reading. His papers were always marked with originality of thought. At times trenchant in his criticism without an atom of ill nature, and never heeding criticism himself; unlike some who, ready to find fault with others, are "mighty tetchy" when the same process is applied to themselves.

It is by his contributions to horticulture that he will be best known to the readers of the Journal; but in the North and East Ridings of Yorkshire he will be long remembered and deeply mourned as the indefatigable parish clergyman, the friend of all around him, and the helper of the needy; and by nearly every agriculturist in the Ridings he will be long remembered as practically the founder of one of the most successful agricultural associations in the county in which he always was the energetic organiser; while those who were ever associated with him as judge, as I have been, know how keen was his judgment and how rapid the conclusions which he drew.

Those who had the privilege of knowing him in private life will ever remember him with the kindest feelings, and will, I am sure, deeply sympathise with those who have to mourn him as husband and father.—D., Deal.

SEEDLING GLADIOLI.

WHEN I a year or two ago expressed my opinion that we should soon hear more of Mr. J. Burrell of Cambridge in the matter of Gladioli, I hardly anticipated that he would so soon come to the very front. As I have already said, the stand which he exhibited at the Crystal Palace was a most remarkable one for a first exhibit at a metropolitan exhibition. I regret that I was unable to see the one he showed at the Aquarium, not only because it was even better than his at the Palace, but because he had on it a large number of seedlings of his own raising. I received, however, from him the other day half a dozen blooms, which were testimony enough to the excellence of the strain on which he is working, for he is not trusting to chance fertilisation, but carefully hybridises and keeps a record of the seedlings, both male and female parents, and thus not only is enabled to trace the origin of his seedlings but also to see which give the best results.

Anyone who has grown Gladioli knows that there is a great deal of difference in their constitution; some kinds, such as Adolphe Brongniart, produce seed freely; others, such as Baroness Burdett Coutts, never have a seed pod. It is the same with regard to the production of spawn. In some varieties, such as Horace Vernet and Orphée, they cluster round the old corm as thickly as they can possibly get together in all shapes and sizes; others, such as Adolphe Brongniart, rarely produce any. Other kinds, again, are not only sparing in producing hulbs, but are liable to decay more than others. Thus Michel Ange and Madame Desportes are still quoted in the French catalogues at two francs and a half, while flowers which came out at the same time can be had for a few centimes. All this Mr. Burrell has noted in his hybridising; he has crossed the very best of the French varieties, and has obtained very valuable results. As he observes, it is remarkable what small bulbs of seedlings will produce good spikes of bloom, and, as all raisers of seedlings know, there are all sorts of surprises in store for them; there are a good many blanks, but also some prizes.

Of the six spikes sent me by Mr. Burrell, No. 1 is a fine white, the flowers closely packed together on the spike; this, indeed, is the characteristic of all of them, and with a beautiful lilac feathering in the lower petals. No. 2 is a delicately tinted light flesh-coloured pink, with deeper edges to the petals, and a creamy yellow lower lip, edged with pink. No. 3 is a large light pink flower with purple markings, the flower a little too loose, but still handsome, and quite as good as many beauties what have been put into commerce. No. 4 is a brilliant intense scarlet flower of fine form; the lower lip has a white blotch with deeper crimson feather in the centre. No. 5 is a pale-coloured flower with pink edges, but the lower petals are too narrow. No. 6 is a beautiful pink-coloured flower of the type of De Mirbel, with white lines in the petals, and a lilac purple feather in the lower petals. All these are remarkable for the denseness of the spike, and for the number of blooms expanded at one time. I have bloomed some of the new French varieties of last autumn, and wish I could say that they were as good as these, but they must have another trial, as I often find that flowers which I had discarded on their first blooming have afterwards turned out very well. I think Mr. Burrell is right when he says that the Gladiolus, like the Rose and other flowers, has its season—i.e., some varieties are good one year which fail in another, and I am now reverting to the culture of some sorts which I had discarded. One gladly welcomes such an enthusiastic grower as Mr. Burrell, as he is pretty sure to infect others with his enthusiasm.—D., Deal.

A REVIEW OF GRAPES AT SOUTH KENSINGTON.

GRAPES were shown in good condition at the Show on the 7th and 8th inst., but in some classes the specimens staged were of but moderate quality. Omitting the collections of Grapes from the schedule was considered to be a satisfactory arrangement, as a few large growers generally succeed in taking the prizes yearly, thus limiting the competition in the variety classes. Twenty bunches in ten varieties is a difficult number for any but the largest growers to cut at one time, thus inferior quality is often staged to make up the necessary dishes. Where prizes are offered

for two bunches in the most popular grown sorts all growers are placed more on an equal footing.

Taking the schedule in alphabetical order, the Alicante first claim attention, those taking first prize from Mr. Taylor being perfect in form of bunch and berry, but better coloured examples have been seen, there being a slight want of that density of bloom which characterises the variety when presented in its best condition. Alnwick Seedling was fine in quality, indeed this was the best all-round class, all being highly coloured. It is a pity this Grape is not of better flavour; at its best it is but second-rate. The first prize bunches from Mr. Taylor were splendid examples, the berries being large and even in size. This is one of the main features in a good bunch of Grapes of any variety. This variety invariably colours well, but in this instance the winning examples were superb.

Considering that Black Hamburgh is the most popular variety of Grape grown, seldom is it generally well shown. On this occasion it was poorly represented, none was above third-rate quality. All were wanting in colour, while those placed first were but of fair size, and uneven in the size of the berries. Some allowance should be made for the lateness of the season at which the Show was held, as this variety does not long retain its colour after being ripe. There is no Grape which deteriorates in appearance so quickly as Black Hamburgh. Black Prince was only of moderate quality. Buckland Sweetwater was very fine. Seldom are such large and even berries shown as the first prize pair of bunches. One of the chief features of this Grape is the unevenness of the berries in a general way.

Duke of Buccleuch was represented by four exhibitors, the prize-winners from Mr. Allan being fine in colour, but all the others showed the variety in its more general appearance—viz., much too green to be particularly attractive. One now and again meets with good samples of this variety, but when a Grape requires so much special treatment to present it in its true character, it loses much in popularity. Generally the larger the berries the greener the colour they assume. Foster's Seedling was generally well shown; the first from Mr. Roberts were of extra good colour, large and even in berry. This is an excellent Grape for mid-season, as it is for an early crop. It sets freely. The constitution being strong, enables it to carry and perfect a heavy crop of bunches.

Gros Colman, which is generally staged largely in point of numbers and good in quality, on this occasion was only shown by three exhibitors, owing, I presume, to the sunless weather at times during the season. Where this variety is grown in a mixed collection it suffers more through the reason named, and does not assume such a good finish as when grown in more heat, hence the reason of the scarcity. The first prize bunches were very fine in berry but slightly wanting in finish. Gros Guillaume had evidently felt the effects of want of sun, judging from the specimens staged, as all were wanting considerably in colour. It is a pity this variety is not generally better grown. When in its best form it is handsome in appearance. The bunches are most shapely; the berries of large size; it keeps well, and the flavour is good when properly ripened and kept till say December. Many people imagine this variety will not produce bunches freely when grown on the close-spur system, but this is a great mistake, for if the spurs are allowed ample room whereby the foliage has free development, the wood thoroughly ripened, depend upon it bunches will be freely produced upon the close-spur method of pruning; at least such is my experience of the variety.

Gros Maroc was represented by six pairs, the first prize being awarded to the much-discussed bunches staged by Mr. Taylor at the Crystal Palace Show the previous week; certainly the two bunches were not identical in appearance, the larger bunch having berries much rounder at the point than the other. It partook strongly of the colour of Gros Colman when not in its very best condition as to colour; the bunch in question was large in size and excellent in form, while the berries were extra large, but the colour and bloom was slightly deficient, and it was the general opinion at both shows that the two bunches were not the same variety. The second prize pair, although much smaller in bunch, were typical of the variety in its best form owing to their grand colour.

Lady Downe's was staged by nine competitors, all being most creditable, the bunch form of all was excellent. Mr. Osman's first prize pair were compact in bunch, extra large in berry, but just the merest shade short in colour; the second and third prizetakers were perhaps slightly superior in colour, but lacked the size of berry which characterised the winning stand.

Six competed with Madresfield Court, and there, in my opinion, a mistake occurred in awarding the prizes. The first was given to bunches large in size; this was their only recommendation, the berries being tightly wedged owing to not being sufficiently thinned; they were not even in size, were rather red, much rubbed, and, what was worse, many berries in the centre of the largest bunch were much decayed; their proper place, in my opinion, was third. Those placed second were much smaller in bunch, but the berries not only were much larger but even in size, better colour, and were quite plump and fresh and really fit for a dessert table; merely size of bunch must have carried the Judges away in this class. Again, in the class for Mrs. Pearson, size of bunch was the winning element, the berries were small and quite green, while the second prize bunches, although smaller, had better berries, and, what was of more importance, the colour was infinitely better; the positions of these two should have been reversed.

Both Mrs. Pince and Muscat Hamburgh were anything but first-class; indeed the latter was very poor, while the former showed that want of colour which baffles many men to produce it in any other form. A large entry of Muscat of Alexandria (nine) brought out some excellent samples

of this grand Grape; those staged by Mr. Pratt and awarded first prize were examples of high culture; the bunches were large, of capital shape, while the berries were of good size and most compact, showing that the thinning had been done to perfection. Bunches of this variety are often thinned far too much; the consequence is, when the bunches are cut and laid down too much stem and berry stalks is visible; in a really perfect bunch none of these should be seen, each berry should fill its allotted space and no more. Green samples were the best staged of White Tokay, while two pairs only were forthcoming of Golden Queen; at its best it is but dirty in appearance, but the flavour of well-grown samples is excellent, there is something so firm and crisp in its taste. Three lots of Trebbiano were staged, but all were poor in quality, the date being too early for this variety except under exceptional circumstances. A seedling Grape was shown by Mr. Bannister, Cote House Gardens, Westbury-on-Trym, Bristol, the result of a cross between Muscat of Alexandria and Black Hamburgh, but it is too much like the Bowood Muscat to be distinct.—A MEDALLIST.

HEATING BY HOT WATER.

[Read before the Members of the Preston and Fulwood Floral and Horticultural Society, August 7th.]

(Continued from page 270.)

THE "Chilwell Nurseries" boiler is a horizontal tubular, composed of 4-inch cast pipes, see fig. 42. The water passes from the return into water boxes at the front and then through eight horizontal tubes, four on each side, into other water boxes about the centre of the boiler, and then passes out into two tubes beyond to another water box. From this the water returns through seven tubes to a water box at the front, these tubes being directly over the fire. From this position the water again passes to the centre of the boiler to another waterbox, and then from the boiler into the main flow pipe. In setting, the whole of these tubes are incased with firebrick, and then the remaining space filled with sand. This boiler does not require a deep stokehole, but rather a long one. In the late contest it proved itself to be the most economical as regards fuel in the 2000 feet, but, as I

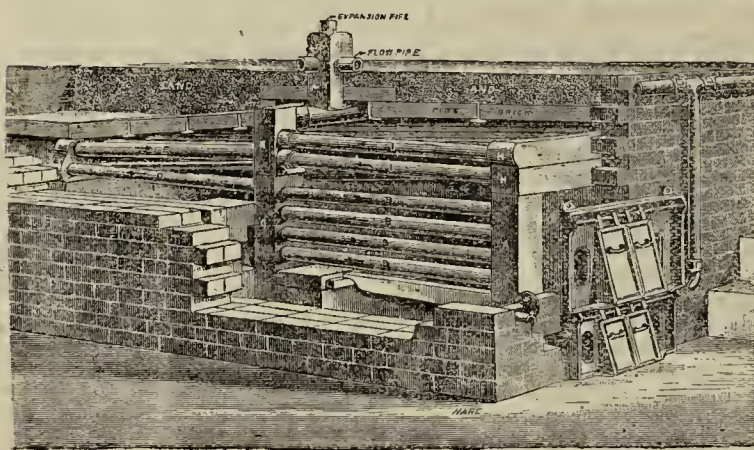


Fig. 42.

have said, it was badly stoked, and did not fully display its qualities. It is clear that a good flame amongst the tubes, such as would be caused by burning "nuts," is needed, which would heat the boiler much more quickly than coke. The use of coke for a boiler constructed on this principle does not bring half the tubes in direct contact with the heat thrown off by the fuel. I may have observed wrongly on this point, but feel certain that if a good blaze had been constantly playing amongst the tubes the boiler would have heated the water more rapidly and proved itself to have been a quick-heating boiler.

The boiler Mr. J. Wood entered in the contest was quite distinct and perfectly new to me. It is a horizontal tubular, and is represented by fig. 43. The fire bars are composed of water tubes about 2 inches in diameter, which are connected to a water box at the back and front. These tubes are continued round each side in the same shape as the ordinary saddle. These are fitted into a continuation of the same water boxes as the water bars. Three water boxes are continued for a foot or more above the tubes. Three tubes run through the centre of the fire, the same length as the rest, and are connected to the front and back water spaces. The whole of the tubes are surrounded with firebrick to form a flue, which allows the fire to play through the tubes and thus exposed them to direct action. This boiler is fed at the top and cleaned and clinkered at the front. From all appearance this boiler is well adapted for burning coke; in fact, all tubulars fed at the top work better with this fuel than any other. Mr. Wood's boiler does not contain a large water space, and the whole being fully

exposed to the fire, it cannot be long before the water is heated and circulation must commence. Many boilers contain too much water, and require a good time, and plenty of fuel to heat it before it is passed from the boiler to the pipes. This is a great disadvantage, but the one under notice is constructed on the right principle,

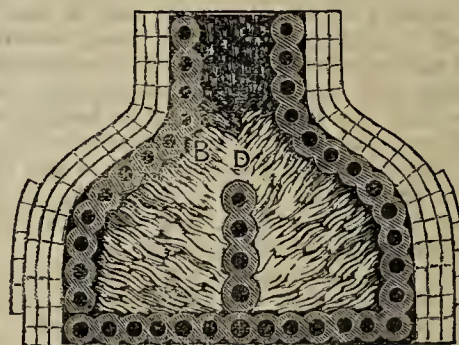


Fig. 43.

and proved in the late trials to heat quickly and to raise a high temperature in a very short time.

COIL BOILERS.—This form of boilers are not so generally known or employed for heating garden and other structures as many others of various designs. Mr. Sam Deard's "Champion Coil" boilers are represented by figs. 44 and 45. The first worked in 1000 feet contest at Liverpool and gained the highest award, as also did the latter in the contest for 500 feet. The boiler consists of one continuous coil of pipe, which completely surrounds the fire; the larger one, as will be seen, is set upon water bars. The durability of these boilers is beyond question, for the coil is composed of cast iron segments connected by molten metal, which when contracted forms the joint, and is said to bear 100 lbs. pressure to the square inch. These boilers when properly set can be employed for quick action or equally well for slow combustion. Further details on this head, as well as that of the economy of

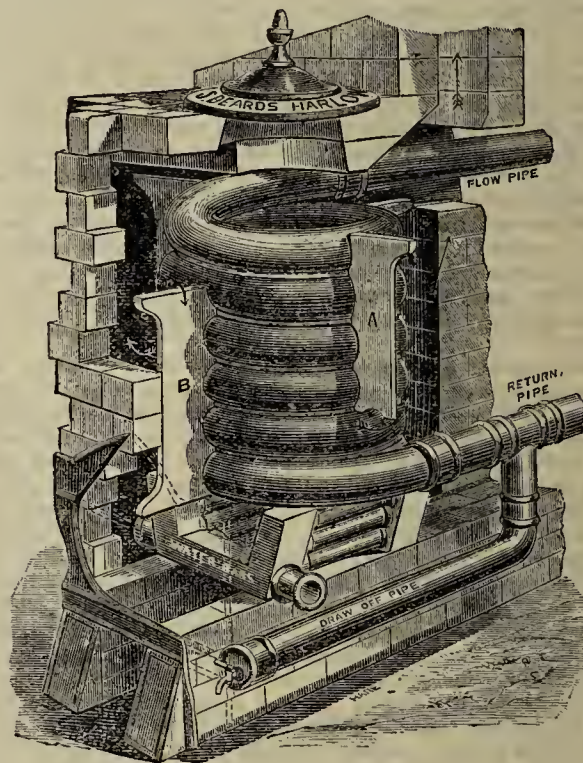


Fig. 44.

these boilers, need not be entered into, for a mere glance at the report of the contest will be ample to prove their qualities in these respects. The small coil, fig. 45, is constructed on the same principle as the larger one, but is set without water bars. The method of setting these boilers is illustrated in the engravings, and does not require a large amount of brickwork. A narrow flue surrounds the coil, which is divided by two or three mid-feathers according to the size of the boilers. The one at the back is constructed to throw the flame round the flue before it is allowed to pass up the chimney. Very little heat can be wasted; in fact, none, if the damper in the chimney is properly regulated. From the manner in which these boilers worked at Liverpool I have formed a very high opinion of them, and do not doubt that they will be more largely used by gardeners and others in the future than has been the case in the past. Another advantage,

and one that carries great weight in the selection of a boiler, is that they do not require a very large or deep stokehole, and only a moderate amount of bricks in comparison with what are needed to set many other boilers.

CONICAL BOILERS.—These may very properly be termed "anybody's" boilers, for they are made by many well-known firms of boiler makers. They vary slightly in shape, but the principle of construction throughout is the same. Some are cast and others rivetted. The whole are wider at the base than the top; in fact, they gradually taper from the base upwards. They are fed at the top or near that position. The water space is all round the fire. A small portion of the flue, with a valve to regulate the draught, is cast to these boilers ready for placing in the chimney, which can be either of brick or various sized cast pipes, according to the size of the boiler or the convenience of each individual. The flow pipe leaves the boiler near the top and the returns enter near the base. These boilers are portable and do not require a single brick in seating them, for the ashpit is cast to the boiler, and therefore are invaluable for many localities and also for warming public buildings. There is, comparatively

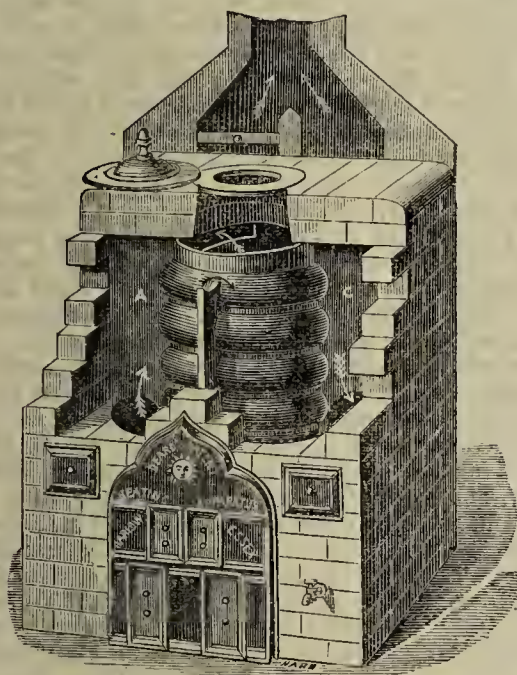


Fig. 45.

speaking, no dust from them, and if desirable they can be fixed in the kitchen to heat conservatories or greenhouses attached to dwellings. They are quick heating and at the same time thoroughly economical, for when once filled with fuel the damper can be regulated so that the fire will last for many hours without attention. These boilers will burn any kind of fuel, but coke or cinders from the dwelling house is best for them. There are no complications that are likely to prove bewildering to amateurs, or those having only a small structure to heat. All things considered, it would be difficult to employ a better boiler for heating small houses. Some are arranged with a coil inside, which adds materially to the heating power.

UPRIGHT TUBULARS.—The forms of these boilers are as numerous as in any of the sections that have been referred to. The majority, especially those that are made with two or three sets one above the other, require very deep stokeholes and are not suitable for all places. They have, however, been fixed in numerous instances and most highly approved by those who have worked them. I am informed on most reliable authority that these vertical tubulars are most powerful when once the water has been heated and circulation commenced. The same authority, who presides over one of the most extensive gardening establishments in England, is working two of Messrs. J. Weeks & Co.'s large tubular boilers, and considers them to be the most powerful and economical large boilers that he has used. One of the greatest faults that attach to these boilers is the choking of the space between the two sections of tubes where two rows of tubes form the boiler. The best provision is not made for cleaning them, and great care is needed, for if they become choked by cinders and ashes the boilers lose much power and are most liable to break. Fortunately, however, these large boilers are made in three sections, one above the others, and if a tube fails it can be replaced without the destruction of the whole boiler. This was not formerly the case, for when a tube gave way the boiler was useless and a new one had to be supplied! Some are

still made on this principle, and in the selection of a reliable boiler should be avoided. There are new forms of vertical tubular boilers that do not require such deep stokeholes. The tubes in several instances are V shaped and expose a large upright surface to the action of the fire. My experience with upright tubulars has been somewhat limited, and therefore shall refrain from saying anything farther about them.—WM. BARDNEY.

(To be continued.)

EARLY FLOWERING BULBS.

BEING in one of those establishments where the family only stay a portion of the year, we always try to have as many flowers as possible during the time they are here, and as that is from the beginning of October until the middle of January, early bulbs which will flower with certainty and do not require much forcing are invaluable to us. My reason for objecting to bulbs which require hard forcing to bring them well into bloom is that our houses and forcing pits are old-fashioned and rather deficient of heat, so that the plants would fail to flower at the desired time. This, however, need not be much regretted (although it is certainly often an inconvenience), as the bulbs we grow, and of which I write now, are only such as may be successfully cultivated by amateurs and all who have only moderate appliances. Early bulbs we find most useful, as they flower freely, have showy and fragrant blossoms, and form a most valuable addition to all other flowers. In variety they are not so abundant as spring-flowering bulbs, but they are fairly numerous, and amongst the first to demand attention are the

ROMAN HYACINTHS.—These are undoubtedly the most useful of all easily forced early flowering bulbs. They might be had in flower at Christmas by window culture, and when forced on by a little heat in a pit or house in October they may be blossomed in quantity in November and onwards. We force many hundreds of them, and they invariably give the highest satisfaction to all. We pot 100 or 200 at a time, and have them coming on in succession. The first were potted on September 1st, and others will be potted in every three weeks until Christmas. The compost used for them consists of loam, sand, and half-decayed manure, there being two parts of the former to one of each of the latter. Six-inch pots are chiefly used, and from five to eight bulbs are put into each. The pots are well drained, and they are then filled loosely with the soil, the bulbs being rammed into this and then made firm. When finished only the crown is seen above the soil, and they are immediately placed in cool frames and covered with finely sifted ashes to the depth of 8 inches. A light is placed over them when it is too wet, and here they remain until the growths have become 2 inches or so in height. They will grow this length in three or four weeks, and then they are taken out and placed in the light where the temperature is from 55° to 65°, and they come into bloom in from three to four weeks, the time altogether from the one first potted until they are in full blossom not exceeding eight weeks. Some dealers offer very cheap bulbs, but the best are not included amongst these, as really good bulbs can only be bought at the best prices, and in the end they are much the cheapest and most satisfactory. I have proved repeatedly that the cheapest Roman bulbs are the smaller sizes, and I have had hundreds of them produce one spike only, whereas the very best invariably bear two good spikes of flowers and not infrequently three, and in this way I never found any profit in cheap bulbs. The large bulbs force more freely and are more massive in their development.

TULIPS.—We have tried many of these, but now confine ourselves to the Duc Van Thol section, and amongst these the easiest to force is the scarlet variety. It takes a fortnight longer to come into bloom than the Roman Hyacinths, but it is most useful and attractive, as the flowers are brilliant scarlet, and they brighten up either a greenhouse or a room in a very pleasing manner during the dark days of December or any other of the winter months. The vermilion, white, and yellow varieties in this section are also excellent, but they are more shy in flowering until after the turn of the year, and I cannot recommend them to be grown generally to bloom either before or at Christmas. The double Duc Van Thols are useless for early flowering. Brutus, a deep red, the white Pottebakker, and the Tournesols have also been tried for early work, but they did not succeed. In culture they require the same attention as the Hyacinths. Indeed they are potted in the same soil and plunged under the same ashes; but they have generally to be left under these a fortnight longer than the Romans. The bulbs are a little smaller, too, and from six to eight of them may be put into a 5-inch pot. Last year some of the bulbs we had under the name of Duc Van Thol turned out to be a much later variety. This was a serious disappointment to us.

NARCISSUS.—These form another grand class which may be grown to flower in December without any difficulty, but after trying many varieties we now confine our culture to them. These are the Double Roman, white, with yellow cup, and Paper White, which is pure white. Like the preceding, they are potted and treated in all respects like the Hyacinths; in fact, it is an advantage of no little importance that the whole of the early bulbs may be potted from the one heap of soil and accompany each other all through their rooting and forcing stages. The bulk of the Narcissus, however, are larger than any of the others, and from four to six should be placed in an 8-inch pot. If potted high the roots, when they become plentiful, are almost sure to push the bulbs up from the soil, and they may be checked in this way; but if the bulbs are potted deeply, and only the narrow crown allowed to be visible above the soil, they will grow well. There is no difficulty whatever in getting the two varieties just named into flower at Christmas, and the tall spikes are most useful then either for mixing with other pot plants in the conservatory or cutting and furnishing glasses. Their fragrance is very strong.

This ends our selection of very early forcing bulbs; others will be named, but none of them can be relied on to flower freely. We have done our utmost to force Crocuses into flower by Christmas, but always failed. The bulbs were potted with the other early ones, but they did not flower until far on in the spring months. Crocuses have therefore been given up. *Scilla præcox*, or *sibirica*, is a very early flowering bulb, but it cannot be forced into flower under the conditions we write of until after the new year. The Jonquils may also be classed with the Scillas in this respect, but where there are plenty of delicate Roman Hyacinths, brilliant scarlet Tulips, and soft-tinted Narciss in flower during November and December other bulbs will not be much missed, and may stand over until the days begin to lengthen.—J. M.

DRESSING CHRYSANTHEMUM BLOOMS.

I AM extremely obliged to your able correspondent Mr. Molyneux for his kind remarks on page 279 respecting the undressed blooms of Chrysanthemums referred to on page 256. I quite agree with him that the blooms in question were of large size and great depth, and very clean and fresh, and fine broad petals and of excellent quality. Some of the petals had been put a little into shape; I saw one gentleman put his pencil into one or two of the flowers, and they appeared to be rather loose. But I did not ask the question on that point altogether, I simply thought that your correspondent objected to undressed blooms, and for another reason. Some few years since I remember Mr. Mitchell showing in the class for twenty-four blooms against Mr. E. Sanderson. Mr. Mitchell had some extraordinary large blooms in his stand, half as large again as Mr. Sanderson's, but they were not dressed, or but slightly so. The first prize was given to Mr. Sanderson in this case because his blooms were better dressed, and if I remember right it was reported so. For these reasons I asked, Why not have a class for undressed blooms as well as for dressed blooms? Now the question is, if all these large undressed blooms were properly dressed they would in all probability have lost one-third of their size when they were "cupped." I do not for one moment wish to dispute the decision of the Judges, for I know them all well, and know them to be honest men of business.—W. M.

ROSES AT THE NATIONAL ROSE SOCIETY'S METROPOLITAN EXHIBITION IN 1886.

The following analysis is compiled from a tabulated list of all the Roses shown in nearly every one of the prize stands in the first twenty classes at the Exhibition of the National Rose Society held at South Kensington in July last. The total number of blooms entered in this list I find to have been 1547, of which 832 were exhibited by amateurs and 715 by nurserymen. The points most clearly brought out by this analysis are (1) the character of the past Rose season and its influence on the different varieties; and (2) the prominent positions which are being taken by some of the newer Roses, and consequently the advance that has been made in recent years towards the improvement of the Queen of flowers.

First as regards the weather of the exhibition season. It will be remembered that June continued extremely dry and cold until within a few days of its close, when hot weather all at once set in and lasted until after the day of the National. Comparing the present analysis with the one which appeared in the *Journal of Horticulture* on October 23rd, 1884, which may be taken as giving the standard or average relative positions of the different established varieties, the following Roses come out as having stood the hot, dry, forcing weather remarkably well, if, indeed, many of them were not actually benefited by it—viz., Madame Gabriel Luizet (5), Marie Rady (9), Mons. Noman (37), Camille Bernardin (20), Xavier Olibo (21), Duchesse de Vallombrosa (16), Marie

Cointet (34), Le Havre (15), Prince Arthur (25), Annie Laxton (20), and Annie Wood (32); and among the Teas, Caroline Kuster (9), Jean Ducher (4), Innocente Pirola (4), La Boule d'Or (10), and Madame H. Jamain (15). On the other hand the following varieties were but very indifferently represented—viz., La France (5), Duke of Edinburgh (7), Marquise de Castellane (16), Alfred Colomb (9), Marguerite de St. Amand (8), Etienne Levet (17), Baroness Rothschild (25), Madame Lacharme (9), Louis Van Houtte (25), Comtesse d'Oxford (22), Marie Verdier (18), Madame Victor Verdier (35), Pride of Waltham (31); and of the Teas, Souvenir d'un Ami (8), Catherine Mermet (7), and Rubens (6). The figures in brackets after the above names are intended to indicate the number of places lost or gained in the case of the different varieties mentioned as compared with their positions in the general analysis of 1884. It should not be forgotten, however, that at the time this Exhibition was held some of the late-flowering kinds had not in many districts come fully into flower. This is alone sufficient to account for the low positions of some of the above varieties, while thin Roses, such as Baroness Rothschild and Marie Verdier, would of course be further handicapped by the hot weather prevailing on the morning of the Show.

Coming now to the newer varieties, and arranging them in the order in which they appear in the two lists, it will be found that among the Hybrid Perpetuals Lady Mary Fitzwilliam (1882) takes the first place. This so-called Hybrid Tea, which, by the way, is one of the freest flowering of all Roses, stood in the 1884 analysis no higher than 96 on the list, but has this year—no doubt a favourable one for this particular Rose—actually attained to the place of No. 9. The next in favour is Merveille de Lyon (1882) the most reliable of all the white H.P.s, but still falling far short in several points of the perfect white Hybrid Perpetual we may one day hope to see. Then we have Violette Bouyer (1881), which, although not nearly so white as the Rose last named, is nevertheless to my mind a more pleasing flower. Heinrich Schultheis (1882), which follows next, is of a charming and at the same time very distinct colour. The merits of that fine-petaled variety Ulrich Brunner (1881) entitle it to a much higher place than the one it has obtained in the present analysis, but the hot weather was no doubt on this occasion greatly against its being generally staged in good condition. Mr. B. R. Cant of Colchester, a very reliable authority, regards it as the best H.P. sent out for years, and states that with him it is always in bloom, never mildews, and is at the present time as green with foliage as in June. Among those less prominently placed may be mentioned Duke of Teck (1880), Pride of Waltham (1881), Rosieriste Jacobs (1880), Madame Isaac Perière (1880), Mrs. Jowitt (1880), and Queen of Queens (1883). The chief place among the Teas is taken by that beautiful hot-weather variety Etoile de Lyon (1881), and next comes the deep-tinted and stout-petaled Madame Cusin, then three Teas of still more recent introduction—Hon. Edith Giffard (1882), Princess of Wales (1882), Madame de Watteville (1883)—all of them undoubted acquisitions.

When we consider that none of these new Roses are more than six years old, and that as many as four of the first twelve varieties in the accompanying list of Hybrid Perpetuals are less than ten years old—viz., Madame Gabriel Luizet and A. K. Williams nine years each, and Lady Mary Fitzwilliam and Merveille de Lyon only four years each—and that many promising Teas are coming on the scene, it will not surely be denied that substantial progress is being made in the improvement of our national flower.

For the benefit of non-exhibitors I will now give a list of twelve Hybrid Perpetuals and six Teas selected from the above tables. In making the selection I have endeavoured to name only such kinds in their different shades of colour as yield the choicest blooms, and which, being free-flowering, hardy, and of good constitution, are likely with moderate care and attention to do well—viz., of Hybrid Perpetuals, A. K. Williams, Baroness Rothschild, Camille Bernardin, Charles Lefebvre, Duchesse de Vallombrosa, Dupuy Jamain, La France, Marie Finger, Marquise de Castellane, Merveille de Lyon, Prince Arthur, and Ulrich Brunner; and from the Teas, Anna Ollivier, Hon. Edith Giffard, Innocente Pirola, Madame Lambard, Marie Van Houtte, and Souvenir d'un Ami. I would at the same time recommend that a separate bed should be exclusively given up to these Roses, which should be dwarf plants on either the seedling-briar or briar-cutting. If a greater number of plants be desired it would be advisable to obtain two, three, or more of any of the Roses mentioned here rather than commence at once with a numerous collection of less certain kinds.

To the following members of the Committee of the National Rose Society I am indebted for kind assistance in taking down the names of the Roses at this Exhibition—viz., Mr. H. Appleby, Rev. H. A. Berners, Mr. J. Burrell, Mr. G. Bunyard, Mr. T. W. Girdlestone, Mr. W. J. Jefferies, Mr. E. B. Lindsell, and Mr. J. Sargent; also to Mr. T. W. Girdlestone for aiding me in preparing the selection of Roses recommended above.

HYBRID PERPETUALS.

Position in Present Analysis.	Number of Blooms Shown.	Position in 1884 Analysis.	Name of Rose.	Date of Introduction.	Raiser's Name.
1	47	6	Madame Gabriel Luizet	1877	Liabaud
2	35	5	A. K. Williams	1877	Schwartz
3	35	2	Marie Baumann	1883	Baumann
4	35	13	Marie Rady	1885	Fontaine
5	31	8	Captain Christy	1873	Lacharme
6	31	1	La France	1867	J. B. Guillot, fils
7	27	10	François Michelou	1871	Levet
8	23	45	Monsieur Noman	1896	Guillot, père
9	22	96	Lady Mary Fitzwilliam	1882	Bennett
10	20	7	Charles Lefebvre	1861	Lacharme
11	19	31	Camille Bernardin	1885	Gautreau
12	18	19	Merveille de Lyon	1882	Pernet
13	18	34	Xavier Olibo	1864	Lacharme
14	17	27	Beauty of Waltham	1882	W. Paul & Son
15	17	21	Duchesse de Vallombrosa	1875	Schwartz
16	17	22	Horace Vernet	1866	J. B. Guillot, fils
17	17	51	Marie Cointet	1872	J. B. Guillot, fils
18	16	33	Le Havre	1871	Eude
19	15	12	Duke of Edinburgh	1868	Paul & Son
20	15	28	Duke of Wellington	1864	Granger
21	15	5	Marquise de Castellane	1869	Pernet
22	15	47	Prince Arthur	1875	Cant
23	14	9	Alfred Colomb	1865	Lacharme
24	14	16	Marguerite de St. Amand	1864	Sansal
25	14	—	Marie Finger	1873	Raimbaud
26	14	0	Violette Bonier	1881	Lacharme
27	13	38	Abel Carrière	1875	E. Verdier
28	13	11	Etienne Levet	1871	Levet
29	12	4	Baroness Rothschild	1867	Pernet
30	12	86	Heinrich Schulheis	1882	Bennett
31	12	20	Madame H. Jamain	1871	Jamain
32	12	23	Madame Lacharme	1872	Lacharme
33	11	44	Countess of Rosebery	1879	Postans
34	11	—	Ferdinand de Lesseps	1869	E. Verdier
35	11	25	Fisher Holmes	1865	E. Verdier
36	11	60	Reynolds Hole	1873	Paul & Son
37	11	49	Ulrich Branner	1881	Levet
38	10	58	Annie Laxton	1872	Laxton
39	10	14	Lonis Van Houtte	1860	Lacharme
40	9	18	Comtesse d'Oxford	1869	Guillot, père
41	9	32	Dupuy Jamain	1863	Jamain
42	8	41	Général Jacqueminot	1853	Roussellet
43	8	25	Marie Verdier	1877	E. Verdier
44	8	61	Mrs. Baker	1874	Turner
45	8	30	Sénateur Vaisse	1859	Guillot, père
46	8	36	Star of Waltham	1875	W. Paul & Son
47	7	79	Annie Wood	1866	E. Verdier
48	7	64	Charles Darwin	1879	Laxton
49	7	15	Dr. Andry	1864	E. Verdier
50	7	43	Edouard Morren	1868	Granger
51	7	17	E. Y. Teas	1874	E. Verdier
52	7	67	Lord Macaulay	1863	W. Paul & Son
53	7	—	Penelope Mayo	1873	Davis
54	7	54	Prince Camille de Rohan	1861	E. Verdier
55	6	0	Boieldien	1877	Margottin
56	6	55	Duchess of Bedford	1879	Postans
57	6	48	Duke of Teck	1880	Paul & Son
58	6	68	John Stuart Mill	1875	Turner
59	6	24	Madame Victor Verdier	1863	E. Verdier
60	6	29	Pride of Waltham	1881	W. Paul & Son
61	6	0	Rosieriste Jacobs	1880	Ducher
62	6	74	Souvenir de la Malmaison (B) ..	1843	Bé uze
63	5	0	Comte Raimbaud	1867	Rolland
64	5	0	Madame J. Perrière (B)	1887	Margottin, fils
65	5	0	Magna Charta	1878	W. Paul & Son
66	5	0	Mrs. Jowitt	1880	Cranston
67	5	100	Nardy Frères	1868	Ducher
68	5	0	Queen of Queens	1883	W. Paul & Son
69	5	59	Victor Verdier	1859	Lacharme

TEAS AND NOISETTES.

Position in Present Analysis.	Number of Blooms Shown.	Position in 1884 Analysis.	Name of Rose.	Date of Introduction.	Raiser's Name.
1	35	10	Caroline Kuster (N)	1872	Pernet
2	34	2	Maréchal Niel (N)	1864	Pradel
3	28	7	Jean Ducher	1874	Madame Ducher
4	27	8	Innocente Pirola	1878	Madame Ducher
5	24	5	Niphotos	1844	Bongère
6	24	6	Souvenir d'Elise Varden	1854	Marest
7	22	4	Marie Van Houtte	1871	Ducher
8	20	12	Comtesse de Nadaillac	1871	J. B. Guillot, fils
9	20	1	Souvenir d'un Ami	1846	Belot-Defongère
10	18	3	Catherine Mermet	1869	J. B. Guillot, fils
11	18	16	Etoile de Lyon	1881	Guillot
12	16	15	Anna Olivier	1872	Ducher
13	16	13	Souvenir de Paul Neyron	1871	Levet
14	15	26	Madame Cusin	1881	Guillot, fils
15	14	25	La Boule d'Or	1860	Margottin
16	13	—	Madame Bravy	1848	Guillot, père
17	13	11	Rubens	1839	Robert
18	11	0	Hon. Edith Giffard	1882	Guillot
19	11	14	Madame Willermoz	1845	Lacharme
20	10	19	Madame Lambard	1877	Lacharme
21	10	0	Princess of Wales	1882	Bennett
22	9	9	Devoniensis	1838	Foster
23	9	38	Madame H. Jamain	1869	J. B. Guillot, fils
24	7	0	Madame de Watteville	1883	Guillot
25	6	22	Madame Margottin	1856	J. B. Guillot, fils
26	5	20	Belle Lyonnaise	1849	Levet
27	5	24	Madame Welche	1878	Ducher
28	4	35	Jean Pernet	1857	Pernet
29	4	18	Perle des Jardins	1874	Levet
30	3	0	Comtesse de Panisse	1878	Nabonnand
31	3	80	David Pradel	1851	Pradel
32	3	0	Francisca Krüger	1879	Nabonnand
33	3	29	Jules Finger	1879	Madame Ducher

—E. M., Berkhamsted.



POTATOES IN LINCOLNSHIRE.—A correspondent who has visited the Lincolnshire Potato fields informs us that a heavy yield of tubers is not expected this autumn. The plants were slow in starting into growth in consequence of the ungenial weather in May, and the foliage has fallen much sooner than usual, the bitterly cold east winds of last week drying all up but the stems. On the 22nd inst. snow and sleet fell, but, though milder days followed the change of wind, it is too late to materially benefit the crops.

— THE CHISWICK HORTICULTURAL SOCIETY will hold an Exhibition of Chrysanthemums, plants, flowers, and fruit on Thursday, November 18th, in the Vestry Hall, Chiswick. Thirty-two classes are provided, with prizes from 30s. to 2s. Mr. J. Fromow, Sutton Court Nursery, is the Honorary Secretary.

— MR. THOMAS BOOKER, gardener to A. H. Griffiths, Esq., Edgbaston, Birmingham, writes:—"I can quite confirm 'D., Deal's,' view of ROSE MADAME GABRIEL LUIZET being a true Hybrid Perpetual, I have about fourteen plants of it under my charge, and I have cut several good blooms lately, and have others left besides buds that will become good blooms if this fine weather lasts. I find Madame Gabriel Luizet a much better autumn bloomer than Madame H. Jamain, which is considered a true H.P. I may say that I have more bloom from A. K. Williams than any other just now except Gloire de Dijon, but I am cutting some splendid blooms of Lord Beaconsfield; it is so fragrant and very distinct. I never remember Roses so good in the autumn as at this time, both for size and colour."

— A HEAVY CROP OF STRAWBERRIES.—At a recent meeting of the American Horticultural Society it was stated that a new variety of Strawberry from Wisconsin had yielded over 200 bushels per acre this season, in spite of the drought. A phenomenal yield of Strawberries this season was obtained by J. M. Smith of Green Bay, Wisconsin. On $3\frac{1}{2}$ acres he raised 1000 bushels, which he sold for 2216 dollars.

— "J. H." writes, "Can anyone inform me through the Journal if there is A GOOD VARNISH or MIXTURE, and what it is composed of, to paint the wooden structure of a house devoted to foliage plants, so as to render the wood incombustible and imputrescible, without injuring the inmates of the house?"

— A NEW Orchid named SPATHOGLOTTIS KIMBALLIANA is announced for sale at Mr. Stevens' rooms, King Street, Covent Garden, on Thursday, September 30th. It is described as producing flower spikes $1\frac{1}{2}$ to 2 feet long, with ten to twenty flowers each, of a brilliant yellow, the lip spotted with purple. They are said to be as large as a good Phalenopsis amabilis, and last a long time in flower. It is found on rocks at an elevation of 3000 feet in a moist atmosphere. A better known species, S. Fortunei, is very attractive at this time of year, producing its bright yellow flowers freely; it is, however, seldom seen in Orchid houses.

— THE NEWPORT AND COUNTY HORTICULTURAL SOCIETY have decided to hold their third Exhibition of Chrysanthemums on Wednesday and Thursday, November 17th and 18th, this year, in the Albert Hall of that town. Most of the classes are for Chrysanthemums, but some are also devoted to fruit, the prizes being of moderate amount. The Hon. Secs. are Messrs. W. H. Lewis and H. Dixon, London and Provincial Bank, Newport.

— "S. C." writes, "I am not a professional Rose grower, yet I admire ROSE MRS. BOSANQUET more every day. A dwarf plant on its own roots has been in flower continuously since early in June, and it is now lovely. True it is not the purest white, but it does well as a white. Cut as a bud it is useful for button-holes, and when full blown is very desirable for vases, &c. This is the second year I have had it, and it succeeds well."

— THE Local Government Board have sanctioned the application of the Richmond Vestry for power to borrow £15,000, to enable them to

purchase the BUCCLEUCH ESTATE on Richmond Hill, so as to convert it into public pleasure grounds, and preserve the view from the Hill. They have also authorised the Vestry to borrow the money for fifty years instead of thirty.

— GARDENING APPOINTMENTS.—Mr. Noah Coppin, late gardener to C. C. Wyllie, Esq., Walden, Chislehurst, has been appointed gardener to G. Matthey, Esq., Rosemount, Eastbourne; and Mr. Thomas Hill, late gardener to R. M. Berens, Esq., Sidcup Place, has been appointed gardener to H. Gardener, Esq., Rocksham, Mertsam, Surrey.

— THE ESSEX FIELD CLUB.—The 69th ordinary meeting of the Club will be held in the Loughton Public Hall, Loughton, Essex, on Saturday, October 2nd, 1886, at half-past six o'clock. A lecture, illustrated with diagrams, will be delivered, "The Darwinian Theory—What it is and how it can be Demonstrated," by Alfred R. Wallace, F.L.S., F.Z.S., &c. The Hall will be open at six o'clock for the convenience of exhibitors. Specimens, &c., for exhibition at the conversazione may be sent to the care of the Secretary, Loughton Public Hall, or to the headquarters of the Club, 8, Knighton Villas, Buckhurst Hill.

— THE SEVENTH ANNUAL CRYPTOGRAMIC MEETING of the same Club will be held on Friday and Saturday, the 15th and 16th of October, in Epping Forest. It is intended to devote the Friday to collecting specimens, and to their examination and arrangement by the experts, and on the Saturday to hold an exhibition of fresh and preserved botanical specimens, microscopical objects, drawings, &c. The exhibition will be confined to subjects from the vegetable kingdom, but not necessarily to the Cryptogamia, although that division will hold a very important place. The exhibition will be opened at about four o'clock on Saturday, October 16th, in the large ball-room attached to the "Roebuck Inn," Buckhurst Hill. Ample time will thus be afforded for its careful examination by the visitors present, and all possible facilities will be given to exhibitors.

— MR. W. WILDSMITH, Heckfield Gardens, thus notes A GOOD BEDDING PLANT:—"There have of late been but few good additions to our lists of bedding plants, but the present season has brought us two or three, by far the best being Sutton's Princess Beatrice Begonia. It belongs to the fibrous-rooted section, and was obtained by hybridising *B. semperflorens rosea* with the pollen of *B. Schmidtii*. The plant is of a dense shrubby habit and grows from 9 to 12 inches high, and is exceedingly floriferous, the flowers being small and in colour white tinged with pink. It will not seed, consequently there is no picking or keeping in order required from the time of planting to lifting in autumn. We have it planted as 'dot' plants on a groundwork of *Alternantheras*, and also grouped on a cushion of *Sedum*, and it is alike pleasing in both positions. Another season we hope to use it still more largely in the manner just named, as also as a dividing line plant, particularly for the outer or front line of designs. A word of caution is necessary in regard to its propagation. It must be increased by splitting up the roots. Cuttings strike readily enough, but they will not branch; they keep to one stem. Last spring all we propagated in this manner (some dozens of plants), after pinching out the points, cut them down, and in other ways striving to get them to break, all proved useless, and we had to throw them away."

— AT Messrs. Protheroe & Morris's rooms in Cheapside last week DR. A. PATERSON'S COLLECTION OF ORCHIDS was sold by auction, and the plants being in good condition realised fair prices. Some of the principal were the following:—*Cattleya Trianae* 45 guineas, *Laelia elegans Turneri* 35 guineas, *Vanda suavis*, Paterson's variety, £32 11s., *Odontoglossum Alexandrae*, extra fine variety, £33 12s. and £14 3s. 6d., *Laelia Perrini alba* 20 guineas, *Cattleya labiata*, autumn-flowering variety, 18 guineas, *Cypripedium Veitchianum* 15 guineas, *Coelogyne Gardneriana* 15½ guineas, *Cymbidium giganteum* 12 guineas, *C. Lowianum* 13 guineas, *Vanda tricolor Patersoni* 16 guineas, *Dendrobium Ainsworthi* 13 guineas, *Vanda suavis* 14 guineas, *Laelia superbiens* 9 guineas, *Coelogyne cristata*, Chatsworth variety, 8 guineas, *Odontoglossum Klabochorum* 10 guineas, *Laelia anceps Dawsoni* 9 guineas, and *Vanda Cathcarti* 15 guineas. It is to be hoped that those sold are only a portion of the collection which has attracted so many visitors to Bridge of Allan.

— A VISITOR sends the following notes from Drumlanrig:—"SEEDLING TUBEROUS BEGONIAS are very fine at Drumlanrig; all sorts of shades and colours are to be seen, and some of the flowers are very large. They are being carefully selected, and next year they may be expected to be even finer than this. From seed sown this spring hundreds of fine large plants covered with brilliant flowers of great size and

substance have been obtained, and, though they are now past their best, they are still well worth seeing. Bedded out they have done finely, and at the present time (September 25th) they are still blooming freely, having been protected from the frost which visited this district some ten days ago. Light pieces of shading thrown over the beds and kept from injuring the flowers by stakes placed in the ground, were sufficient protection to keep the Begonias uninjured from 5° of frost; and now that the weather is mild again they are brilliant in colour, and promise to keep so for some time to come. Such samples as are to be seen at Drumlanrig are sure to have an effect in increasing the appreciation for, and the cultivation of, these beautiful plants. Easily grown, coming quickly into bloom, lasting long in flower, and being free from insect pests, Begonias have everything to commend them.

— "A THREE-QUARTER span house about 40 feet long is entirely filled with DUKE OF BUCCLEUCH GRAPE, which does extremely well at Drumlanrig, and this season has been even better than usual. The wood made this season is strong and well ripened. A succession of young rods is maintained, and plenty of room is allowed for the foliage to develop without being crowded. The consequence is well matured wood and abundant fruitfulness. This is a most important point in the culture of Duke of Buccleuch. If grown in a too crowded condition of wood and foliage it does not get sufficiently well ripened, and consequently does not fruit so well. The rods are trained very wide apart, and abundant room is allowed for the proper development of the foliage and ripening of the wood. Cracking is almost if not quite unknown in connection with the culture of 'The Duke' in this garden. It is a great favourite with the family, and all visitors who happen to see and taste it at the Castle are delighted with it. It is certainly a noble-looking Grape, and when cut and dished without being subjected to the ordeal of packing and travelling per rail, it is the perfection of a white Grape for summer and autumn use. This season a good many samples of 'The Duke' have been shown, and it may be hoped that it will be more cultivated in the future than it has been in the past.

— "FINE specimens of *LAPAGERIAS ROSEA* AND *ALBA* are flowering at Drumlanrig, and they occupy large square tubs, one at each side of a fine large conservatory. They are at one end of the house, and are trained along the end and along the roof, reaching more than half way along the house, and promising in a year or two to be at the other end. The white variety is especially well flowered, the beautiful flowers hanging quite thickly together, and forming a very pleasing sight."

— TWO recent issues of the "Botanical Magazine" give illustrations of the under-mentioned plants. *RANUNCULUS LYALLI* is depicted in t. 6888, and is a fine representation of this handsome New Zealand *Ranunculus*. The first specimens were collected in Milford Sound on the west coast of the Southern Island by Dr. Lyall forty years ago, but it has since then been found in several localities, mostly on mountain slopes "where the ground is kept moist during the summer from the trickling downwards of the melted snow and is shaded from the mid-day sun." It is remarked that thousands of seeds have been sent to England during the last twenty years, but very few plants have been raised from them. Plants flowered in the collection of the late Mr. Isaac Anderson-Henry in 1864, from seed which had laid dormant four or five years, though in New Zealand they germinate in eight months. The leaves attain the size of 12 inches in diameter, and the flowers, which are pure white, creamy, or pink, are 4 inches across. Other plants figured in the same number are *Iris Milesi* (t. 6889), a new species related to *I. tectorum*, and received by Mr. Frank Miles from "the Kulu and Parbutta Valleys of the North Western Himalayas." *Cerinthe minor* (t. 6890), an old herbaceous plant of little beauty, introduced to England in 1570, and recorded in Aiton's "Hortus Kewensis," 1789, vol. 1, page 183. *Disa atropurpurea* (t. 6891), one of the hundred species of *Disa* known at the Cape of Good Hope, but not to be compared with the handsome *D. grandiflora*. It has dull reddish purple flowers.

— A DISTINCT Ericaceous shrub, *BEFARIA GLAUCA* (t. 6893) "represents in the Andes the *Rhododendrons* of the mountains of the northern hemisphere, and it is a noteworthy fact that they begin in the American continent exactly where the true *Rhododendrons* find their southern limit." The leaves are like some of the smooth-foliaged *Rhododendrons*, the flowers being pale pink and borne in loose terminal panicles, the petals narrow and spreading. *B. glauca* was found by Humboldt and Bonpland at the beginning of the present century, and was introduced by M. Jacob Makoy of Liège, with whom it flowered in 1845. *Iris Statellæ*

(t. 6894), a yellowish-flowered species allied to *I. Intescens*. *Tulipa Ostrouskiana* (t. 6895) a Turkestan species with bright scarlet neatly formed flowers. *Corydalis Sewerzovi* (t. 6896), a golden-flowered species related to the well-known *C. bulbosa*. *Gladiolus Kotschyanus* (t. 6897), a pretty purple species found by Dr. Aitchison in Eastern Persia and North-western Afghanistan.

— AN AMERICAN GOOSEBERRY, *RIBES OXYACANTHOIDES*, is illustrated in t. 6892, a species which appears well worthy of cultivation for the sake of its fruit. Sir Joseph Hooker remarks concerning it that "The 'Currant Gooseberry' was introduced into England in 1705 by a Mr. Reynardson, and is mentioned by Plukenet in his 'Amaltheum Botanicum.' The fruiting specimens figured were sent in August, 1885, by G. Fox, Esq., Chad Hill, Sandown, Isle of Wight. Though smaller than the common Gooseberry, the fruit is as good as ordinary varieties of that species. The skin is much thinner, and it has none of the unpleasant musky flavour of some allied North American species. I have received from the south of France a small globose purple smooth-skinned ripe Gooseberry in the month of May, which resembles those of *oxyacanthoides* so much that I suspect it may be cultivated there for the sake of its fruit. Loudon states that the colour varies from red to green and purplish blue. It is described as an unfailing cropper, flourishing where the Gooseberry flags for want of moisture."

— A DAILY contemporary, calling attention to the ABUNDANCE OF PLUMS this season, remarks—"This season the fruits of the Plum tribe have been so plentiful that Green Gages have been sold at 9d. a 'sieve,' while only on last Saturday what are known as Damson Plums reached Covent Garden in such abundance that they were practically given away, as they would not keep. Even English Damsons, which bear travelling well, could be bought for 1s. 6d. a bushel. In Clare Market Plums were sold at the stalls at 2 lbs. for 1d.; and, making all allowance for doubtful weight, it is not easy to discover where the growers' profit could come in at such a retail price as that. As a matter of fact, the grower gets nothing at all, and may think himself lucky if the returns cover the cost of picking, to say nothing of carriage. The growers must take a lesson from the Americans, and learn to 'can' or preserve the fruit, so as to put it on the market in quantity proportionate to the demand, then possibly they may obtain a paying price. Similar remarks might be made in connection with green vegetables, for it often happens that the price obtained for a load of Cabbages, which has come no further than from Ilford or Romford, does not pay for the carriage. Plums, and even Pears, barely pay expenses, because they are plentiful and are sent to market in quantities for which there is no ready demand."

— CALIFORNIA last year sent to the eastern States of North America 16,000,000 lbs. of fruit—Grapes, Peaches, Plums, Apples, and Apricots, as well as carloads of Oranges.

— THE *Canterbury News* records that "A NEW POTATO has been discovered by M. Sace of Bolivia. The plant, which is called by the natives 'papa purcka,' is said to be richer in flour than other sorts, and to crop in that climate four times a year. It has from ten to fifteen stems to a plant, which send out smooth, bright green leaves from the ground upwards."

— THE interesting historical estate and house, PYRGO PARK, HAVERING-ATTE-BOWER, has been lately sold by General Fytche. The estate is not a large one, not exceeding 700 acres, but says a writer, "it combines in the highest degree the advantages of antiquity and of what George Robins used to call 'modern improvements.' The principal features commending the investment to the comfort-seeker will be found in the magnificent and commodious mansion, built in 1852 by Messrs. Cubitt, from the design of Salvin, the eminent architect, who was employed at Mamhead, in Devonshire, by Sir Robert Newman, and at Peckforton Castle, in Cheshire, by Lord Toller-mache. In 1862 Pyrgo Park was greatly enlarged and beautified under the superintendence of Mr. R. M. Barry, R.A., and the house, when completed, is said to have cost about £60,000. It is probable, however, that the historical traditions associated with the neighbourhood of Havering-atte-Bower and of Romford, to the north of which, at a distance of three miles, it lies, may have seemed still more attractive to the purchaser of Pyrgo Park. 'The enchantment of antique appellations,' exclaims Horace Walpole, 'has consecrated a pleasing idea of a Royal habitation, of which we now regret the extinction. Havering-at-the-Bower, the jointure of so many Dowager Queens, conveys to us the notion of a romantic scene.' The

'Liberty' of Havering will always be full of charm to Englishmen with a taste for archaeology, as it is one of the most ancient Royal demesnes in this country, having been the residence of Edward the Confessor, and of many kings and queens since."

— AN AMERICAN gives the following ADVICE TO FLORISTS:—"The florist who depends on local trade in a town of from 5000 to 10,000 inhabitants is obliged to grow a rather mixed collection of plants, and cannot devote his glass to a specialty, as is now generally done by most growers who have a city market. He must grow some cut flowers and some plants, and the variety of plants of entirely different natures and requirements sometimes grown together in these small places is surprising. But it is not surprising to find that while some things do well with him there are many which do not, and are in fact a drawback instead of a benefit. The remedy is simple. Do not attempt to grow a plant for which you cannot furnish its proper requirements. If you do not have them now, wait until you do; but do not attempt it before. Do not try to grow too many varieties of any plant. Do not allow your stock to consist of only a dozen each of many different but similar varieties. Select the one that gives the best general results and fire the rest. Occasionally try the novelties which appear of merit, and if superior to what you already have, retain and fire the old, but first be sure that it is better in every way. Do not clutter your place up with a lot of plants that will not sell. Keep your list of varieties down until you have the room and equipments to grow them right."

— COMMENTING ON VERNACULAR NAMES FOR PLANTS, the *Florida Dispatch* observes that "they are apt to be indefinite. The name Honeysuckle, for instance, though more commonly applied to the *Lonicera*s, is also, in different places, the name of an *Aquilegia*, an *Azalea*, a *Passiflora*, and many other widely divergent plants. So, in Australia, the name Peppermint Tree is, in different localities, the name for *Eucalyptus amygdalina*, *E. odorata*, and *E. piperita*. Referring to the latter species, Von Mueller says: 'The vernacular name 'Peppermint Tree' arose from this Eucalyptus, being bestowed on it already in the first year of the colonisation of New South Wales by Dr. White, because the scent of the foliage resembled that of the Peppermint herb; but this colonial appellation has become since extended to many other congeners in various parts of Australia. This fancied resemblance of Eucalyptus oil to that of Peppermint is explanatory also of the specific name adopted for this particular tree in science.'

BEDDING AT HAMPTON COURT.

DURING a recent short run through the grounds of this famous place, I was particularly struck with the beauty and luxuriance of growth of the plants generally used in the carpet bedding arrangements. The colours of the various bright varieties of *Alternantheras* were so finely developed, the grouping of colours being so evenly balanced, that I was tempted to make a few notes, thinking they might be suggestive to others. Two advantages which favour this class of bedding at Hampton Court are the sheltered positions the beds occupy, yet having the full benefit of the sun's rays, and the large size of the beds (24 feet long by 12 feet wide), allowing the planting to partake of a bold character. The various colours can be massed, so to speak, which in carpet bedding is one essential point. Nowhere can such good effect be had where the beds are of small size. Often too much in the way of patchwork is attempted that often ends in failure. But large beds and favourable position would avail little if knowledge and taste in planting were lacking, but Mr. Graham does not seem to be troubled in this respect. One oblong bed was filled as follows:—The groundwork was composed of *Mesembryanthemum cordifolium*; in the centre was a Maltese cross formed with *Echeveria Peacocki*, the centre being filled with *Scempervivum montanum*, the frame, so to speak, being *Alternanthera amoena*, pear-shaped forms, filled with *Alternanthera magnifica*, two small circles of *Alternanthera nana*, two oblong panels of *Leucophyton Browni*; the edge was raised about 4 inches high, and was planted with *Echeveria secunda glauca*, which would have been better for effect had *Herniaria glabra* been used instead of the *Echeveria*. This was the only fault that could be found with an otherwise charming arrangement.

Another bed of the same size and form had for its groundwork *Veronica incana*, long serpent-like scrolls 10 inches wide of *Alternanthera purpurea* between two rows of *Alternanthera magnifica*, other long scrolls of *Alternanthera paronychioides aurea*. Planted in panels of the groundwork were two arrow-headed panels of *Iresine Wallisi*, and very striking were two pear-shaped panels, also of *Alternanthera purpurea*. The edge was composed of *Echeveria secunda glauca* in a setting of *Sedum glaucum*. A third bed is particularly pleasing, the colours harmonising perfectly and are very effective, the groundwork of the pattern being *Mesembryanthemum cordifolium variegatum*. All the panels are surrounded with *Echeveria secunda glauca*, and filled with various sorts of *Alternantheras*; but the striking feature of the bed is central oval-shaped

raised panel of *Echeveria Peacocki*, which are planted closely together, thus affording a sheet of its striking tint of colour, edged with *Alternanthera versicolor grandis*, thus forming a grand contrast of colour. A fourth was very effective, being planted in the centre, about 18 inches apart, with *Abutilon Thompsoni*. Under these was growing thickly *Verbena venosa*; around this, as an edging, was a broad band of *Iresine Lindenii*, particularly rich in colour. This was quite a charming arrangement.

The groundwork of another bed was *Herniaria glabra*, small circles of *Leucophyton Browni*, and *Alternanthera versicolor grandis*, being enclosed by chain scrolls of *Mesembryanthemum cordifolium variegatum* and *Alternanthera magnifica*. The above are all enclosed in a straight band 4 inches wide of *Alternanthera paronychioides*; outside this are scrolls of *Alternanthera latifolia* and *Mesembryanthemum cordifolium variegatum*. In a sixth bed the groundwork was *Mesembryanthemum cordifolium variegatum*; *Aloe africana* as a centre plant, was set in a raised cushion of *Sempervivum montanum*, banded with *Echeveria Peacocki*, this being banded with *Alternanthera amoena*; end circles were formed with narrow bands of *Alternanthera paronychioides*, filled in with *Pachyphyton bracteatum*, four pear-shaped panels of *Leucophyton Browni*, and four more filled with *Alternanthera nana* magnificently coloured. These eight last named panels being banded with *Alternanthera purpurea*, completed a most pleasing effect.

A large bed, 70 feet long and 12 feet wide, oblong in form, had as its centre plants a mass of *Chrysanthemum Madame Desgrange*, well set with flower buds, the foliage being extra good in colour, betokening a magnificent floral display later on, with a broad band of *Aster bessericus* as an accompanying pleasing colour to the *Chrysanthemum* blooms.—VISITOR.

CAMELLIA TRICOLOR.

It is frequently remarked that in the multitude of novelties annually brought under public notice there is a danger of losing sight of some old and meritorious plants which are unsurpassed by the numerous more recent claimants to attention. Abundant examples of this kind occur amongst hardwooded plants, but there also other classes which include similar instances, and it is pleasing to see a re-awakening interest in what are appropriately termed "neglected" plants.

Camellias have long been favourites in gardens, being valued for their rich profusion of flowers, the symmetry of form in such excellent varieties as *alba plena*, and their shining green foliage. They are valued for conservatory decoration and for cutting, and though they require more care than some popular plants it is well deserved, and the necessary labour is profitably employed. Many of the double varieties are extremely handsome and superb in floral formation from a florist's point of view, but the single or semi-double varieties are receiving more attention, as, with less formality, they possess equally bright colours and are very profuse. *Camellia Donkelaari* is a well-known example of this kind, is a magnificent plant in a conservatory, while another fine variety of a similar type is that represented in the woodcut (fig. 46), *Camellia tricolor*. The flowers are of medium size, white, striped and flaked with rich rosy crimson and carmine. The dense cluster of stamens with their golden anthers in the centre render them still more attractive. The colouring varies like it does in the striped *Roses*. Sometimes a flower will be almost wholly white, at others the crimson colouring will greatly predominate; or one half of a flower may be coloured and the other portion white, or it may come as regularly marked as a bizarre *Carnation*, but this variation increases its charms. Add to this that the habit is vigorous, but compact and bushy, flowering in extraordinary profusion, and it will be seen that *C. tricolor* has ample qualities to recommend to cultivators. Our illustration was prepared from specimens furnished by Messrs. J. Veitch and Sons, Chelsea, in whose nursery it was very attractive early in the present year, a specimen in the corridor near the Brompton Road being very conspicuous amongst the numerous others there planted out.

GROWING FRUIT FOR MARKET.

MIDSEASON AND LATE PLUMS.—Commanding a ready sale even when the crop is heavy and the prices low, Plums are satisfactory, as the crop in a measure compensates for the lessened value. This year Green Gages are only bringing 5s. per sieve or bushel, but then the crop where that price obtains is enormous, and that it mostly is, if anywhere, on the limestone and oolitic formations.

Dessert Plums.—Belgian Purple, a grand cropper and of excellent quality, coming in at the end of August or beginning of September. I have not found it succeed in cold localities, being much given to gum, and evidently requires a silicious if not calcareous soil. Angelina Burdett, fine cropper and good quality. Kirke's, large, capital cropper, very rich and good. Archduke (Rivers), large, great cropper, and fruit good for any purpose. This must become popular, being a late sort, coming in early in October. All the preceding are purple or black Plums. Of yellows, Jefferson's, great cropper and very good; Washington, large and good

cropper; Coe's Golden Drop in favourable soils—i.e., light and warm localities, is first class for any purpose. Of the Gage Plums, Green Gage, capital cropper and well known flavour, is most esteemed, but Transparent is better and the tree healthier; and Reine Claude de Bavay is a large and in every respect first rate. The Gage Plums, however, crack very much, even before ripening if the weather be hot and dry whilst swelling, and the season afterwards changes to wet.

Kitchen Plums.—Mitchelson's, a wonderful bearer, but does not succeed on a cold soil, especially if having a wet subsoil. In a silicious or calcareous soil it is, perhaps, the most valuable of all market Plums. It is preceded by Goliath, a reddish purple, and is a great bearer. Prince of Wales, another good cropper, the tree not very hardy. Victoria, capital cropper and good-looking fruit, and as good as it looks. Pond's Seedling, a large red fruit and great bearer. Yellow Magnum Bonum only succeeds on warm silicious soils, and is then first-rate for preserving, and some think for eating. Diamond, a fine grower, and when a little aged a great bearer, and of the highest culinary value. Autumn Beauty or Autumn Compôte, another fine preserving sort, red and handsome, and a wonderful bearer. Wyedale, a small or only small medium Plum, a very great cropper, purple, and a splendid variety, making an excellent preserve. It is common in some districts (especially the Cleveland) of Yorkshire, and is a very valuable late sort, ripening late in October. Winesour seems to have gone out of date. I have only seen it bear at all well in the limestone formations of Yorkshire.

Damsons.—Rivers' Early comes in early in August, is much valued for that property, and it is excellent in every respect. Farleigh Prolific (Crittenden's Cluster) a wonderful fruiter, and decidedly the best of all the Damsons. It ought to be planted in all the hedgerows about farms, and then there would be no scarcity of Damsons. Prune or Long, not a good bearer until aged, and then bears fairly well, but is not equal to Dalrymple, which is of dwarf growth and a great bearer. White is a good bearer and late; by some it is considered good. For general purposes the Farleigh is far the best.

AUTUMN PEARS.—The Pears previously mentioned were only to keep the supply up to October. I now propose to give the names of those suitable for continuing the supply to a late period, the autumn Pears continuing to, say, Christmas, but it will perhaps be best to take them in the months.

October.—Fondante d'Automne, fine pyramidal habit, first-rate. Fertility (Rivers) a tremendous cropper, capital colour, handsome shape, and not big, yet of good size. Its quality on light soil is dry and mealy; on a cool bottom, good. It is very hardy and does not fruit sometimes, but every year. Louise Bonne of Jersey, large and good. Beurré Hardy, capital, large, and every way first-rate. Thompson's, a splendid quality, but not a taking sort, yet first-rate in every respect. Althorp Crassane, great bearer and very good, keeping some time. Beurré Capianmont, very free cropping and a taking fruit, and does well in cold localities. I have omitted the small Pears—viz., Autumn Bergamot, Aston Town, and Seckle. They are great bearers and unsurpassed for quality; also Swan's Egg, a fine old Pear.

November to Christmas.—Pitmaston Duchess, Doyenné du Comice, and Durondeau. Those three far surpass all Pears for marketing in November onwards, and are what I recommend. Gregoire Bourdillon is of the Duchesse d'Angoulême type and better. Marie Louise d'Uccle bears freely and is excellent, hardier than Marie Louise and later. Marie Louise also forms a capital standard and bears well. The two last ought, perhaps, to have been included in the October Pears, but I give them as the fruit ripens from standards. Forelle also bears well, and is good in colour and quality. Beurré Diel I have never once had good from a standard. Louise Bonne, this I have not seen for some years. It is large and handsome and keeps well. The three kinds that head this section have large fruit, particularly the first, and should have shelter, or the winds play havoc with the fruit, but not more than others with large fruit. As the trees age they are better.

Late.—These are mostly lacking in size. The best is Marie Benoist, and I shall only name Winter Nelis, Josephine de Malines, Zephirin Gregoire, and Olivier de Serres, and do not recommend them for cold localities. We want larger, better-looking, and harder late Pears. For stewing Catillac and Bellissime d'Hiver. Perhaps I ought to state that Windsor Pear was not omitted through inadvertence, as might be presumed from a neighbour having told me that he this year had 10s. per bushel for fruit of a standard tree. I suppose he had seen my stating in the *Journal of Horticulture* having got 6s. last year for Williams' Bon Chrétien, and did not like to see this old and tried friend omitted. I have had it excellent, a good sized, fine looking, and free cropping sort on the silicious or shallow soils as far north as York; and my neighbour's trees are on an oolitic loam of about 2 feet depth, with 4 to 6 feet thickness of gravel under. On a cool bottom I have not seen it do well, so that circumstances alter cases, and not being suitable in my opinion for general planting it was omitted.

I have also a reminder of having omitted Violet in early Plums. This, too, was not an oversight. Violet, I am aware, is a very popular and a capital sort where it succeeds, which I have only found in localities having the same strata of soil as described in the case of the succeeding of the Windsor Pear—viz., silicious loams or shallow overlying sand or gravel. In deep loams I have generally seen it a shy bearer. Violet is good either for dessert or kitchen—a very good Plum.

MIDSEASON AND LATE APPLES.—It is a much easier matter in dealing with selections of these than with Pears, which are far more variable than Apples—i.e., are more influenced by soil and climate. A good deep loam is best for Apples only if be free from water lodging in the

subsoil, but even in shallow soils Apples succeed, only care is taken to feed them by surface dressing of manure. Manure orchards! Why not? The grass would be far better; a dressing of compost, ditch securing, pond cleanings, roadside parings, with a sixth of lime added, are excellent

DESSERT APPLES.—These as a rule are small or not more than medium sized. We want Orange Pippins as large again, but then we have larger in kinds that are good either for eating or culinary purposes.

October to December.—Cox's Orange Pippin, a beautiful Apple, and



Fig. 46.—CAMELLIA TRICOLOR.

if only given occasionally, but better if alternating with a dressing of manure every alternate year. Twenty cartloads per acre of manure or compost.

the very best variety in cultivation, but my experience of it is confined to silicious and oolitic loams overlying sand or gravel, in which it attains much more colour than on deep loam on a cool bottom. Very free in

growth though not stout, and forms a prolific standard. Wyken Pippin, though not so large nor so handsome as Orange Pippin, is a capital Apple, forming a large and prolific standard and is first rate. Margil does well on silicious limestone or oolitic soils, and though only forming a moderate-sized standard is very free bearing and in every respect excellent. Golden Winter Pearmain (King of the Pippins), very handsome and likes a good soil, where it gets larger and is in every way better. On a light hot soil the fruit is not large enough, and is dry; indeed, unsatisfactory. Rihston Pippin is not satisfactory in some localities and is, on that account, omitted.

November to over Christmas.—Ashmead's Kernel likes a good soil—i.e., deep loam, and in Hereford and Gloucester attains a fair size, but in some localities is very small. Golden Pippin, a favourite, and likes a good soil, in which it only forms a moderate-sized standard. Braddick's Nonpareil, a miserable thing on light soil, but on good soil is much better. Old and Scarlet Nonpareil do better on light soil, Scarlet Nonpareil being very handsome and of medium size, the trees are small growers but good bearers. The Queen, a nice size, very handsome, a good bearer, and seems to do finely as a standard, which, being established, the others may be struck out, as we want size and must have it if we are to keep our own in the markets.

At and after Christmas.—Scarlet Golden Pippin. This is something an increase in size on the Golden Pippin, very little, but of fine colour. Court of Wick, handsome and capital, only wants size, though it is better than some, and likes good soil. Claygate Pearmain, a small fruit on light soil, larger on good soil, but not a large tree under any circumstances. Gipsy King, very handsome, and likely to prove good as a standard. Duke of Devonshire, nice size and good sort, but wants the size of Adams' Pearmain. Syke House Russet, though a great bearer as a standard is too small.

Late.—These are valuable and well kept superb, especially Reinette du Canada, large, handsome, in use from Christmas, free, healthy, and good bearer. White Nonpareil, nice looking and capital eating, being brisk and first rate; indeed, these two and the other Nonpareils are much relished by those that do not like a hard Apple or have delicate stomachs. Lord Burghley is a beautiful Apple, but the tree cankers, and such are no use for large culture. Allen's Everlasting, showy, but too small, though it may be termed medium, fruitful, and healthy. Starmer Pippin simply will not grow with me, being too stunted in growth and the fruit pitted. I have tried it on good soil, also on shallow, being worst in the last.

Kitchen Apples.—Cox's Pomona, large, handsome, good cropper, October to Christmas. Ecklinville Seedling, great bearer, fruit large, but soft. Cellini, large, handsome, good cropper, but will not keep. Small's Admirable, great bearer. Warner's King, first-rate, size, cropping and all points considered. Hawthornden New or Winter, very good and early bearer. Bramley's Seedling, one of the very best, great cropper and fine fruit, first rate. Herefordshire Beefing, fine in every respect and capital bearer, likes good soil. Two fine looking large Apples, and as good as they look, are Peasgood's Nonsuch and Beauty of Kent, handsomer fruit it is not possible to conceive. Golden Spire makes a trio of handsome fruit. Grenadier is a new sort and a great cropper, evidently of the Hawthornden race, very good. Pott's Seedling may be mentioned as a marvel of productiveness, but I have only tried it as a pyramid. Loddington or Stone, very large and good.

From Christmas Onwards.—Tower of Glamis, large, handsome, good cropper. Bedfordshire Foundling, large, healthy grower, and good bearer. Betty Geeson, great cropper, even when young. Dumelow's Seedling (Normanton Wonder, Wellington, &c.), perhaps the most popular of culinary Apples, good in appearance, keeping well, and of sufficient size to recommend it. Schoolmaster I have only as bushes and pyramids, very excellent it is in that way. Northern Greening, a popular north-country Apple, medium size, and excellent for bearing. Rymer is more liked by some than Dumelow's Seedling. It is large and good looking, but is not considered to keep so long. Gooseberry Apple, a great bearer, very long keeper, and bears well. Prince Albert, fine, only grown as pyramid.

Apples good for Cooking or Dessert.—Emperor Alexander, Nelson Codlin, Small's Admirable, Blenheim Orange or Pippin, Lady Henniker, Cobham, Lemon Pippin, Green Balsam, Fearn's Pippin, Dutch Mignonne, Herefordshire Pearmain, Royal Russet, and Hambledon Deux Ans. Grand Duke Constantine is large and handsome. Gravenstein, first rate, but not a great cropper.

For extensive cultivation I advise of dessert Apples, Cox's Orange Pippins, King of the Pippins, The Queen, Gipsy King, and Reinette du Canada. Kitchen, Ecklinville Seedling, Warner's King, Winter Hawthornden, Bramley's Seedling, Loddington or Stone's, and Dumelow's Seedling. Of Apples suitable for any purpose my selection is Emperor Alexander, Nelson Codlin, Small's Admirable, Blenheim Orange, Cobham, Fearn's Pippin, and Dutch Mignonne. Altogether eighteen varieties, but all are good.

CHERRIES.—These like a light soil or well drained, and are best on silicious, limestone, and oolitic soils. Early Rivers, Empress Eugénie, May Duke, and Royal Duke, Frogmore Early Bigarreau, Governor Wood, and Bigarreau Napoleon. For culinary, Kentish and Morello. Preparatory to planting the ground should be well drained if necessary, and the ground trenched as deeply as the good soil allows, not bringing up much of the stubborn soil to the surface, but the bottom of the trenches should be turned or loosened with a pick and left. In the case of very stiff soils it will be advisable to burn enough of the clay to cover the ground 6 inches thick, and mix that with the top 18 inches. In planting on wet or heavy soil raise a mound for planting on of 12 to 18 inches height, and with gentle slope outwards. Secure the trees with stakes at planting, and mulch over the roots a yard around the stem with about

half-rotten manure 3 inches thick. If this thickness be given over the whole ground, and that mixed with the top foot, it being placed on in frosty or dry weather, the land will be fit for anything, cropping with suitable vegetables, or planting with bush fruit, both good means of establishing an orchard in half the time to planting trees on grass.

A site with a southern exposure should be chosen, and if possible sheltered to the north, north-west, and north-east. Damson trees are profitable and by no means inefficient shelters. It is whilst the fruit trees are young that they require most care, as when they become large they protect each other. Twenty-four feet apart is a proper distance to plant the trees for orchards.—UTILITARIAN.

CHRYSANTHEMUMS AND THEIR CULTURE.

(Continued from page 269.)

WAITING FOR THE VERDICT.

PROBABLY the most anxious time an exhibitor of Chrysanthemums has during the whole year is the short period in which he is "waiting for the verdict;" this is rendered more so if he is in doubt as to how the judges will decide. Some growers possessing much experience can form a pretty correct opinion at the time of staging, except where the quality of the opposing collections are pretty even with their own; in such cases it is only by examining every bloom on its merits that a satisfactory conclusion can be arrived at. This can be much best done by judges who do not know the collections, nor have any partiality. The grower is at times likely to regard his own geese as swans.

The best way an exhibitor can employ his time during these anxious moments is to busy himself with the packing up of his tools, bottles, boxes, and spare blooms, stowing all away snugly, so that they do not interfere with anyone; also sweeping up the room, leaving all neat, so that no difficulty will be placed in the way should circumstances require the same favour to be granted on another occasion. Many times have I seen exhibitors much too careless in this matter, leaving their boxes and rubbish, such as decayed florets, bits of wood, and so on all over the place; this is not as it should be. Sometimes exhibitors hang about the doors of the building, anxious, no doubt, to pick up a word or two from officials passing to and fro. I have known false reports circulated, which caused an exhibitor to despatch telegrams notifying his success, but when the result was officially announced, instead of his being at the top he was at the bottom of the list. No doubt this anxious feeling is not easily overcome by "young beginners" in exhibiting; even older men cannot always suppress their feelings at such critical times.

The best advice I can give to young exhibitors is this: As soon as the duties of staging and tidying up are complete, let them leave the exhibition building entirely and find a hairdresser. An acquaintance with soap and water will do much toward refreshing the outer man, whose appearance may not be too bright after a long railway journey and loss of sleep. Some dinner will improve the inner man, and then the anxious exhibitor ought to be in a good frame of mind for receiving the verdict. If he should be the lucky winner and the stake at issue an important one, rest assured he will receive congratulations abundantly, and feel the truth of the old adage that "there is nothing succeeds like success." Accept the greetings unostentatiously, and do not speak lightly of your opponent or his blooms, but remember that although you are at the top of the tree to-day another year you may exchange places. In many cases it is only a turn of Fortune's wheel in your favour. If you happen to be placed second, do not seek to cavil with your more lucky opponent over some of his blooms, even if weak points can be found in his stand, as, depend upon it, more can be found in your own. Accept the verdict of the judges with a good grace, for in nineteen cases out of twenty it is right, and return home a wiser if a sadder man, but with the spirit of emulation stronger within you. Much information can be gained from defeat, and if turned to account it may enable you to outdistance your rival on the next occasion.

TAKING NOTES.

Growers of Chrysanthemums, and more particularly those who exhibit them, should always take notes of any new or uncommon varieties which they do not possess, but see staged at the shows, as new varieties possessing merit are sure to find their way there. This plan is preferable to purchasing supposed new kinds early in the season, growing them, and eventually finding them worse than some already in their possession. This applies to the Japanese varieties mainly, as they are sent out each in far larger numbers than any others. In the afternoon of the day, then, on which the show is held make a practice of thoroughly examining all the stands to see if any new varieties are staged; even if they are not presented in good form an idea can be formed as to their ultimate qualities when grown under favourable conditions. I note carefully down the name, what section they belong to, the colour, form and size of each,

and who they are exhibited by: this is all useful matter for future reference. Some growers do not do this, but depend upon the opinions of others, but I can assure all young beginners that it is time well spent.

Note-taking at home is also of much value. Young growers especially should note in separate columns the names of varieties, the date when propagated, when crown and terminal buds were taken, and how the blooms developed from each; at what time, and how the plants were fed with stimulants; when they were housed; what size the buds of certain kinds were at that period; the time from the date of housing each variety required to develop, and how long the blooms remained fresh after expansion, also the size of each. All these items are most useful. I do not think that any grower can become proficient in the culture of the Chrysanthemum without taking copious notes, and referring to them very often during the following season. By such observance the peculiarities of varieties are ascertained, a repetition of former mistakes avoided, and the end in view more easily attained. My practice of registering observations is the following:—

Name.	Propagated.	Crown Bud.	Remarks.
Queen of England....	December 8th	September 1st	Right date.
Peter the Great.....	" 7th	August 9th	Too early.
" "	" 26th	" 25th	Right.
" "	" 26th	September 8th	Too late.

I strongly urge on all who are striving for superiority in Chrysanthemum culture to adopt some such system, and they will be certain to find their notes of great service in the work in hand.

THE LEAVES OF CHRYSANTHEMUMS.

The leaves of the plants can be studied with advantage. Suppose a grower of Chrysanthemums has varieties sent to him that he is wishful to procure, and they are not sent true to name; he ought to be able to detect the mistake by the leaves in time for the error to be rectified, instead of losing a season in finding it out. Or, if by chance labels get removed and misplaced, as they often do in potting, the mistake can be detected and corrected at once, as an observant cultivator knows all his varieties by their foliage as well as by their blooms. A few examples of leaf and growth peculiarities may be adduced.

Refulgence has dense green, deeply cut foliage with green stems, which assume with age a purple green. Soliel Levant is easily known by its leaves, which have very long stalks and droop much, giving it the appearance of suffering by want of water; the stems are quite dark in colour. Venus, both the pink and white varieties, are known by their short leaf stems, and the leaves overlapping closely, giving the plants a dense appearance. Thunberg has stems the darkest in colour of any variety; the leaves are long and droop much, which gives it the appearance of being unhealthy. Peter the Great has green stems, large broad leaves with short stalks, and the leaves are cut but little compared to some varieties. Cherub is easily known by its light green wood; the leaves grow in an upward direction, the veins of which are plainly seen, as they are generally much lighter in colour; this variety is quite distinct from all others. Grandiflora has leaves very thick and heavy in substance with a drooping character, and assume bronzy shades of colour early. Meg Merrilies, Golden Dragon, and Boule d'Or are distinct from others, by reason of their leaves being, as a rule, of a pale colour during the growing season; this is more noticeable in some localities than in others, owing possibly to the soil. These few varieties and their peculiarities will suffice to show what is meant by a study of the leaves.

HINTS TO SOCIETIES ON OFFERING PRIZES.

Chrysanthemum shows are increasing yearly, and are being established in nearly all populous towns and cities. In and about London, where there are so many exhibitions, the dates must, in a few instances, clash with each other. This necessitates a liberal schedule of prizes to tempt exhibitors to compete. The first consideration of every society ought to be the exhibitors, because without these there can obviously be no show. There is, in my opinion, no prize which incite so much competition and bring so many good specimens as challenge vases. These create a stimulus both to exhibitors and visitors, and the annual floral tournaments are looked forward to with great interest, and not without anxiety, as those exhibitors know who have had the custody of a costly trophy for a year, and other able men striving to relieve him of the responsibility. A good prize in money with the challenge vase is calculated to encourage the best growers to enter the lists and thus make a good show.

Some societies offer prizes for forty-eight blooms, composed of

twenty-four incurved and the remainder Japanese varieties, all to be distinct. This number prohibits many persons from competing. It is most difficult for even the largest growers to stage forty-eight distinct varieties in the best condition. What is better and calculated to make a better show is a class for forty-eight blooms, twenty-four to be incurved, in not less than eighteen varieties, and not more than two of one sort; the Japanese to consist of the same number and under similar conditions. There is no comparison in the ease with which this class can be filled to the other class, where all are to be distinct. More uniform stands can also be obtained by duplicating some of the blooms, and the general public are better satisfied—a matter which societies cannot entirely overlook. Unfavourable comparison is often made between stands, one containing all the flowers distinct, and the other thirty-six varieties only. It is not possible to compare them, as the addition of twelve duplicate blooms in the place of twelve weak ones makes a marked difference in the appearance of the stand. Another class requiring attention is that for Anemone flowers. Since the advent of the new type (Anemone Japanese) the older varieties, of which Gluck is a fair representation, are fast being elbowed out of the shows by their more attractive rivals, simply because these are more appreciated. The remedy, to retain both sections, is to offer prizes in separate classes, whereby both are encouraged without detriment to either.

It is most important that the classes in schedules be so worded that only one meaning can be attached to them. It is not possible to be too careful in this respect, as indefinitely expressed stipulations lead to confusion and mistakes, as well as discourage entries, for many exhibitors would rather keep their blooms at home than incur the risk of their being disqualified at a show, and of these I am one.

SUMMARY.

A summary of hints which are essential to success in the cultivation of the Chrysanthemum can be placed in a concise manner. The first thing is the necessity of acquiring a knowledge of each variety and its peculiar requirements; this can be obtained only by close study on the lines previously indicated. Incessant watchfulness and strict attention to their wants are absolutely essential at all seasons. Any person having the necessary means can grow Chrysanthemums up to a certain date—say the end of June. After that time a failure often follows. The reason in nine cases out of ten may be traced to neglect. At the time of the shows and for a few months afterwards the plants receive every attention, but when other work presses heavily the fever and excitement of exhibiting wanes, the plants are neglected and quickly go wrong. It is the unceasing attention bestowed upon them at all times, and more particularly during the hottest days of summer when much labour is required in watering and other cultural details, that goes a long way towards developing the blooms in all their beauty. To an enthusiastic cultivator who attains his object the hard work is little thought of when success has been achieved.

ADDENDUM.

TAKING THE BUDS OF CHRYSANTHEMUMS.—In writing upon this subject (page 485) as a part of my treatise on the culture of the Chrysanthemum, I advised that the buds be "taken" from about August 10th to September 1st. I have always tried to impress upon beginners that there is no necessity to do certain things on the same date exactly; indeed, it is impossible to "take" Chrysanthemum buds on any given day of the month, for the reason that buds do not always show on the same date each year; therefore, should they show on the 5th of August one year instead of the 10th, it is hardly likely that I should advise the removal of such buds because of their being five days too early. It has been suggested that the time I advised for "taking" the buds was quite too late for northern growers. Through the kindness of friends I am enabled to give the opinions of growers in various parts of England as to the time they find best suited for "taking" the buds. As will be seen from their reports my advice is substantiated, and as an addendum to my notes on Chrysanthemum culture I trust it will not be the least interesting of the series. From letters before me I quote the following:—

Mr. W. Mease, The Gardens, Wyncote, Allerton, Liverpool, says:—

"I have read your articles on the Chrysanthemum in the Journal, in which you advise 'taking' the buds from August 10th to September 1st, and from my experience I do not think safer advice could be given."

Another noted Liverpool grower, Mr. W. Lindsay, The Gardens, Otterspool, writes:—

"Substantially your dates are the same as ours with this little exception: If any of the late-blooming varieties show their buds earlier in August we take them; the bulk of the varieties, particularly the Empress family, about August 20th; our last bud, and that a Cherub, was taken September 8th."

Mr. W. K. Woodcock, The Gardens, Oakbrook, Sheffield, says :—

"In replying to your inquiries as to the dates we in Sheffield have found most advantageous for 'taking' the buds, we have not found them to differ materially from those given by yourself, and with very few exceptions buds 'taken' from August 10th to September 1st produce the best flowers; the exceptions are a very limited number of varieties which produce the best flowers from buds 'taken' during the first week in August."

Another cultivator situated much farther north than any of the preceding ones, Mr. T. B. Morton, Mowden Bridge Nurseries, Darlington, Durham, expresses himself thus :—

"I have carefully read your articles on 'taking' buds, and I fully agree with all you say. Only so far north as this I would 'take' buds of Meg Merrilies and Boule d'Or the first week in August. As regards the incurved section, especially the Queen family, I would take them from August 25th to Sept. 6th. About here as a rule the buds are most plentiful the first fortnight in September."

Mr. R. F. Jameson, Hessele, Hull, writes :—

"Buds of Meg Merrilies and Boule d'Or, for example, should be 'taken' as near about August 3rd as possible; other varieties from August 10th to September 1st. My flowers were late last year, therefore I thought I would be soon enough this season. Consequently I 'took' buds of some varieties during the first week in August, and I find I have been in too great a hurry, as the blooms of Mlle. Lacroix, Jeanne d'Arc, Sœur Dorothee Souille, and Margaret Villageoise are already developing fast."

From the Northern Division of the West Riding of Yorkshire Mr. Midgley, The Gardens, Bankfields, Bingley, and Mr. Shaw, Oakworth House Gardens, Keighley, each growers of 500 plants, gave me their opinions in conversations on "taking" the buds—namely, that from the middle of August to the same time in September is the best time for that locality; and Mr. W. Heath, Hampton Manor Gardens, Birmingham, informs, me "From the end of the first week in August to September 1st answers the best for 'taking' the buds for first-class blooms." It remains only to thank my correspondents for their co-operation in settling a disputed point, and to express satisfaction that my practice is confirmed so thoroughly by so many noted cultivators.—E. MOLYNEUX.

(Concluded)

A MIDLAND SEED FARM.

No department of commercial horticulture is more important than that which is concerned with seed-growing and saving, especially now that an interest in gardening has extended so widely amongst the masses. Vegetables and flowers are in greater request than ever, and in consequence the maintenance of a full and pure supply of seeds has required increased attention. Few, perhaps, of the thousands who annually send in their seed orders have an adequate idea of the labour and expense needed to ensure having the numerous varieties true to their particular characteristics. Such work cannot be carried on in a haphazard fashion, as the slightest carelessness or confusion would cause disappointment to numberless persons, and if once the stock of any variety is allowed to deteriorate, it is often very difficult to obtain it again in its original form. Constant watching by experienced assistants, a carefully considered system of planting and cropping, ample space of land at command, and harvesting the seed in good condition, are the essentials to success in this business. There are, of course, other matters that require attention, also such, for instance, as the character of the soil upon which the plants are grown, for this is found to exercise a considerable effect on the quality of the seed produced. If good plants, either of vegetables or flowers, are desired, it is of the utmost importance that plump matured seed be obtained, and this is most likely to be procured from well nurtured plants grown in sound substantial soil. All who have had any experience in gardening realise to the full the importance of securing good seed, for the best culture is otherwise of little avail, and it is a serious matter, after a season's labour and expectation, to find that one's time has been spent over an almost worthless variety.

A visit to one of the great establishments to which we are indebted for well organised systems of seed-rearing and saving is always interesting and instructive to both amateur and professional horticulturists, and a brief description of a few hours spent on Messrs. Webb & Sons' farms and trial grounds at Kinver will serve to illustrate the subject to which reference has been made. The headquarters of the firm are in Wordsley, a short distance from Stourbridge, on the Great Western line from Worcester to Wolverhampton, and in a manufacturing town chiefly occupied with the production of glass and pottery many persons would be surprised to find such a large establishment of a totally different character. Huge warehouses, spacious offices, and other buildings cover a large extent of ground, and though in every portion utility rather than ornament has been evidently the main object, yet there is a substantiality of appearance that is quite imposing. When arriving at Stourbridge with the intention of visiting Kinver, the seed warehouses are taken *en route*, and they well repay for an inspection, for nothing can give a better idea of the magnitude of a business than such store houses. Not only is a great space devoted to the garden, vegetable, and flower seed and bulb trade, but the farm seeds also occupy some extensive floors. Potatoes constitute another important department, and in addition to these Hops and wool form almost separate businesses, having received the special attention of the firm for many years. Then there are the machinery rooms,

where the seed-sorting and cleaning are carried on, packing rooms for home and export, and innumerable other offices, which in the height of the seed season present a busy scene, and a very short period of rest is obtainable, for there is a succession of seasons for the various specialties. Now is the busy time with the bulbs, the trade in which is steadily increasing, and this season the consignments seem to very satisfactory in quality.

But all this may be taken in parenthesis, for we started to see the Kinver farm, and will now resume our journey. In fine weather the drive from Wordsley to Kinver is a most enjoyable one, the scenery is varied and interesting, and in some portions of the route quite picturesque, especially when nearing the village of Kinver. The road there is a very steep ascent, and some pleasing glimpses of distant landscapes are obtained at certain points, while at others the road passes through deep cuttings in the red sandstone, with a dense tree canopy overhead. If the traveller has the time, he will also do well to prolong his journey beyond the farm and up to the remarkable Kinver Edge, from which a magnificent prospect is seen, extending over a great extent of country. The seed farm and trial grounds occupy the slopes and lower portion of this hill, 1600 acres being appropriated to this purpose, the greater portion being a rich substantial loam that suits almost any vegetable crop admirably. The farm serves a special and important purpose, being something more than a mere trial ground, for it is there that the stock seeds of new and choice varieties are raised for subsequent distribution to various parts of the kingdom for farther increase. Proving the merits and purity of novelties is thus carried out under the immediate superintendence of the heads of the firm, who are practical and successful cultivators. The practice is when a novelty is secured to test it thoroughly at Kinver; then, if found sufficiently distinct, it is grown isolated from other similar crops. To prevent its becoming mixed it is carefully "rogued;" that is, all plants not showing the true character are destroyed, and the seed thus raised constitutes the "stock," which another season will probably yield sufficient for placing in the market. This system applies to the general farm crops, vegetables, and flowers, and has been found to yield excellent results. It can be readily imagined that much land would be required for raising the general supply, and it is estimated that in various districts of Great Britain and the Continent Messrs. Webb & Sons have 16,000 acres thus occupied.

A glance at some of the principal crops at Kinver will serve to convey an idea as to the leading specialties. The cereal crops, which form an important part of the business, can only be cursorily noticed, but they deserve a few words, as a large acreage of land is appropriated to them. Of Wheat, for instance, there has been this season about 185 acres, comprising selections of considerable merit, such as Kinver Giant White, Challenge White, Selected Square Head, Selected Golden Drop, Hardcastle White, Selected Rough Chaff, and many other choice selections. Of Barleys have occupied 200 acres, chiefly Golden Grain, Kinver Chevalier, and Webb's Beardless, while of Oats there were 168 acres of Challenge White Canadian, Prolific Black Tartarian, New White Tartarian, and others. As coming under the head of general farm crops, it may be mentioned that some special selections of Swedes, Mangolds, and Turnips were also being grown at Kinver, but the greater portion of these are cultivated in other districts.

Turning to what will more particularly interest the readers of this Journal, the garden vegetables and flowers, the former may first receive attention. The importance of Peas amongst the choicer vegetables is widely recognised, and upon these extra care is bestowed in the trial grounds. No less than 140 varieties have been tested there this season, the comparison of the respective qualities of which has been an arduous but most useful task. They included several novelties not yet in commerce, but promising well, while the numerous varieties previously sent out from Stourbridge well maintained the reputation they have already gained. Wordsley Wonder, in particular, has been extremely good, and as an early blue wrinkled Marrow it deserves high commendation, being dwarf, prolific, and of fine flavour. Chancellor, another new Pea, a capital main crop Marrow, is remarkable for the size of the well-filled and abundantly produced pods. Kinver Green is a good early variety, Stourbridge Marrow, a second early, with Triumph and Electric Light for the main crops, are all varieties identified with the name of the Stourbridge firm.

Potatoes are made a strong feature at the trial grounds, 67 acres being devoted to them, but only the new varieties are grown there, such as Kinver Hill, a second early kidney, Discovery, a seedling from Woodstock Kidney, and Benefactor, a main crop variety from a cross between Blanchard and Scotch Champion, Surprise, Reliance, Improved Magnum Bonum, and Improved Schoolmaster, all of which have been thoroughly tested with satisfactory results. Cabbages are abundantly represented, the excellent variety named Webb's Emperor being very conspicuous. This is not a novelty, but has now become an established favourite in many gardens, being of quick growth, forming a solid heart, and of mild flavour. Beans constitute another important class of vegetables. A remarkably fine long-pod variety is Kinver Mammoth, the pods commonly over 12 inches long, and sometimes 18 inches, well flavoured, and capital for exhibition. Golden Queen Butter Bean is prolific and of very good flavour, Victoria Dwarf French Bean and Selected Scarlet Runners being also notable sorts. Many other vegetables might be named of which there are special types, as for example Matchless Brussels Sprouts, Autumn White and Champion Broccoli, Early Mammoth Cauliflower, Little Wonder Savoy, Summerhill Cabbage, and Wordsley Gem Cos Lettuce, Improved Banbury Onions, Parsnips, Carrots, Turnips, Radishes, Celery, &c.

All the preceding are such practically important crops that they demand first notice, but the beauty of the Kinver farms is seen in the floral department during the summer months when the numerous annuals are rendering the ground gay with brilliant and varied colours. Acres of Marigolds, Asters, Sweet Williams, Zinnias, Nemophilas, Stocks, Poppies, Tropæolums, Larkspurs, Candytufts, Silenes, Clarkias, Saponarias, Eschscholtzias, Godetias, and innumerable other plants, have a grand effect viewed generally, and when inspected more closely it is found that each variety or strain is as true and good as the most careful selection can make it. During recent years, in response to the increasing demand for such flowers, Messrs. Webb & Sons have greatly extended this department, and their untiring efforts to secure an adequate supply of good seed have been well rewarded. Enormous numbers of annuals are now grown in gardens, and with miscellaneous hardy plants they are diminishing the number of ordinary bedding plants employed for outdoor decoration. Their popularity can be readily understood, for well grown plants of the improved strains now obtainable make most effective beds. Zinnias, for instance, are admirable for such purposes, and at Kinver the strain is distinguished by the large size of the flowers and their brilliant colours. Ten-week Stocks also have been very handsome, compact in habit, with large heads of flowers, a large proportion being double, and the colours purple, crimson, and rose very rich, and the white pure. It is called the Imperial strain, and is certainly of praiseworthy quality. Asters are represented in all their different types, by good selections, the Victoria, Quilled, Pæony, and Chrysanthemum-flowered being conspicuous, a remarkably dwarf variety named Webb's Miniature being also noteworthy, the plants averaging 6 inches in height, with rose, purple, crimson, and lilac flowers. They are well adapted for margins of beds or for culture in pots. These few are only named as examples, but all the most approved annuals are grown, and in the majority of cases there are special selections, the merits of which justify the distinguishing names bestowed upon them.

In other portions of the farm are trial beds of lawn and pasture grasses, of considerable interest as showing the respective value of the different species and varieties both singly and associated with others. Upon some of the crops extensive trials have also been made with artificial manures, including those manufactured by the firm, and a method has been adopted by which the qualities of the various sorts are demonstrated most convincingly. In large beds of considerable length a number of varieties of one kind of vegetable are planted in transverse lines, one variety only in each line. Perhaps one half of this bed will be treated with a particular manure throughout its whole length, and the other half with another sort, the effects of which it is desired to bring into comparison. The result is that the effects are seen upon a score or more of varieties at once, and in some cases the difference in the two sides and the uniformity of result in the numerous varieties is surprising. By such facts as these a visitor is impressed with the consideration exercised in every department of a great business, and it is only by such means that fame can be made or sustained.—VISITOR.

ROSE MADAME GABRIEL LUIZET.

REFERRING to "D., Deal's," note on the autumnal blooming of Madame Gabriel Luizet, it would be interesting to know on what shoots the flowers were produced. With us a great number of beautiful flowers have been produced during the autumn upon side growths from the shoots that ought to have borne flowers in June, but were nipped in the bud in May; but the strong sucker-like shoots from the base of the plant are as flowerless as formerly. From this it occurred to me that possibly the freedom with which Madame Gabriel Luizet was flowering this autumn might be due to the fact that the growth of the plants was severely checked in the spring, whereby the shoots that were about to flower had their bloom destroyed, and so made a secondary growth, which carried bloom; for this variety, being early, was terribly crippled by the spring frosts, hardly one bloom in fifty escaping, so that by midsummer or soon after there was an immense number of shoots ripe that had, so to speak, done no work; and these began to grow again before the big growths started from the base.

Gloire Lyonnaise, with which fault has been found for not blooming a second time, has been very free this autumn in a similar manner, and it also was much injured in May. But in this case I have also found one or two blooms at the end of long sucker shoots, so that it may be that it takes new varieties a season or two to recover from over-propagation when they are distributed and show themselves in their true character, as Mrs. George Dickson has been flowering freely this autumn, and it certainly did not last year.—T. W. G.

PIT MOUND GARDENING IN THE BLACK COUNTRY.

(Continued from page 276.)

To those unaccustomed to the Black Country district, and especially those seeing it for the first time, and particularly in the autumn and winter months, successful gardening would be written down as an impossibility, excepting in isolated places. In the Journal of September 23rd you gave a very favourable opinion on some flowers of an excellent strain of French Marigolds growing in the heart of Darlaston, Staffordshire, a township which has for a long time been suffering from the severe depression in the iron trade of the district. The atmosphere of the district is dull and very smoky, and pit mounds abound, the whole of the earth for miles round being more or less honeycombed by the searchers after coal and iron stone. The garden in which the French Marigolds

are growing is far from being a promising field for garden operations, being really a reclaimed pit mound garden in which shale is abundant, but Mr. G. A. Wilkes is an enthusiast and struggles on under difficulties, and this year had excellent Stocks, Asters, Marigolds, and a few other kinds of flowers, for very few can be grown successfully. He originated the new Horticultural Society in this township, which held its first flower show in August, and it was a wonderful display of local productions for the district, vegetables being in great form. There are a large number of plots of ground in and about Darlaston, many of them reclaimed from the pit mound deposits, where gardening is attempted, and in many cases with considerable expense, and it looks as though a great many felt that the greater the difficulty in obtaining success in the garden the more determined they were to accomplish it. Then, again, the absence of green fields and pleasant hedgerows, and gardens full of flowers as met with everywhere outside the Black Country, stimulates those who are in less favoured localities to obtain the best results possible, and the thorough enjoyment of what they do produce. I visited amongst other gardens one in the possession of a Mr. William Underhill, who is employed about large colliery works in the neighbourhood, and is truly amongst the smoke. One garden is well fenced by a Privet hedge, and although small is exceedingly well cultivated, and includes a small greenhouse and two or three frames. Close by the colliery he has a bit of ground about 15 yards long and 3 to 4 yards wide, recently dug up from the shale and small coal thrown out from the pits, adding, as he could lay his hands upon them, any street sweepings, garden soil (not at all easy to get good), manure of any kind, and, in fact, any fertilising matter available, but the soil of the garden is almost exclusively cultivated shale, and he has excellent clean Carrots and Parsnips, and very good Canadian Wonder French Beans. He is a determined gardener and thinks, and with so much success that he won eighteen first prizes and eleven second and third prizes at the Darlaston Angust Exhibition in face of plucky competition.

Willenhall is another township in the Black Country, adjoining Darlaston, and also has a flourishing horticultural show annually, the exhibits being so extensive that four judges working in pairs get a stiff three-hours work amongst the vegetables, flowers, plants, &c., and where gardening is again very difficult, but the desire to accomplish it and win prizes is very strong. Here, as at Darlaston and Bilston and other places, the surroundings are so discouraging, but the establishment of these flower shows has done wonders in stimulating garden work, and such is the interest in the work that our gardening publications are taken in, and seeds procured from distant sources wherever it is felt safest to get them from. One man, Mr. Titus Watkins, a lock manufacturer employed at Messrs. Lloyd's lock manufactory, rents a strip of garden 50 yards in length and 6 to 7 yards in width, reclaimed from the side of a pit mound, and he also adds any soil, road sweepings, or manure he can get; but shale is the prevailing soil for his crops, and he pays 15s. a year rent for this strip of ground. He has the general crop of such a piece of ground, including excellent Leeks and Celery, Red Cabbage, Parsnips, first-rate Duke of Albany Peas, he took the first prize at the flower show with a fine dish, and Pansies do well with him. One of the Secretaries of the Willenhall Horticultural Society is a fine example of an amateur gardener, as well as a thorough Englishman, and Mr. Joseph Lowe (or Joe Lowe, as he delights in being called) is an auctioneer, and holds some important parish appointments. His garden is about 20 rods in extent at a rental of 35s. a year, and has been reclaimed from a pit mound. Willenhall possesses a dreary gardening aspect and suffers terribly from a smoky and deleterious impregnation of the atmosphere, so that Mr. Lowe has to surmount many difficulties; still, he gets his reward of perseverance in fair crops, some things being especially good. He also took a first prize in the open class for Duke of Albany Peas (a favourite this way), and has excellent Cabbage, Cauliflowers, Carrots, Celery, a very fine batch of Curled Greens, excellent Brussels Sprouts, Scarlet Runners, and Jerusalem Artichokes. But unfortunately all green crops are suffering from a terrible attack of a light purple-coloured aphid which the Black-Country people call "smother fly," and these and caterpillars are ruining all the green crops for miles around.

Bilston is another township close by Darlaston and Willenhall, and owns the premier Black Country Horticultural Society, far eclipsing those of Wolverhampton and Walsall, two large corporate towns on the east and west of the townships named. Their sixth annual Exhibition took place in August last, when close upon £140 was awarded in prizes, and their expenses were quite £250, but they always command a large attendance. Mr. Frank Nokes, the postmaster of Bilston, was the first Secretary, and is now the Chairman of Committee, and he is a determined man—just the man for the work, and has a very excellent working Committee; and they have made their annual Exhibition a big thing and the praise of the Black-Country folk. Garden plots or allotments abound in Bilston, which is also surrounded by pit mounds, iron works, jannanning works, with chimneys and smoke in every direction. Mr. Nokes, amongst others, owns a garden in the Green Lanes at the back of the cemetery, and is another example of a reclaimed pit mound garden made by thoughtful work. In this garden are excellent Cabbages, Savoy, or, as they are generally called in this district of the midlands, Curly Dutch and Ruffled Dutch, and Curled Greens. Barring the aphid, first-rate Peas and French Beans, good Celery and Parsnips, and Strawberries, and Asters, &c., are seen here. Another garden close by in the occupation of Mr. Thomas Southam is a notable example of what can be done by taking a piece of unprepossessing and apparently worthless shale and converting it into a garden with good crops as can be seen just now. Here, as in other cases I have mentioned, any soil, manure, or refuse which can be worked into a garden is made available, but it is difficult to get good materials for this

purpose. Close by is a tract of land of the same character, in which are good crops of Potatoes, and Broad Beans 4 to 5 feet high. I think there can be no doubt but that the shale from the coal and iron pits possesses some fertilising properties, and retains moisture to a considerable degree. Bilston cemetery is entirely on a pit mound, for when I called the grave-diggers were at work at a grave close by the side of the grave in which rest the remains of the late Mrs. Elizabeth Prosser, the well-known writer of many contributions to the "Sunday at Home," and other magazines. Not only to the bottom of the grave, but deeper still, nothing is found but dry slaty shale, and one wonders to see trees and shrubs growing as they do in this country. Sycamore, Black Italian and Lombardy Poplars, Wych Elms, Mountain Ash, Laburnums, common Ash, and Lilacs do well here, and it is one of the last districts in which I should look for good growing examples of the Lombardy Poplar. Holes were made and filled with soil in which the trees were planted, but the roots have got beyond now, and seem to be at home in the shale and any soil that may get washed into it.

Many instances of successfully cultivated garden plots could be mentioned, especially when the natural soil exists from broken-up pasturage, but such pasturage is not now plentiful. When the iron trade was flourishing, and the coal trade consequently so, the output from the pits was incessant, and thousands of acres of what formerly was pleasant well-cultivated arable land became a wilderness of waste land, from which the pleasant face of Nature's handiwork was blotted out. I have aimed more at showing what can be done under great difficulties and with very unprepossessing soils, and what has been done in making gardening land out of pit-mounds. In these days it is highly essential that a taste for gardening should be fostered among the working classes of the great manufacturing districts as an essential corrective of the very terrible evil so common in every district nowadays. Betting is the great curse of the Black Country, and no pursuit of an outdoor character except gardening seems to be free from it.

One more example of a Bilston garden and I have done with the subject. There is a nice villa recently built on a pit-mound side, and two years since what is now a *multum in parvo* garden was a mass of shale. It is the property and in the occupation of Mr. James Bird, one of the Bilston Township Commissioners, and the garden is a success. A vinery and other glass structures are there, in which some very fine Coleus and other plants are grown. *Cbrysanthemums* in pots are most promising, and the outdoor crops, consisting chiefly of Celery, Peas, capital Carrots, Roses doing well, excellent Dahlias, Stocks, and Asters, good Lord Suffield Apples, Strawberries, and other things; but much has been done to assist the shale by the admixture of good soil and manure and thoughtful supervision.—W. DEAN.

THE PAST HISTORY OF EXISTING PLANTS.

An address read before the British Association by William Carruthers, President L.S. F.R.S., F.G.S.]

In detaining you a few minutes from the proper work of the section, I propose to ask your attention to what is known of the past history of the species of plants which still form a portion of the existing flora. The relation of our existing vegetation to preceding floras is beyond the scope of our present inquiry: it has been frequently made the subject of exposition, but to handle it requires a more lively imagination than I can lay claim to, or, perhaps, than it is desirable to employ in any strictly scientific investigation.

The literature of science is of little, if any, value in tracing the history of species, and in determining the modification or the persistency of characters which may be essential or accidental to them. If help could be obtained from this quarter botanical inquiry would be specially favoured, for the literature of botany is earlier, and its terms have all along been more exact than in any of her sister sciences. But even the latest descriptions, incorporating as they do the most advanced observations of science, and expressed in the most exact terminology, fail to supply the data on which a minute comparison of plants can be instituted. Any attempt to compare the descriptions of Linnaeus and the earlier systematists who, under his influence, introduced greater precision into their language, with the standard authors of our own day, would be of no value. The short, vague, and insufficient descriptions of the still earlier botanists cannot even be taken into consideration.

Greater precision might be expected from the illustrations that have been in use in botanical literature from the earliest times; but these really supply no better help in the minute study of species than the descriptions which they are intended to aid. The earliest illustrations are extremely rude: many of them are misplaced; some are made to do duty for several species, and not a few are purely fictitious. The careful and minute exact illustrations which are to be found in many modern systematic works are too recent to supply materials for detecting any changes that may have taken place in the elements of a flora.

But the means of comparison which we look for in vain in the published literature of science may be found in the collections of dried plants which botanists have formed for several generations. The local herbaria of our own day represent not only the different species found in a country, but the various forms which occur, together with their distribution. They must supply the most certain materials for the minute comparison at any future epoch of the then existing vegetation with that of our own day.

The preservation of dried plants as a help in the study of systematic botany was first employed in the middle of the sixteenth century. The earliest herbarium of which we have any record is that of John Falconer, an Englishman who travelled in Italy between 1540 and 1547, and who brought with him to England a collection of dried plants fastened in a book. This was seen by William Turner, our first British botanist, who refers to it in his "Herbal," published in 1551. Turner may have been already acquainted with this method of preserving plants, for in his enforced

absence from England he studied at Bologna under Luca Ghini, the first professor of botany in Europe, who, there is reason to believe, originated the practice of making herbaria. Ghini's pupils, Aldrovandus and Cæs-alpinus, formed extensive collections. Caspar Bauhin, whose "Prodromus" was the first attempt to digest the literature of botany, left a considerable herbarium, still preserved at Basle. No collection of English plants is known to exist older than the middle of the seventeenth century; a volume containing some British and many exotic plants collected in the year 1647 was some years ago acquired by the British Museum. Towards the end of that century great activity was manifested in the collection of plants, not only in our own country, but in every district of the globe visited by travellers. The labours of Ray and Sloane, of Petiver and Plukenet are manifest not only in the works which they published, but in the collections that they made, which were purchased by the country in 1759 when the museum of Sir Hans Sloane became the nucleus of the now extensive collections of the British Museum. The most important of these collections in regard to British plants is the herbarium of Adam Buddle, collected nearly 200 years ago, and containing an extensive series, which formed the basis of a British flora, that, unhappily for science, was never published, though it still exists in manuscript. Other collections of British plants of the same age, but less complete, supplement those of Buddle: these various materials are in such a state of preservation as to permit of the most careful comparison with living plants, and they show that the two centuries which have elapsed since their collection have not modified in any particular the species contained in them. The early collectors contemplated merely the preservation of a single specimen of each species; consequently the data for an exhaustive comparison of the indigenous flora of Britain at the beginning of last century with that of the present are very imperfect as compared with those which we shall hand down to our successors for their use.

The collections made in other regions of the world in the seventeenth century, and included in the extensive herbarium of Sir Hans Sloane, are frequently being examined side by side with plants of our own day, but they do not show any peculiarities that distinguish them from recent collections. If any changes are taking place in plants, it is certain that the 300 years during which their dried remains have been preserved in herbaria have been too short to exhibit them.

Beyond the time of those early herbaria the materials which we owe in any way to the intervention of man have been preserved without any regard to their scientific interest. They consist mainly of materials used in building or for sepulture. The woods employed in mediæval buildings present no peculiarities by which they can be distinguished from existing woods: neither do the woods met with in Roman and British villages and burying places. From a large series collected by General Pitt-Rivers in extensive explorations carried on by him on the site of a village which had been occupied by the British before and after the appearance of the Romans, we find that the woods chiefly used by them were Oak, Birch, Hazel, and Willow, and at the latter period of occupation of the village the wood of the Spanish Chestnut (*Castanea vulgaris*, Lamk.) was so extensively employed that it must have been introduced and grown in the district. The gravel beds in the north of London, explored by Mr. W. G. Smith for the palæolithic implements in them, contained also fragments of Willow and Birch, and the rhizomes of *Osmunda regalis*, L.

The most important materials, however, for the comparison of former vegetation of a known age with that of our own day have been supplied by the specimens which have been obtained from the tombs of the ancient Egyptians. Until recently these consisted mainly of fruits and seeds. These were all more or less carbonised, because the former rifting of the tombs had exposed them to the air. Eberenberg, who accompanied Von Minutoli in his Egyptian expedition, determined the seeds which he had collected; but as he himself doubted the antiquity of some of the materials on which he reported, the scientific value of his enumeration is destroyed. Passalacqua in 1823 made considerable collections from tombs at Thebes, and these were carefully examined and described by the distinguished botanist Kunth. He pointed out, in a paper published sixty years ago, that these ancient seeds possessed the minute and apparent accidental peculiarities of their existing representatives. Unger, who visited Egypt, published in several papers identifications of the plant remains from the tombs; and one of the latest labours of Alexander Braun was an examination of the vegetable remains in the Egyptian Museum at Berlin, which was published after his death from his manuscript, under the careful editorship of Ascherson and Magnus. In this twenty-four species were determined, some from imperfect materials, and necessarily with some hesitation as to the accuracy of their determination.

The recent exploration of unopened tombs belonging to an early period in the history of the Egyptian people has permitted the examination of the plants in a condition which could not have been anticipated. And happily the examination of these materials has been made by a botanist who is thoroughly acquainted with the existing flora of Egypt, for Dr. Schweinfurth has for a quarter of a century been exploring the plants of the Nile valley. The plant-remains were included within the mummy-wrappings, and, being thus hermetically sealed, have been preserved with scarcely any change. By placing the plants in warm water, Dr. Schweinfurth has succeeded in preparing a series of specimens gathered 4000 years ago, which are as satisfactory for the purposes of science as any collected at the present day. These specimens consequently supply means for the closest examination and comparison with their living representatives. The colours of the flowers are still present, even the most evanescent, such as the violet of the Larkspur and Knapweed, and the scarlet of the Poppy; the chlorophyll remains in the leaves, and the sugar in the pulp of the Raisins. Dr. Schweinfurth has determined no less than fifty-nine species, some of which are represented by the fruits employed as offerings to the dead, others by the flowers and leaves made into garlands, and the remainder by branches on which the body was placed, and which were inclosed within the wrappings.

[The following is a list of the species of ancient Egyptian plants determined by Dr. Schweinfurth. I am indebted to Dr. Schweinfurth for some species in this list, the discovery of which he has not yet published:—*Delphinium orientale*, Gay; *Cocculus Læba*, DC.; *Nymphæa cœrulea*, Sav.; *Nymphæa Lotus*, Hook.; *Papaver Rhæas*, L.; *Sinapis arvensis*, L.; var.

Allionii, Jacq.; Mærua uniflora, Vahl.; Oncocha spinosa, Forsk.; Tamarix nilotica, Ehrh.; Alcea ficifolia, L.; Linum humile, Mill.; Balanites ægyptiaca, Del.; Vitis vinifera, L.; Moringa aptera, Gärtn.; Medicago denticulata, Willd.; Seshania ægyptiaca, Pers.; Faba vulgaris, Mærch.; Lens esculenta, Mærch.; Lathyrus sativus, L.; Cajanus indicus, L.; Acacia nilotica, Del.; Lawsonia inermis, Lamk.; Punica Granatum, L.; Eipilobium hirsutum, L.; Lagerania vulgaris, Ser.; Citrullus vulgaris, Schrad.; var. colocynthoides, Schweinf.; Apium graveolens, L.; Coriandrum sativum, L.; Ceruana pratensis, Forsk.; Sphæranthus suaveolens, DC.; Chrysanthemum coronarium, L.; Centaurea depressa, M. Bieb.; Carthamus tinctorius, L.; Picris coronopifolia, Asch.; Mimnops Schimper, Hochst.; Jasminum Samhac, L.; Olea europæa, L.; Mentha piperita, L.; Rumex dentatus, L.; Ficus Sycomorus, L.; Ficus Carica, L.; Salix Safaf, Forsk.; Juniperus phœnicea, L.; Pinus Pineæ, L.; Allium sativum, L.; Allium Cepa, L.; Phoenix dactylifera, L.; Calamus fasciculatus, Roxb.; Hyphæne theaica, Mart.; Medemia Argun, P. G. von Wurtemb.; Cyperus Papyrus, L.; Cyperus esculentus, L.; Andropogon laniger, Desf.; Leptochloa bipinnata, Retz.; Triticum vulgare, L.; Hordeum vulgare, L.; Parmelia furfuracea, Ach.; Usnea plicata, Hoffm.]

The votive offerings consist of the fruits, seeds, or stems, of twenty-nine species of plants. Three Palm fruits are common: the Medemia Argun, Würt., of the Nubian Desert, and the Hyphæne theaica, Mart., of Upper Egypt, agreeing exactly with the fruits of these plants in our own day; also Dates of different forms resembling exactly the varieties of dried Dates found now in the markets of Egypt. Two Figs are met, Ficus Carica, L., and Ficus Sycomorus, L., the latter exhibiting the incisions still employed by the inhabitants for the destruction of the Neuropterous insects which feed on them. The Sycamore was one of the sacred trees of Egypt, and the branches used for the hier of a mummy found at Ahd-el-Qurna, of the twentieth dynasty (a thousand years before the Christian era), were moistened and laid out by Dr. Schweinfurth, equalling, he says, the best specimen of this plant in our herbaria, and consequently permitting the most exact comparison with living Sycamores, from which they differ in no respect. The fruit of the Vine is common, and presents, besides some forms familiar to the modern grower, others which have been lost to cultivation. The leaves which have been obtained entire exactly agree in form with those cultivated at the present day, but the under surface is clothed with white hairs, a peculiarity Dr. Schweinfurth has not observed in any Egyptian Vines of our time. A very large quantity of Linseed was found in a tomb at Thebes of the twentieth dynasty, now 3000 years old, and a smaller quantity in a vase in another tomb of the twelfth dynasty, that is, 1000 years older. This belongs certainly to Linum humile, Mill., the species still cultivated in Egypt, from which the capsules do not differ in any respect. Braun had already determined this species preserved thus in the tombs, though he was not aware of its continued cultivation in Egypt. The berries of Juniperus phœnicea, L., are found in a perfect state of preservation, and present a somewhat larger average size than those obtained from this Juniper at the present day. Grains of Barley and Wheat are of frequent occurrence in the tombs; M. Mariette has found Barley in a grave at Sakhara of the fifth dynasty, 5400 years old.

The impurities found with the seeds of these cultivated plants show that the weeds which trouble the tillers of the soil at the present day in Egypt were equally the pests of their ancestors in those early ages. The Barley fields were infested with the same spiny Medick (Medicago denticulata, Willd.) which is still found in the grain crops of Egypt. The presence of the pods of Sinapis arvensis, L., among the Flax seed testifies to the presence of this weed in the Flax crops of the days of Pharaoh, as of our own time. There is not a single field of Flax in Egypt where this Charlock does not abound, and often in such quantity, that its yellow flowers, just before the Flax comes into bloom, present the appearance of a crop of Mustard. The Charlock is Sinapis arvensis, L.; var. Allionii, Jacq., and is distinguished from the ordinary form by its globose and inflated silicles, which are as characteristically present in the ancient specimens from the tombs as in the living plants. Rumex dentatus, L., the Dock of the Egyptian fields of to-day, has been found in graves of the Greek period at Dra-Ahu-Negga.

It is difficult, without the actual inspection of the specimens of plants employed as garlands, which have been prepared by Dr. Schweinfurth, to realise the wonderful condition of preservation in which they are. The colour of the petals of Papaver Rhæas, L., and the occasional presence of the dark patch at their bases, present the same peculiarities as are still found in this species growing in Egyptian fields. The petals of the Larkspur (Delphinium orientale, Gay) not only retain their reddish-violet colour, but present the peculiar markings which are still found in the living plant. A garland composed of wild Celery (Apium graveolens, L.) and small flowers of the blue Lotus (Nymphaea cœrulea, Sav.), fastened together by fibres of Papyrus, was found on a mummy of the twentieth dynasty, about three thousand years old. The leaves, flowers, and fruits of the wild Celery have been examined with the greatest care by Dr. Schweinfurth, who has demonstrated in the clearest manner their absolute identity with the indigenous form of this species now abundant in moist places in Egypt. The same may be said of the other plants used for garlands, including two species of Lichens.

It appears to have been a practice to lay out the dead bodies on a hier of fresh branches, and these were inclosed within the linen wrappings which enveloped the mummy. In this way there have been preserved branches of considerable size of Ficus Sycomorus, L., Olea europæa, L., Mimnops Schimper, H., and Tamarix nilotica, Ehrh. The Mimnops is of frequent occurrence in the mura decorations of the ancient temples; its fruit had been detected amongst the offerings to the dead, and detached leaves had been found made up into garlands, but the discovery of branches with their leaves still attached, and in one case with the fruit adhering, has established that this plant is the Abyssinian species to which Schimper's name has been given, and which is characterised by the long and slender petiole of the leaf.

In none of the species, except the Vine to which I have referred, which Dr. Schweinfurth has discovered, and of which he has made a careful study, has he been able to detect any peculiarities in the living plants which are absent in those obtained from the tombs.—(Nature.)

(To be continued.)

FREAKS OF TASTE.

It is interesting to watch the fluctuations in tastes and diversity of opinions as they go and come in connection with flowers. So changeable are we that at one time we are found admiring a plant, and soon after passing it as unworthy of note.

I have just been reading an article on the single Dahlia, in which the author says the Dahlia was accommodating in the hands of ambitious florists. It doubled and doubled until it became as full, formal, stiff, and gigantic as possible. But later on a change occurred in popular taste. Double flowers palled, and the more simple forms of them were sought out. Fashion, very sensible for once, declared in favour of the single Daisies, Asters, and Dogwood, and he might have added single Dahlias. Reforms were taken up in all directions, and so he goes on. Now the question is, Are those reforms wise or desirable to the extent suggested? Should we cast away our old familiar and favourite flowers that have been held in high esteem for many years in the past? I am sure they will be regarded for many years to come.

But my intention is not to find fault with plaudits of any flower; merely to call attention to the curious freaks that human tastes are subject to. They turn and return to the same thing. A plant at one time in the highest estimation, lost, revived again with renewed honours a few years later.

To produce a double flower in any class has always been the height of a gardener's ambition, and double flowers have been appreciated by the whole community. A double flower always took precedence. There is no doubt this is an extreme view. There are many single flowers which, for distinctness of colour and exquisite lines, will always be held in admiration. But in general, double flowers, I think, will always have the preference. Double flowers are extra efforts of Nature, and we may admire them just in the same ratio that we admire an elaborate piece of mechanical work from the hand of man. The fact is that the simplicity of the design enables many to grasp wherein the beauty lies, whereas in the double forms the work is more intricate, and requires a higher education to be able to balance and distinguish the details of the subject.

Single Dahlias, I admit, are very beautiful in their chaste lines and colours; but when we look into the double forms and note the more extensive formation with the same distinctness, their petals so regularly set, we must allow them the preference. It may be (as it is) called stiffness by some, but I fail to see it in that light. For many years past the perfect formation of a flower has been the great criterion by which judgment has been given of their merits, and I am sure will hold its own for many a day to come.

I do not wish to be thought as condemning single flowers; but I do so when it is with the intention of degrading other old favourites, such as the double Dahlia. I only wish to show where such notions will carry us, not only in this but in many things. How often do we see plants discarded for years, even lost, and yet reappear in popular appreciation, as if they had never been abandoned. Is fickleness a law of Nature? For the advancement of the profession it is perhaps well it should be so to some extent. There is an old saying and often true, that changes are lightsome, and fools are fond of them; but I would say it in another form for this subject: Changes are lightsome, and we all should be fond of them when they do not detract from the merits of old floral friends. Give us the single Dahlia, I say, or any other single flower. It need not interfere with our love for the double ones.

Freaks of fancy are all the more curious because they have generally tended to detract from their parent forms. At the present day single Roses are the applauded; but who would dare to place them on the same level or as superior to the double? No one will try this, I am sure.

There are many freaks of fancy just as curious in regard to other matters in connection with plants as this. When a new plant is first introduced with the slightest deviation from its parent it receives signal praise over its predecessor because it is slightly different, though without any mark of superiority, just because it can be called a new one, and for a time may carry one away by mere novelty. But eventually novelty palls. We appear to hold, as the Scotchman does, that all new things are bonnie (pretty). This is not always true when compared justly with the older ones. The aspiration to acquire new things is perhaps one of the best traits anyone can have. I love it because the effort gives you personal insight into the merits of the novelty, and enables you to judge for yourself, and satisfies a craving to see that which we have heard of. I have no blame to attach to parties recommending novelties. In many instances they may see beauty in their productions which we cannot. It is thus in every line we follow, and so we must put up with it, I suppose, to the end.—N. ROBERTSON (in American Gardeners' Monthly).



HARDY FRUIT GARDEN.

PREPARATIONS FOR PLANTING.—A deep fertile loam containing enough small stones to insure porosity and well drained is the best soil for fruit trees. If the soil in which planting is to be done does not answer to such a description, then we must do what we can to alter its

condition. In doing this for fruit trees we make stations from 10 to 30 feet apart, the lesser distance being for such trees as closely pruned pyramids, the greater for unpruned standards. The best size for a station is 6 feet square, the soil being thrown out, the subsoil dug out to a depth of 2 feet 6 inches and carted away. If the subsoil is of clay, or similar substance likely to prevent superfluous water from passing freely away from the roots of the tree, a row of 2-inch common land drain pipes which have no sockets is first of all laid across the middle of the bottom of the station. The bottom is then covered with 6 inches of broken stones or bricks, care being taken not to disarrange the drain pipes, which we may state here are to be connected with the nearest drain by a convenient branch drain. In such a subsoil there should be a perfect system of drainage by drains 30 feet apart and 4 feet deep, if the substratum admits of the work being well done at such a depth. The use of broken rubble at the bottom of the station is mentioned as a method we have found to answer fairly well. If, however, the bottom can be covered with concrete it is altogether preferable, as the risk of roots growing downwards into the subsoil is avoided. Excellent concrete is made of one part of lime fresh from the kiln and six parts of fine rubble. This is spread over the bottom of the station to a thickness of 6 inches as it is mixed, the drain pipes being laid upon and pressed slightly into the concrete before it becomes hard. Upon the concrete we have 2 feet of fertile soil, in which the tree is planted with a feeling of certainty that it has an ample store of food for the next four or five years. We have had to resort to many makeshifts to get soil for our stations, the best general guide being the fact that fruit trees will grow well in soil which answers for the cultivation of vegetables. To insure porosity or mechanical division coal ashes can be had by everyone to mix with the soil, and if the soil is so poor as to require manure care must be taken to use old decayed manure, and to mix it thoroughly with the soil and ashes. At the time of planting the station soil should be fully 6 inches about the common surface to allow for the settlement which gradually follows the planting.

For bush fruit the soil should be drained, trenched, keeping the subsoil below and bringing none of it to the surface, and mixing a heavy dressing of rich farmyard or stable manure and coal ashes with it. Mix enough manure with the soil to ensure an abundant supply of nutriment for the roots as they spread in the soil, and enough ashes to render it impossible for the soil ever to subside into an inert mass, in which the roots would perish. Only do this well, and you may plant Gooseberries, Currants, Raspberries, and Blackberries in it, with a feeling of certainty that your efforts will speedily be crowned with success. It is doubtless owing to poverty of the soil that we hear of so many failures with American Blackberries. Our first row of them was planted upon a trench filled with a fertile mass of garden refuse, turf parings, road sidings, weeds, stable manure, coal ashes, and lime, turned over and well mixed before it was put in the trench. The result was absolutely wonderful, many bushels of fruit being gathered from a row some 60 feet in length the third summer after the planting.

FRUIT FORCING.

PINES.—*Growing Stock.*—Young plants will need free ventilation on all favourable occasions to maintain them in a healthy sturdy condition, keeping the bottom heat about the roots at 80°, and maintaining a temperature from fire heat of 60° to 65° at night, with 5° to 10° rise by day. Newly potted plants should have a bottom heat of 90° to 95°, with a view to the roots speedily penetrating the fresh soil. Water the plants whenever they require it, employing weak and tepid liquid manure, and avoid the use of the syringe too frequently; merely sprinkling the paths, &c., morning and evening will suffice in all but very bright weather.

Suckers.—Recently started suckers should as soon as roots are plentifully made be raised near the glass, it being essential that those intended to be wintered in small pots be brought on very gradually, but they must not be withdrawn from the bottom heat, or only for a short time, so as not to give the plants a check. When the suckers started this autumn are well rooted pot them, draining the pots well. Employ the fibry part only of turfy loam, and do not tear it up too fine, but use it in lumps proportionate to the size of the pots. The strongest plants may be transferred to the fruiting pots at once, the size of the pots proportioned to the robustness of the kinds. Jamaicas do well in 9 or 10-inch pots, Queens in 10 to 11-inch pots, Smooth-leaved Cayenne and similar varieties in 11 to 12 inches, and Providence in 13-inch pots, which will afford fruit of the largest size. Where smaller plants and fruit are desired pots an inch or two less in diameter will answer. The plants not large enough for transferring to the fruiting size should be shifted into 8-inch pots, in which they must be kept until spring. Plunge the plants in a bottom heat of 90° to 95°, in which they must be continued until the roots have taken freely to the fresh compost, when they may be raised, a temperature of about 80° being afterwards sufficient. Fruiting plants should have a night temperature of 70°, 80° to 90° during the day, closing at 85°.

STRAWBERRIES IN POTS.—Watering the plants must not be neglected; but though plants in well-drained soil in the open ground do not suffer from continued rains, yet those in pots are seriously injured by continued needless waterings, therefore only supply water as necessary, not allowing the plants to flag, but allow the soil to become dry before any is given, then afford a thorough supply. This more particularly applies to the varieties intended for early forcing, which should soon be given the protection of frames, only using the lights in frosty weather and to throw off heavy rains and snow, ventilating freely when the weather is mild. Any plants that have the soil very wet, and remain so for a time without watering, should have the drainage seen to, as worms, or the material on

which they are placed, choke the drainage or outlet, rendering the soil sodden, in which no plant will thrive. Expel worms from the pots with lime water, and rectify the drainage where defective. The crowns are often numerous in some varieties, especially Vicomtesse Hericart de Thury, a number of small crowns clustering round the central one. The small crowns should be removed sideways with a wedge-like piece of hard wood without injuring the leaves or central crown. This will concentrate all the vigour of the plant into the chief crown, and though there will be fewer trusses of bloom, there is no need to fear a deficiency of crop. There is nothing like a loose surface for Strawberries in pots, which prevents the soil leaving the sides of the pots, and admits of the water passing equally through the "ball" and moistening it thoroughly. A little dried horse droppings or cow manure rubbed through the hands applied to the surface of the pots will keep all right there. Remove all runners as they appear, also weeds, and do not allow the plants to suffer through insufficient supplies of water. The plants must have plenty of space for the full exposure of the foliage to light and air, which is essential to a sturdy growth and plump well-developed crowns.

Autumn Fruiters.—Encourage these with a little weak manure, and in the case of heavy rains when the fruits are ripening, the plants should be placed in frames with abundant ventilation, which will improve the quality of the fruit. Late plants of La Grosse Sucrée and Sir Harry are showing and swelling admirably, both being considerably in advance of Vicomtesse Hericart de Thury, which, though a free bearer, is small, yet when well thinned the fruit is improved in size and quality. Any of the autumn fruiters not required for some time yet may be retarded by placing them on a north border. Good fruit may be had by taking up some of the most promising of the planted-out forced Strawberries and placing them in rich compost in pots. Arrange them in a frame kept close until they are rooted, then ventilated freely, and afterwards place them on shelves near the glass in a house with a minimum temperature of 50° and a freer circulation of air.

CUCUMBERS.—The plants for winter fruiting should be planted so soon as they are ready. A good bottom heat is essential to success, whether it be obtained by the aid of fermenting materials or hot-water pipes; but a somewhat higher temperature is needed to commence with if fermenting materials are used, as the heat will decline, and there should be hot water in the bed to keep up the bottom heat when that of the fermenting material declines. The soil must consist of light turfy loam with a third of fibrous peat, a sixth of old mortar rubbish, and a tenth of charcoal, the whole well incorporated. For imparting vigour later rely on liquid manure and surface dressings in preference to employing manure in the compost.

Autumn Fruiters.—Maintain a healthy and vigorous growth, being careful not to overcrop the plants. Secure a mean temperature of 75° or 65° at night, 70° to 75° by day artificially, and 80° to 90° from sun heat. Avoid a close moist atmosphere by ventilating, and avoid cold drying currents. Be sparing in the use of water, especially over the foliage, keeping a genial condition of the atmosphere by damping available surfaces in the morning and afternoon, but gradually reducing the moisture as the days shorten and the sun heat declines. Add a little fresh soil about once a fortnight to the hillocks or ridges previously warmed, applying weak tepid liquid manure once or twice a week as may be necessary, fumigating moderately on two or three consecutive evenings in case of an attack of aphides.

PLANT HOUSES.

Zonal Pelargoniums.—To have a good quantity of these in full bloom early in November the plants should be housed without delay. Yellow leaves and flowers that are showing should be removed and the plants placed for a time in a light airy structure. If possible top-dress with a little rich soil, but if the pots are full of soil and will not allow of this being done, a sprinkling of Standen's or some other artificial manure will prove beneficial. The remainder of the stock that it may be necessary to retard as long as possible should be in some convenient position where they can be covered with mats or tiffany in case of frost. Young stock in 3-inch pots for spring flowering may have the points of their shoots pinched so that they will commence growth again before winter. Place these on a shelf close to the glass in a cool airy structure. The same remarks apply to double varieties that have been outside since they were rooted, and are intended for supplying cut blooms during the spring months. These plants should be in such a state at their roots that they will stand without potting until early in January. If they are likely to become root-bound before that time a small shift should be given at once. Pot them firmly in loam, sand, and one-seventh of manure.

Ivy-leaved Varieties.—These are very useful for affording winter flowers, and the plants provided for this purpose should be placed under cover with Zonal varieties. Young stock for spring flowering should have their shoots well pinched back, and be placed on a shelf for the winter in a cool airy place where growth will only be slow. These plants draw up weakly if allowed to make growth during the dark days of winter.

French and Fancy Varieties.—Frames are too damp for these, and they must be removed without delay to a light airy house where the temperature during the winter can be kept from falling below 45°. The earliest plants should have their shoots pinched for the last time, and be given a small shift if they need it, so that they will be in good condition for placing in their largest pots early in January. Press the soil firmly into the pots to prevent a soft growth. Later stock that has been rooted singly in small pots may be placed at once into 3-inch. The shoots of these must be pinched from time to time as occasion re-

quires. Later plants that have been cut back and have started into growth should have the soil shaken from their roots and be repotted in fresh. These should be placed in the smallest size pots consistent with the size of the plants. From this time onward these plants must be watered with great care, or the foliage will become spotted.

Heliotropes.—The first indication of autumn—a temperature down to the freezing point—has compelled us to put these tender plants under cover earlier than we anticipated. The slightest frost will ruin the plants, therefore they should be placed in a light house where the temperature will not fall below 50°. If mild weather ensues abundance of air may be given during the day, especially if necessary to retard the flowering of the plants for a few weeks longer. Young stock that have been recently rooted should be placed in 3-inch pots. The shoots should be pinched when three or four leaves have been made.

Bouvardias.—These must also be placed under cover, and may, if they have been grown in pots, be placed in the same structure as the *Heliotropes*. The treatment that suits one will suit both very well. Those that have been planted out may be lifted at once and placed in pots. After potting place them on the shady side of a wall and give them a good soaking of water. The syringe should also be freely employed until the plants commence rooting.

THE BEE-KEEPER.

HOME MARKETS FOR OUR HONEY.

THE Company scheme having failed to perform what it is only charitable to suppose its originators desired, it has become necessary to see if no other means may be taken to achieve the success which has not hitherto followed the efforts made in this direction. An abortive attempt was made to start a Bee-keepers' Union for this purpose, but after the first few weeks the idea went out, and has not since been brought forward, so far as I have seen. On the whole it is, perhaps, just as well, because but little can really be achieved by what is, after all, a Friendly Society on a somewhat larger basis than usual. The whole question seems to be reopened in its entirety, and to invite those who have any ideas upon this most important subject to lend their aid in solving the question of the day so far as bee-keepers are concerned, and thus by facilitating the ready sale of honey at a remunerative price reinstate the industry in the position from which it is at present in some little danger of falling. The large towns afford a ready market for a considerable quantity, and those who are fortunate enough to live within a reasonable distance of a city or large town ought not to have any difficulty in disposing of their honey at a fair price. But very much less is sold over the counter in these places than might, with a little exertion on the part of the producer, be easily disposed of, and in thus extending the market there need be no extra expense and but little risk. Many grocers who do not at present deal in honey would willingly do so if they could be insured against loss, and if it can once be proved to them that a large demand for honey can be created by careful management, the future sales will be very easily effected. Now, in thus creating a market, it is necessary to be careful to send both honey in the comb and extracted of the best quality only, and securely bottled or cased. No one can tell the mischief occasioned by leaking sections. To one shop in which a portion of my own produce used to be sold, a bee-keeper forwarded some faulty sections which, continually leaking, caused so much loss and annoyance that it was only after great trouble and persuasion that the man could be induced to continue the sale in the following year.

Sections must be perfect, and all honey of fine quality, and if any dealer is unwilling to purchase a certain quantity, the offer of a commission on all sales effected—the honey to be at the producer's risk, and subject to return if no sale can be effected—will be a sufficient inducement to secure shop-room for any reasonable quantity. In the country districts it is somewhat more difficult to create a local demand, but in some measure success will follow continued effort. Here again, in many cases, it is convenient to give a local tradesman a commission on the sales effected, but many other details must be attended to if any great quantity has to be sold.

It must always be remembered that the difficulty is greatest at the beginning. When once good honey has been supplied to a customer the quantity sold will continually increase. Again, the gift of a pound goes a long way to popularise honey, and in many instances such a gift has been the precursor of good sales in the future. The distribution of leaflets advocating the use of honey is in favour in America, but a persistent pushing attempt to overcome the difficulty will be all that is required. The greatest obstacle to overcome is the prejudice of tradesmen in favour of foreign honey, which they will sell and dispose of in preference to our own produce.

The reason for this is simply that they are able to buy more cheaply, and to sell at a greater profit, this imported honey than the home-grown article. In fact, it is our task to beat the foreign honey out of the market, and when we remember that English produce always brings a slightly better price than foreign, it ought not to be so desperate a battle. But once the retail tradesmen are on our side the victory is won, and to effect this victory it is only necessary to show that as great, if not a greater, profit ensues from buying and selling English as from foreign honey. Can we do this without lowering the price beyond the cost of production? Individually I believe we can, and the three essentials necessary to be observed for maintaining the price of honey at the level which will pay the producer, while beating the foreigner out of the market, are these:

1. A consistent good quality.
2. Careful package, neat and cleanly.
3. A regular supply.

Again, the agricultural labourer who keeps a cow or a few hens sends their produce to the local market, and does not wait to see if by chance a purchaser may come and buy, and the same course must be pursued in regard to honey. It is utterly useless to expect that any organisation, however complete, will bring the purchaser to the producer without some trouble on the producer's part. Indeed, he is a poor man in reality who, after taking honey of good quality from his stocks, is unable to find a market. As a last resource, when every other effort has been made, the Honey Companies may be patronised, but after the deductions from the profit necessary to pay carriage, the risk occasioned in transit, and the low price obtainable, I pity anyone who is reduced to this extremity.

The above are only hints which have already been useful when adopted, and if those bee-keepers who make a trial are enabled to dispose of their honey more easily than heretofore, some good will have been done, and a step taken in the right direction. The honey must seek the purchaser, the purchaser will rarely seek the honey.—FELIX.

STERILITY OF DRONES AND QUEENS.

It is often asserted that three weeks after hatching determines the sterility or fertility of the mother of the hive—i.e., if fertilised before three weeks old she will produce worker bees as well as drones when inclined, or perhaps whether inclined or not, as queens very often produce drones only at first and worker bees afterwards. If not fertilised it is said that at the expiration of three weeks she will commence laying male eggs only. Others, again, affirm that a queen bee will mate with a drone after she is three weeks old, but if mated then or in September she will be a confirmed drone-breeder. None of these assertions is correct. I have had queens mated when eleven weeks old that turned out not only prolific in producing worker bees, but were long-lived. I have had queens that were missed at first, but were subsequently fertilised. I have also had queens begin laying and then fly out and mate. Mr. Woodbury recorded a case of this kind, but I believe such cases are rare. Sometimes a queen will begin laying shortly after the end of three weeks and continue a drone breeder; but it is quite possible such queens are imperfect, because I have had queens begin laying a few hours after their birth which never sought to mate. I always set such queens down as being defective in some respect.

There is no doubt, however, that queens after a time refuse to fly, and then become confirmed drone breeders. But what length of time transpires with perfect queens before they abandon mating? is a question of importance; it is evidently earlier in some queens than in others. Queens that are longest in becoming fertilised are the best constituted to breed from—at least, I think so, and I have found queens bred from such have always proved extra good. The truth is, had three weeks been the

limit for queens to mate I would years ago not have had a single bee, and this year is no exception. My latest queens were hatched on the 22nd of August, and it is now the 20th of September, and every one of them seems as anxious to fly and mate as they were a few days after hatching, but not one of them has yet mated. The weather has been very unfavourable, but Saturday, the 4th September, was a charming day, and now I observe the queens are making numerous flights, but commonly early in the day, between the hours of 10.30 and 12 noon, when few drones are abroad; but their flights were not always at so early and so unfavourable a time.

Of drones there are plenty in the hives. One contains a fertilised queen and the other an unfertilised one. The drones of the former, strange to say, fly an hour or two earlier in the day than those in the latter. Both hives have been well fed to keep the drones vigorous, and when that is done they are left unmolested until the young bees begin to hatch. This is usually the signal for drone slaughtering, unless in cases of imminent want, when the drones are sometimes hunted out before the queen is mated. The queen of this hive was not fertilised until she was between five and six weeks old. The singular thing is, Why are the drones of a hive having a fertilised queen more vigorous and fly more abroad than do those having an unfertilised one, and even better fed? I have always looked upon it as the reverse, and we have often observed it so; but there is a question of greater importance which I have never seen mentioned. We all know that there is a limit to a queen mating, and it is her nature to change and preclude the possibility of that; but we have never heard it mentioned that the drone may also become sterile after a certain age. I cannot say that is the case, but facts point to that being so. A few years since similar late queens missed the drone, although the weather was beautiful. Most of them had commenced laying, but all the cappings of the cells were prominent, indicating clearly the sex beneath. In vain did I wait, expecting some of them would produce workers. One after the other I reluctantly killed and dissected, but not until I came to the last one or two that had not laid any eggs did I find evidence of impregnation. In the two last it was so imperfect that to have allowed such queens to have lived would have been but disappointment, and not until death had taken place could it be known whether a queen is fertilised or not. Sometimes we have a knowledge of the state of a queen from her appearance, but not always.

I remember the late Mr. T. W. Woodbury raised the question as to the temperature necessary for impregnation, which I think was 55°, and we have had queens fertilised with a temperature no higher, but then Mr. Woodbury, like ourselves, had only the two varieties, Ligurian and black bees. Now, the habits of the Syrian and other bees differ greatly from the first-named ones. Thus we have not one variety only to study, but at the present five or six, which mystifies us in our researches. In short, while I have had queens of the Italian and black breed fertilised at a temperature of 55°, I find that temperature to be the lowest at which a Syrian queen will look out, take a short flight, and then return; and, although the drones begin to fly out at a temperature of 60°, it must be 70° before they take a proper flight and remain out on wing for from twenty minutes to thirty-five minutes, as is the case with queens, so that after all it may be the temperature that controls fertilisation, and not that of the age of the drone. Nevertheless, it is an important question, and one that bee-keepers would do well to turn their attention to, as upon it depends having an improved and a superior race of bees; and from what I have experienced the Cyprian and the Syrian races are the best to attain the point aimed at. Spiteful and vicious they are at times, but they have this quality, and, unlike the common blacks, they do not attack without provocation, while their crosses have proved superior to anything I have ever witnessed. Moreover, they are the most interesting bees to see at work. Long before another bee is to be seen in the morning the Syrians are at work, and the pellets of pollen are so large in proportion to their bodies, at once stamping them as assiduous workers and at all times attractive, and are capital foretellers of the weather.—A LANARKSHIRE BEE-KEEPER.



All correspondence should be directed either to "THE EDITOR" or to "THE PUBLISHER." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

NAMING FRUITS.—In consequence of the absence of our fruit referee from London fruits cannot be named by him during the month of October.

Black Grape (J. P.).—It is not easy to determine the name of a Grape from a few loose berries, but the foliage you have sent leads us to think your variety is Gros Guillaume.

Pears Cracking (Nemo).—Your soil is evidently sandy and poor, and the trees have not sufficient nourishment or moisture. Mulch them well with well-rotted stable manure in summer, and water them with sewage in the winter.

Plants in Open Border (Stonebridge).—The *H. lenium* and *Centaurea* are quite hardy, and the *Gaillardias* also usually succeed on light warm soils, but in damp or cold heavy soils they are sometimes lost in winter. They can be readily increased from seed sown in heat early in spring, or by cuttings inserted now. Strong plants can also be divided and placed in frames, as very little protection is needed to insure their safety.

Pears for West Aspect (A West Surrey Amateur).—Your selection of Pears—viz, *Beurré d'Amanlis*, *Maréchal de Cour*, *Marie Louise d'Uccle*, *Du-rondeau*, and *Doyenné du Comice*, is excellent, and all succeed admirably on the Quince stock.

Heating a Greenhouse (S. A.).—In order to maintain a temperature of 50° through the winter in the severest weather, you will need two rows of 4 inch pipes along one side and one end; or it would be better to have the pipes along two sides and one end, taking a single 4 inch pipe all around, excepting, of course, the doorway, where the pipe may be taken to the boiler, being in fact the return pipe. This is much the best arrangement for a span-roofed house. One of the small boilers advertised in the *Journal of Horticulture* would answer, especially the one you name, which we have had opportunities of seeing at work.

Insects on Cabbages (Kilhogget).—If your young plants are attacked with the Turnip beetle dust them when wet with dew with fine dry wood ashes; if infested with aphides apply tobacco powder. The larger plants to which you refer may be drenched with perfectly clear lime water.

Pears Cracking (K. J.).—The cracking is due to a peculiarity of soil, climate, and variety. Pears are affected differently in different soils, and the only way to success is to note those that succeed and plant accordingly. We do not know a cure for cracking.

Thinning the Spurs of Espalier Apple Trees (F. J.).—It may be done as advantageously now as at a later period; indeed, the less the trees are pruned in the winter the better, but it would have been better had the spurs been thinned earlier, so as to have given those that remain the benefit of air and light. It is, however, better late than never, and we should do it at once, and if root-pruning is necessary, the trees growing too luxuriantly, we should attend to it not later than the early part of November.

Morello Cherry Fruit not Stoning (Idem).—The fruit falls because it has not stoned, and is generally a consequence of a deficiency of calcareous matter in the soil. Apply a dressing of quicklime at the rate of a bushel per rod, and point it in as deeply as you can without interfering with the roots. A better plan would be to remove the surface soil down to the roots, clearing the soil from amongst the roots, lifting them if deep, and relaying or replacing the soil after a sixth of old mortar rubbish from an old building, broken fine, has been added, and all pieces of wood removed. Make the soil firm about the roots. This may be done as soon as the leaves give indications of falling.

Dissolving Bones (H. H.).—The cement floor will answer for placing the bones upon, surrounded with a run of ashes from a burnt rubbish heap, following the instructions given to "W. A." in the number for April 1st of this year. We presume the cement floor has a smooth surface and is impervious to water. If a broken or very open surfaced floor it would not answer, and in that case a floor of well burned or hard bricks or tiles would be most suitable.

Insect on Grapes (S. J.).—Your specimen received some damage in packing apparently. We take it to be the larva or caterpillar of a small moth (*Carpocapsa nigricana*); the object which you probably imagined to be the egg is the pupa of a small parasitic fly, which has attacked these by depositing eggs on their bodies, and thus helped to reduce their numbers. When it is full grown this caterpillar quits its food and retires to some corner to spin its cocoon, the moth emerging about May. It is not, however, one of those species placed on the list of Grape foes, as it generally occurs on the Plum or other stone fruit, but occasionally the Grape is found to be infested, though why, in such a plentiful Plum year, an instance should occur, is difficult of explanation. We are not aware that any preventive measures are possible, beyond destroying the larvæ and watching for and securing the moths as they emerge.

Destructive Insects on Willow (T. L.).—The mischief complained of is seldom as serious as in the instance you mention, but the insect sent generally occurs every season in Willow plantations of any size. It is a beetle named *Chrysomela Populi*, and beside the Willow, it infests also Poplars, Aspens, and kindred species, though it is not likely to hurt any species of a different tribe. There really seems to be no other way of dealing with it than capturing and killing all that can be caught, thus diminishing the next year's brood. Expedients to drive them away from the trees or saplings have not proved successful, and in the larval stage they cannot very well be got at. It is a curious fact that the beetles had formerly a reputation for curing toothache and other nerve pains. They do secrete a dark liquid, which possibly contains a hither principle extracted by them from their food.

Pithy Celery (Joseph Rainford).—We think Celery is more liable to be pithy in some seasons than others, at least we have found the same variety crisp and sound one year and soft the next in the same kind of soil. Very rank manure is liable to cause pithiness, and much liquid manure. Our correspondent, "A Kitchen Gardener" recently observed:—"Our kitchen garden extends to five acres, and during the last dozen years we have tried the Celery crop in various parts of it. In the heaviest soil very large plants were produced, but three parts of them were not sound when fully grown. They appeared all right, but when the stems were pressed hard they gave way and proved pithy or vacant in the centre. Much Celery does this, and it is most objectionable. Such produce may do for seasoning in the kitchen, but it will never do for introducing with cheese or anything in this way, and those who have grown pithy Celery ought to change their practice at once. We had to do so from the heavy ground, and we found it succeed

hest in light soil. For more than six years we have grown the whole of our Celery in the lightest part of the garden, and pithy plants are never met with. Every one of them are sound and robust, and we are very much gratified with this. The advantage of having it in rather a light soil is not confined to how it grows, but in earthing up the light material suits admirably." We do not know of a larger white Celery than Wright's White Grove.

Double Whin, Gorse, or Furze Cuttings (H. H.).—August or early September is perhaps the best time to insert cuttings of this very beautiful plant in sandy soil, surfaced with about an inch of sand on a shady border, or preferably under a handlight. We have also seen them inserted in autumn and spring, and successfully, but the most success attended the insertion of the cuttings at the time indicated. The cuttings are best with a heel, but strong cuttings cut transversely below a joint will also strike. The current year's growth should be chosen, or, if in spring, the previous year's growth, removing all the side leaves, inserting about two-thirds their length in the soil, making it firm, giving a good watering to settle the soil about them. If under a handlight allow the water to soak well in before placing the light over them. They must be shaded from sun, a north border being the most suitable place, and they will be ready to be transplanted the autumn following.

Keeping Black Hamburgh Grapes (Omega).—The Grapes will keep much best on the Vines until the foliage falls or begins to fall, when they should be cut, bottled, and kept in a room with as equable a temperature as possible, between 40° and 45°, ventilating freely above the latter temperature. Damp should be carefully guarded against. Rain water should be used with a few pieces of charcoal in each bottle to keep the water sweet. The Grapes being ripe the chief thing is to guard against damp. That is best done by free ventilation in the daytime, and a gentle warmth in the pipes, the heat being turned on in the morning or the fire lighted, and it should be turned off about noon so as to allow the pipes to become cool before night. No fire heat will be required at night, or only to prevent the temperature falling below 40°. On fine nights a little ventilation may be left on, but in damp foggy weather the house should be closed, with a slight warmth in the pipes. In fine weather ventilate early so as to prevent the deposition of moisture on the Grapes. The Grapes should be examined frequently, removing decayed berries as they appear.

Grub-eaten Apples (Idem).—The fruit is probably perforated by the Coidin moth (*Carpocapsa pomona*) of the second generation. The first being from eggs deposited in May and hatching the small whitish grub, eats its way into the Apple, the eggs being deposited at the eye or stalk of the fruit, and after feeding for three weeks or a month on the fruit quits it, falls to the ground, spins itself a cocoon on the stem and changes into a chrysalis, from which the moth appears in a few days and gives rise to a second brood of grubs. In the first case the Apples usually fall, and the remedy is to destroy the fallen Apples, for the second brood keeping the stems free of loose bark. Or the fruit may be attacked by the Apple weevil (*Rhynchites Bacchus*) depositing its eggs in the interior of the fruit at the end of June, a small whitish grub being hatched. The grub feeds on the flesh of the fruit for about a month, quits it and buries itself in the earth, where it remains during the winter. The remedy is to shake the trees early in the morning in late June and early July, having some sheets spread on the ground beneath the trees, and the beetles will fall and can be destroyed. The fallen fruit should also be collected. Very likely the grub has not escaped from the fallen fruit and it can be destroyed. Those are the best means we know of limiting the attacks of these insects.

Aleyrodes vaporariorum (Trike).—We have little to add to what Mr. Iggliden said in a short communication two years ago—namely, "There is no doubt about fumigating the house with tobacco being the only safe and effective remedy in the case of Tomatoes being affected by this tiny fly, but in the case of other plants infested by its sponging the under side of the leaves should also be resorted to. Fumigating for two or three nights consecutively will destroy all the insects, but will not injure the eggs deposited on the under side of the leaves, and consequently several fumigations, say at weekly intervals, are necessary before the plants can be really said to be clean. So difficult are they to eradicate that I have known gardeners discontinue the house culture of Tomatoes owing to their prevalence, and others wish they had never commenced Tomato culture." If you wet the floor of the house and shake the plants during fumigation you will more effectually accomplish your purpose than if the insects are not disturbed. The plants should be dry, but the floor or stage on which the insects fall quite wet. They do not affect the majority of greenhouse plants.

Insect Enemy of the Cotton Plant (J. T.).—The following particulars have been kindly furnished by R. McLachlan, Esq., F.R.S. "The insect you send has long been known as destructive to cotton in Egypt. It is a moth of the family *Nyctegidae*, a small family, the systematic position of which is somewhat a disputed point. Its oldest name appears to be, *Earias insulana*, Boisduval (1833), and it was first described from Madagascar. It occurs also in Spain, Syria, Candia, &c., &c., and it has received many names, such as *Smaragdiana*, Zeller (1832); *Silviana*, *Henrich-Schäffer* (1853); *frondosana*, Walker (1863); *chlorion*, Rambur (1866); and *gossypii*, *Frauenfeld* (1867). The larva feeds in the 'bolls' of the cotton, and hand-picking of the infested 'bolls' is recommended as a remedy. We are not sure whether there is any special account of it published in English. A paper by Von Frauenfeld in the 'Verhandlungen der Zoolog-botanischen Gesellschaft in Wien,' 1868, pp. 417-424, gives a good deal of information. It can be seen at Linnean Soc.

Names of Fruits.—The names and addresses of senders of fruit to be named must in all cases be enclosed with the specimens, whether letters referring to the fruit are sent by post or not. The names are not necessarily required for publication, initials sufficing for that. Only six specimens can be named at once, and surplus fruits beyond that number cannot be preserved. (*W. H. Ashwin*).—1, Cooper's Large; 2, Not known, probably a local variety. (*E. M.*).—1, Red Magnum Bonum; 2, Reine Claude de Bayay; 3, Blue Imperatrice; 4, Orleans; 5 and 6 got mixed; the small one is a Damson, the other we do not know. (*T. N.*).—1, Bedfordshire Foundling; 2, Cellini; 3, Bergamotte Cadette; 4, Maréchal de Cour; 5, Marie Louise; 6, Lewis. (*Poires*).—1, Beurré Capiaumont; 2, Beurré Rance; 3, Beurré Langelier; 4, Beurré Rance; 5, Not known; 6, Hampden's Bergamot. (*A Constant Reader*).—1, Brown Beurré; 2, Comte de Lamy; 3, Not

known; 4, Noyveau Poiteau; 5, Doyenné Boussoch; 6, Chaumontel. (*C. T. Hall*).—Orleans. (*J. M.*).—Sack and Sugar, very good. The Red Astrachan is also good, and well coloured. (*H. Hewat Crane*).—Red Astrachan. (*G. A. M.*).—1, Not known; 2, London Pippin; 3, Bess Pool. (*Hortus*).—Apple Emperor Alexander; 1, Knight's Monarch; 2, Chaumontel; 3, Doyenné du Comice; 4, Noyveau Poiteau. (*J. A.*).—1, Maréchal de Cour; 2, Not known; 3, Durondeau; 4, Vicar of Winkfield; 5, Pitmaston Duchess; Apple not known.

Names of Plants.—We only undertake to name species of plants, not varieties that have originated from seed and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in firm boxes. Slightly damp moss or soft green leaves form the best packing, dry cotton wool the worst. Not more than six specimens can be named at once. (*A. R.*).—1, *Cratægus ovalifolia*; 2, *Platanus orientalis*; 3, *Sedum spectabile*; 4, *Santolina chamaecyparissus*; 5, *Plumbago capensis*; 6, *Habrothamnus elegans*. (*A Constant Reader*).—1, *Ampelopsis Veitchii*; 2, *Antennaria margaritacea*; 3, *Tradescantia virginica*; 4, *Eryngium amethystinum*; 5, *Monarda purpurea*; 6, *Lobelia syphilitica*.

COVENT GARDEN MARKET.—SEPTEMBER 29TH.

OUR market is still heavily supplied with all classes of goods, and sales are only effected in favour of buyers.

FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples	1 6 to 4 0		Melon	1 0 to 2 0	
Cherries	0 0 0 0		Oranges	100 6 0	12 0
Currents, Black ..	0 0 0 0		Peaches	per doz. 2 0	4 0
„ Red	0 0 0 0		Pine Apples English ..	lb. 2 0	2 6
Figs	0 6 0 9		Plums	1 0 2 0	
Grapes	0 6 3 0		St. Michael Pines ..	each 4 0	6 0
Lemons	10 0 15 0		Strawberries	per lb. 0 0	0 0

VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Artichokes	1 0 to 0 0		Lettuce	dozen 1 0 to 1 6	
Asparagus	0 0 0 0		Mushrooms	punnet 0 6	1 0
Beans, Kidney ..	per bushel 2 0	3 0	Mustard and Cress ..	punnet 0 2	0 0
Beet, Red	dozen 1 0	2 0	Onions	bunch 0 3	0 0
Broccoli	dozen 0 0	0 0	Parsley	dozen bunches 2 0	3 0
Brussels Sprouts ..	1 0 0 0		Parasips	dozen 1 0	2 0
Cabbage	dozen 1 6	0 0	Potatoes	cwt. 4 0	5 0
Capicums	100 1 6	2 0	„ Kidney	cwt. 4 6	5 0
Carrots	bunch 0 4	0 0	Rhubarb	bundle 0 2	0 6
Cauliflowers	dozen 3 0	4 0	Salsafy	bundle 1 0	1 0
Celery	dozen 1 6	2 0	Scorzoneria	bundle 1 6	0 0
Coleworts	doz. bunches 2 0	4 0	Soakale	per basket 0 0	0 0
Cucumbers	each 0 3	0 4	Sballots	lb. 0 3	0 6
Endive	dozen 1 0	2 0	Spinach	bushel 3 0	4 4
Eros	bunch 0 2	0 0	Tomatoes	lb. 0 2	0 6
Leeks	bunch 0 3	0 4	Turnips	bunch 0 4	0 0

PLANTS IN POTS.

	s. d.	s. d.		s. d.	s. d.
Aralia Sieboldi ..	dozen 9 0 to 18 0		Ficus elastica ..	each 1 6 to 7 0	
Arbor vitæ (golden)	dozen 0 0 0 0		Fuchsia	per dozen 2 6	6 0
„ (common) ..	dozen 6 0 12 0		Foliage Plants, var.	each 2 0	10 0
Asters	per dozen 3 0	6 0	Heliotrope	per dozen 4 0	8 0
Bedding Plants, var.	doz. 0 0 0 0		Hydrangea	per dozen 6 0	12 0
Begonias	dozen 4 0 9 0		Ivy Geraniums ..	per dozen 0 0	0 0
Calceolaria	per dozen 3 0	6 0	Lilium ancratum ..	per doz. 12 0	30 0
Chrysanthemum ..	dozen 6 0 12 0		„ lancifolium ..	per doz. 0 0	0 0
Cineraria	dozen 0 0 0 0		„ longiflorum ..	per doz. 0 0	0 0
Cockscombs	per dozen 3 0	4 0	Lobelia	per dozen 0 0	0 0
Cyperus	dozen 4 0 12 0		Marguerite Daisy ..	dozen 6 0	9 0
Dracæna terminalis,	dozen 30 0 60 0		Mignonette	per dozen 3 0	6 0
„ viridis	dozen 12 0 24 0		Musk	per dozen 0 0	0 0
Erica, various ..	dozen 9 0 12 0		Myrtles	dozen 6 0	12 0
Euonymus, in var.	dozen 6 0 18 0		Palms, in var. ..	each 2 6	21 0
Evergreens, in var.	dozen 6 0 24 0		Pelargoniums, scarlet,	doz. 3 0	6 0
Ferns, in variety ..	dozen 4 0 18 0		Pelargoniums ..	per dozen 6 0	9 0

CUT FLOWERS.

	s. d.	s. d.		s. d.	s. d.
Abutilons	12 bunches 2 0 to 4 0		Lily of the Valley, 12	sprays 0 0 to 0 0	
Ageratum	12 bunches 2 0 3 0		Marguerites	12 bunches 2 0	6 0
Arum Lilies	12 blooms 4 0 6 0		Mignonette	12 bunches 1 0	3 0
Asters	12 bunches 0 3 0 6		Myosotis	12 bunches 1 6	3 0
Bouvardias	per bunch 0 6 1 0		Pelargoniums, per 12	trusses 0 3	1 0
Camellias	12 blooms 4 0 8 0		„ scarlet, 12 trusses	0 3	0 6
Carnations	12 blooms 1 0 3 0		Roses	12 bunches 2 0	9 0
„	12 bunches 3 0 6 0		„ (indoor), per dozen	0 6	2 0
Chrysanthemums 12	bees. 3 0 6 0		„ Tea	dozen 0 9	1 0
„	12 blooms 1 0 3 0		„ red	dozen 0 8	1 0
Coreopsis	12 bunches 0 0 0 0		„ Moss	12 bunches 0 0	0 0
Cornflower	12 bunches 0 6 0 0		Pyrethrum	12 bunches 3 0	6 0
Dahlia	12 bunches 2 0 4 0		Spiræa	12 sprays 0 0	0 0
Epiphyllum	doz. blooms 6 0 0 0		Stephanotis	12 sprays 2 0	4 0
Eucharis	per dozen 2 0 4 0		Stocks, various 12	bunches 3 0	5 0
Gardenias	12 blooms 2 0 4 0		Sunflowers .. ..	.. .. . 0 6	1 0
Gladioli	12 bunches 6 0 9 0		Sweet Peas	12 bunches 2 0	4 0
Hyacinths, Roman, 12	sprays 0 0 0 0		Sweet Sultan	12 bunches 0 0	0 0
Lapageria, white, 12	blooms 2 0 4 0		Tropeolum	12 bunches 0 0	0 0
Lapageria, red ..	12 blooms 1 0 2 0		Tuberose	12 blooms 0 4	1 0
„ longiflorum, 12 blms.	3 0 6 0		Violets	12 bunches 1 0	0 0



IGNORANT FARMERS.

THAT there are plenty of people to kick a man when he is down is doubtless true enough, but we do not intend

joining them, as the title of this paper might at first sight induce our readers to suppose; for it is our object in this paper to try and lend a helping hand to farmers who are well nigh overwhelmed by the combined evils of poor crops and low prices. We have seen among reports of farming prospects and practice, that in one part of Sussex Wheat will not average three sacks per acre; in another part of the same county the yield is given as three to four sacks an acre less than last year, and a very poor-looking sample. We are also told by a farmer writing from a northern county that a friend who took a farm in the south of England, when leading out manure on to his grass land this spring, was told by his neighbours that he would poison the land, as it was only ten years previously since it was manured! Surely the "friend" must have known that the remark was satirical! Yet the northern farmer gravely calls attention to it as one of the "varied systems of treating grass lands."

Now we have had considerable experience of corn-growing and the management of grass land in Sussex, and it enables us to assert that a Wheat crop of three or four sacks an acre is a result of bad or careless practice, and not a peculiarity of the season. We may also assert that no farmer who understood the management of grass land could possibly suppose the negligence implied by no manure for ten years to be worthy of the designation of a system. Keep well within your means, we would say to every farmer. If you have £500 of capital, let fifty acres be the maximum area of your farm, and you would probably find forty acres answer better. £10 an acre is the lowest amount with which it is possible to farm well; £15 an acre is so much better that if it were possible we would like to make it compulsory for that sum to be applied to every farm as it is taken in hand. But there must be no ignorant practice, no blind follow-my-leader work; rather should there be an intelligent comprehension of the nature of the soil and its requirements; of the composition of manure, and its economical application to the soil; of the most suitable crops and how to cultivate them in order to obtain the highest possible results. These are all matters of primary importance, and of which there is much deplorable ignorance even now, for there can be no question that three-fourths of the farmers of this country are ignorant of many things of vital importance in their calling.

Let us take the soil to begin with, and inquire how many men in any given locality could answer such simple questions as What is alumina? What is silica? What is the origin of clayey soils, of gravelly soils, chalky soils, peaty soils, alluvial soils, marshy soils, loamy soils? and how may any or each of them be improved? Of what do the organic or inorganic elements of the soil consist? What is an element? What becomes of the elements of the soil under cultivation? Then, too, what is known of the first principles of drainage? It would probably occur to the most ignorant that water must not be allowed to accumulate in the soil so as to render it sodden, or, as it is more generally termed "wet." But what is known generally of the action of water left in the subsoil at a foot or two beneath the surface? Of capillary attraction? of the low temperature arising from it? Of the importance of keeping the water-table at a given distance from the surface as a preventive?

Of plant growth and plant food how much is known? Vegetable physiology and agricultural chemistry are perhaps rather alarming terms for a plain farmer, but even he must acknowledge that under the simple designation of plant growth and plant food he finds matters of such importance as to merit his best attention. A wide field for intelligent observation opens before us here. Seed germination, root and branch growth, the influence of air, rain, and solar heat. What proportion of nutriment is derived from the air, what from the soil? In what form is it absorbed by the plants, and how is it absorbed? We are thus led on by a natural sequence to the all-important question of manures. We learn that both from the atmosphere and the soil plants absorb food in a gaseous state. An analysis of the plants shows us

what are the proportions of nutriment absorbed by them, and analyses of the soil show us wherein it is deficient in fertility or plant food. If we are asked, How is a farmer to analyse the soil? we reply that nothing is more simple. A few trial crops and intelligent observation ought to enable him to master the condition of his soil and to understand its requirements without having recourse to a chemist's laboratory. Drainage, clean soil, mechanical division of the soil, and a correct and economical application of manure to it, was the sum and substance of a lecture which we once heard a learned professor give to farmers. He is a famous chemist, yet it is to Nature's great laboratory that he goes chiefly for instruction. Trial plots, where he can ascertain the correct proportion of chemical manures requisite to obtain the best results with all farm crops, are in use year by year. Close observation, a careful record of results, and sound common sense combine to render him a skilful leader and safe guide. Can farmers do better than follow his example?

WORK ON THE HOME FARM.

When home-grown seed is to be used some early threshing of corn becomes necessary; apart from this, it is desirable to put off threshing till the pressure of autumn work is over. Every day of fine weather is now eagerly taken advantage of for land work; ploughs, cultivators, rollers, and harrows are all kept going to eradicate weeds, which are burnt at once as they are drawn out of the soil. Much of the land has been so dry, especially heavy land, that ploughing has told upon the horses. Steam tackle proves a great help just now; if rightly applied throughout the year it should enable one to dispense with from a third to a half of the ordinary number of horses. Taking the ordinary computation of £25 as the cost of keeping a horse per year, it is an easy matter to ascertain what are the advantages on the side of steam cultivation. Chemical manures are being procured for winter corn, it being our custom to apply a half-dressing at the time of sowing and another half-dressing in spring. The quantities and sorts used per acre now are $\frac{1}{4}$ cwt. nitrate of potash, $\frac{3}{4}$ cwt. nitrate of soda, $\frac{1}{4}$ cwt. steamed bone flour, $\frac{1}{4}$ cwt. superphosphate, and $\frac{1}{4}$ cwt. coprolite. For general practice this is recommended as a safe mixture, which we have found to answer well in different formations both in Sussex and Suffolk. Do not bury the manure deeply, but apply it either upon the surface or just before the last turn of the harrows. The dry weather has given so severe a check to growth that the pastures are becoming somewhat bare, and we are glad to withdraw the sheep from them to Cole seed, Rye Grass, Mustard, Sainfoin, and Turnips. Such crops in sheep-farming are invaluable now; without them we should be at a loss for green food, or, rather, we should have to run the pastures so hard as to leave them quite bare for winter. We can hardly lay too much stress upon the importance and value of green crops in the economy of farm management. They afford a provision of food to which we gladly turn upon emergency, and when not wanted they are ploughed in to store the soil with nutriment. Farm work is so subject to the influence of weather that a broad margin has frequently to be allowed in our calculations and plans even for the immediate future. Only a few weeks ago "keep" of all kinds appeared so abundant as to justify a rather large expenditure upon sheep. If, however, we had trusted only to our meadow and park lands, the sheep would now be failing in condition, and some portion of the stock sold at a loss.

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. $51^{\circ} 32' 40''$ N.; Long. $0^{\circ} 8' 0''$ W.; Altitude, 111 feet.

DATE.		9 A.M.					IN THE DAY.					Rain
1886. September.		Baromet- er at 32 1/2 and Sea Level	Hygrome- ter.		Direction of Wind.	Temp. of Soil at 1 foot.	Shade Tem- perature.		Radiation Temperature.			
			Dry.	Wet.			Max.	Min.	In sun.	On grass		
Sunday	..... 19	30.069	57.2	54.3	N.E.	57.4	70.6	47.7	105.6	41.7	—
Monday	..... 20	29.919	55.6	52.1	N.E.	57.7	66.2	50.9	110.6	44.2	—
Tuesday	..... 21	29.665	53.9	51.4	E.	57.2	68.3	51.4	103.8	43.7	—
Wednesday	..... 22	29.543	55.3	49.0	N.E.	58.0	63.8	47.2	103.8	43.8	—
Thursday	..... 23	30.057	49.6	42.1	N.W.	56.8	61.1	49.3	105.3	38.8	—
Friday	..... 24	30.162	52.3	48.1	N.	51.3	58.8	47.1	77.3	37.8	—
Saturday	..... 25	30.155	50.4	47.3	E.	56.9	59.7	47.9	77.9	46.6	0.033
		29.953	51.2	49.9		57.1	64.1	47.9	97.8	42.1	0.033	

REMARKS.

19th.—Fine and bright throughout.
20th.—Fine and generally bright, but dull at times in the morning.
21st.—On the whole a dull cool day, but with a little sunshine in morning.
22nd.—Fine, bright, and cold, with occasional threatening clouds.
23rd.—Cold, with alternate cloud and sunshine.
24th.—Dull and cold.
25th.—Cool, with uniform light cloud.
A fine, generally bright, and rainless week; the rain entered to the 25th having fallen in the early hours of the 26th. This rain terminated an absolute drought of fourteen days. Temperature exactly the average, and about 5° below that of the preceding week. — J. SYMONS.



COMING EVENTS.

7	TH	
8	F	
9	S	
10	SUN	16TH SUNDAY AFTER TRINITY.
11	M	Meeting of the National Chrysanthemum Society, Bishopsgate Street.
12	TU	Royal Hort. Soc. Committees at 11 A.M., and Fruit Show (two days).
13	W	National Chrysanthemum Society, Floral Committee at the Westminster [Aquarium]

OVERHAULING.

TO "turn over for examination, to inspect," is the dictionary interpretation of the above not particularly elegant word; but as utility is of greater moment than euphony to all who are earnestly engaged in gardening, our heading will not be inadmissible. Every department in a large garden should be thoroughly examined periodically, and its exact condition noted, with the object of registering any failures or mistake, and recording impressions in respect to desired improvements. Small gardens should also be similarly inspected, with the view of rendering them, if possible, more satisfactory in the future than they have been in the past. It is a mistake to suppose that this care is not necessary in the case of small and medium sized gardens. As much thought is needed in the conduct of these as in the management of large establishments; and even more planning, scheming, and forecasting are often requisite where the demands of the owners are great and the resources limited, than are called for under differing circumstances, where the space is fully equal to meet every want and with a considerable margin to spare.

No better time than the present can occur this year for a general overhauling in gardens. Everything of a structural nature should be brought under close inspection for ascertaining any possible deficiencies or dilapidations, and putting right anything that may be found wrong in the best manner and with the least inconvenience. Doing work out of season is always costly and seldom satisfactory to anyone concerned. Owners of property, builders, painters, glaziers, and gardeners are often irritated during the progress of repairs, when all would have gone smoothly had not the work been commenced a month too late. There has been a tendency of late to a greater extent than formerly to let small faults pass, with the object of restricting expenditure; but small faults thus left quickly grow into large ones, and the liabilities that are being incurred for future eventualities grow faster still, and no long time elapses before we have a great ruin and a great reckoning day. No plan is so good and economical as rectifying small evils and making good small omissions with promptitude, every week's delay adding to the ultimate cost and inconvenience. There is nothing so cheap as paint when applied at the right time for preserving woodwork, nor of timely pointing for preserving masonry. In the general overhaul, then, do not forget the pointing and painting.

Let the heating arrangements be subjected to a rigid examination. Boilers, pipes, and flues should be cleansed and tried, and these with all valves tested, as in no other way can assurance be felt that they will be equal to the demands upon them when the time of trial comes. A little labour devoted to this work now, and a trifle expended in putting any little wrongs right, is as nothing compared with the loss attending a breakdown three months hence, and nothing should be omitted that can be done for the aversion of such a calamity. All drains should be operative and supply pipes in order, so that future trouble may be avoided, and outlay, the result of neglect, prevented. Nor should the

winter's fuel supply be overlooked, as stores can be replenished or contracts completed now at much less cost than may have to be endured in a few months time, for it seems to be the "custom" to raise prices in winter, and vendors' stores are filled to overflowing in readiness for the harvest they hope to reap from their own foresight and the habitual procrastination of their supporting friends.

A thorough examination should be made of pleasure grounds, plantations, and trees now in connection with projected alterations. This overhauling is too often left till the foliage has fallen, and consequently neither the thinning of trees that are getting too crowded nor the arrangement of others that are to be planted is well done. The extent to which trees should be thinned cannot be so well determined at any other period of the year as just when their season's growth is completed. The full extent of the crowding can then be seen; but in midwinter, when the leaves are down, the crowding is not apparent to the inexperienced, and thus gardeners and foresters are not allowed to do what is needed, and trees and plantations are spoiled. Let the trees for removal be marked now, and the decisions arrived at adhered to when the time arrives for doing the work. It is deplorable to see thousands of trees spoiling, and ornamental plantations going to ruin, because owners of pleasure grounds and directors of public parks are afraid to thin the trees. This policy of fear is a fatal policy, and the sooner it is reversed the better. Large sums are expended on trees, shrubs, and labour in producing a jungle; the magnificent specimens that adorn many parks and pleasure grounds in various parts of the country are the reward of a very different system. Modern planters might advantageously take a lesson from the old-fashioned arboriculturists and landscape men of the past. If they commence at once they may learn the alphabet of the subject before the leaves fall; they will not be able to see the letters afterwards.

Equally in the disposition of trees for picturesque effect the key to the work should be mastered now. At no other time can such a clear conception be formed as to what is best fitted for certain positions as when trees are studied in their autumn garb. All planting arrangements should be settled now clearly and definitely, and when the period for carrying out the plans comes round the work will proceed with alacrity.

Orchards and fruit plantations should be carefully examined, and individual trees scrutinised, so that their exact condition can be appreciated, and the best line of treatment determined in respect to removals, thinning, root-pruning, grafting, or whatever is suggested as best to be done under the circumstances. Fruit trees innumerable are habitually fruitless because the disposition of the branches is determined at the winter's pruning. They appear to be thin enough then, but are delusive when leafless, and thin-looking trees in winter are in summer a thicket of growths and constitutionally imperfect foliage. This applies to trees on walls as well as to bushes and pyramids, for the evil is flagrant all round, but not in all gardens, for cultivators who grow the best fruit do what all others are now invited to do—see that the trees are not crowded when in leaf, the disposition of the branches afterwards is quite immaterial.

The same close inspection of Vines and fruit trees under glass should be made without delay. It is not too much to say that the great majority are seriously overcrowded, and half the laterals of the former and growths of the latter should be cut away. The true condition of Vines and Peach trees can be seen now, it will soon be less apparent. But let no one think the evil is removed when the leaves are swept away. Faulty enough many of these were through want of space for development and light for strengthening their tissues; but after they are gone the evil, the source of their imperfect character, remains—overcrowded growths. Look very carefully into this matter at once, and determine on a method for future improvement and better crops of finer fruit before it is too late.

The overhauling that is advocated must extend to the flower and kitchen garden. The cropping of flower beds and borders for another year should be determined before the occupants of the current season fade, and provision be made accordingly for meeting the demand. In the absence of a system of the nature indicated space is occupied in winter with plants that are of little use in spring, while those that are wanted are not to be found, having been needlessly and thoughtlessly crowded out. It is the same in the vegetable supply. Unless careful note is made of the position, and the season's wants accurately balanced against existing and prospective crops, an alternate glut and famine are apt to result, instead of a steady unbroken supply of seasonable produce.

A very thorough overhauling of plants in pots is also imperatively needed at this season of the year. It is surprising to see so much space in many glass structures occupied with worthless plants. Miserable, disease-stricken, and insect-infested "specimens" are huddled together on the more-the-merrier system, as if there were more virtue in numbers than anything else. A well-considered yet courageous clearing-out plan is sadly needed in many gardens where there is "room for nothing," and space might then be gained for something that would be a credit to the cultivator and the garden.—EXPERIENTIA DOCET.

THE NON-VENTILATING SYSTEM.

HAVING given the system of growing Cucumbers and various other plants without air a good trial, I was naturally interested in the remarks of "A Cucumber Grower for Seed" (page 273) on this subject. To tell the truth I was not surprised to learn that he secured fully one-third less seed from a given number of fruits than he had hitherto done when the Cucumbers were grown on the old system. When a house is kept constantly close, and in addition much moisture is distributed, the atmosphere is almost certain to be unfavourable to a good set on any shy-seeding varieties of fruit, and the Telegraph Cucumber is proverbially a shy seeder even under most favourable circumstances. Melons will sometimes set a few fruit in a house kept constantly close and very hot. We had some in pots this season that set in the Cucumber house; but as a rule a dry atmosphere, especially in the morning, and which is obtained by judicious ventilation, is necessary to insure the setting of the requisite number of fruits. The greater portion of Cucumbers annually cut would, if left to ripen, yield no perfect seeds, and unless seeds are wanted no one takes the trouble to fertilise the blooms. Further, under the "express system" I believe it is possible to obtain a much greater number of Cucumbers at one time than by the old system—more, in fact, than the plants are capable of perfecting; and by perfecting I mean in the sense that each fruit contains an average number of perfect seeds. It is the work of forming the seeds that usually proves so weakening to the plants, and we all know that Melon plants must be strong and well rooted before they will swell off a good crop of fruit. Cucumbers being of a similar nature, it follows they too must be somewhat similarly treated.

As far as my experience goes, I am of opinion that the non-ventilating system of Cucumber culture will never become popular with gardeners other than those who grow solely for the markets, but it may with advantage be applied to the culture of various plants I shall name. With us it answered remarkably well with Cucumbers up to the end of June, and at that time I was sanguine it was the right thing, and said as much to others who had their doubts; but subsequently I found we were not so clever as we had thought, for we broke down in July. All the while the blinds are on and the Cucumbers are kept constantly moist over the foliage and at the roots; the house being also so highly charged with moisture, the hottest sun does not injure the foliage, and in a steaming hot temperature the fruit grow at a wonderful pace; but let the man in charge neglect the house five minutes too long, and it must be a heavy shading indeed that prevents burning, red spider, and other evils, for red spider will thrive, once established, in spite of a saturated atmosphere. Gardeners with their multifarious duties cannot be constantly watching a Cucumber house; at any rate, there is no time for it here, and therefore I maintain that the express system is unsuited for private places. I am aware that Cucumbers are thus grown by the thousand at Prescott, and one of our Liverpool party who paid a visit to the most noted grower informed me that Tomatoes were also similarly grown, and were to be seen in wonderful perfection in common with the Cucumbers. Perhaps Mr. Bardney, who, I believe, first directed attention to this new system in the pages of the *Journal of Horticul-*

ture, will further enlighten us, and also give his opinion as to the advisability of trying the plan for seed-saving.

Although disappointed with the non-ventilating system for Cucumber culture, the reverse is the case with our experiments on similar lines with a mixed stove of plants. During the whole of the spring and summer of the years 1885 and 1886 this house was kept constantly close and "fearfully hot," as it was frequently found by numerous visitors. The result was in every respect most surprising and satisfactory. A large plant of *Allamanda Hendersoni* on the roof bloomed most profusely from May nearly up to Christmas, and even later many blooms were cut, and it has done just as well this season. We commenced cutting trusses of *Stephanotis* blooms last Easter, and we have not been without blooms up to the present time, large quantities be at all times open simultaneously. *Dipladenias* thrive equally as well under the same treatment, and in each case no fault could be found with the size and substance of the blooms, nor with their duration. Underneath these we had *Crotons*, *Dracenas*, *Pandanuses*, *Pancratiums*, *Eucharises*, and *Calanthes*. The latter grown on back shelves near the glass are as strong and healthy as can well be, and flower beautifully. *Eucharises* have improved surprisingly since we have adopted the new system, the leaves being larger, of greater substance, and very green, and we get three good crops of bloom in the year, besides flowers at odd times. They evidently delight in plenty of heat and moisture, with a moderate amount of shade. *Crotons* are especially happy under this treatment, and were I called upon to grow a number of plants quickly to a good size, they would get no air. It should be added we are particularly careful to keep the canvas blinds drawn over the roof all the time the sun has much power, and the plants are, on clear days especially, very frequently syringed, the walls, staging, and floors being also well moistened at each time. If these precautions are neglected failure must soon result, as when the temperature stands at 100°, or even more, the evaporation is very rapid, and unless plenty of moisture abounds burning soon follows. At the present time the blinds are not used, and we give a little air, nothing being gained, on the contrary harm may be done, by stimulating growth at this time of year; and a little fresh air circulating prevents the spotting of delicate blooms, this not happening when there is more light and heat. It is a curious fact that *Cinerarias*, *Primulas*, and *Cyclamens* grow sturdily enough in cold frames with little or no air given them provided they receive a fair amount of room.—W. IGGULDEN.

HEATING BY HOT WATER.

[Read before the Members of the Preston and Fulwood Floral and Horticultural Society, August 7th.]

(Continued from page 293.)

THE DERBYSHIRE BOILER.—This is a modified form of the "Loughborough" boiler that was sent out by Messrs. Messenger and Co. for heating small greenhouses. The "Derbyshire" is represented by fig. 47, and the "Chesterfield," which is but slightly different, by fig. 48. These boilers have been kindly lent by Messrs. R. Halliday & Co. for illustrating boilers suitable for small

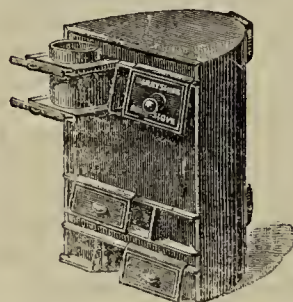


Fig. 47.

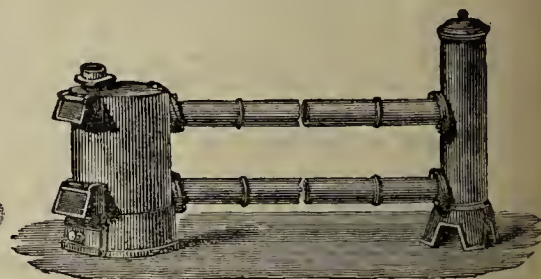


Fig. 48.

greenhouses. The "Derbyshire" has been selected because Messrs. R. Halliday & Co. were awarded the silver medal for it at the Royal Horticultural Society's Show in Wavertree Park, Liverpool. The price of the boiler, which is an important matter for this class of cultivators, together with its adaptability for the purpose, were the main grounds for the selection of this boiler for the post of honour. The "Chesterfield" is illustrated to show the method of arranging the pipes with the expansion box attached. These can be fitted to the "Derbyshire" in the same way. This is a safe arrangement for amateurs; the supply tank is dispensed with. The expansion box, which reduces the risk of the pipes or boiler failing, is the supply cistern as well. In large arrangements this method cannot well be practised, but for one or two small houses no safer or more reliable principle could be followed. The "Loughborough," the "Halifax," the "Liverpool," and

many other very similar boilers are also equally good, and would, I have no doubt, do their work as well as those that have been selected for illustration.

THE POSITION OF THE BOILER.—FLOW AND RETURN PIPES.—The position of the boiler being at the lowest portion of the arrangement, the common saddle and its improved forms should be set upon a horizontal plane. Some give these boilers a slight rise towards the horizon—that is, from the front to the back. They are best set perfectly horizontal. The flow may be taken from the centre of these boilers. Some prefer it near the end, but this makes no difference in the working, and for the sake of convenience it may be taken from any portion of the top of the boiler beyond the centre. The flow pipe may rise above the boiler 3 feet or more if desired, as long as it is carried level or with a gradual rise afterwards down the chambers to the houses to be heated. It must be remembered that the flow pipe must leave from the highest point of the boiler, and the higher the pipes rise above the boiler at the commencement the more rapid is circulation. The height given need not be exceeded, for the higher the pipes rise above the boiler at the commencement the deeper it is necessary to have the stokehole. The return pipe or pipes should enter the boiler at its lowest point. Some prefer them on both sides, if there are two, near the front, others near the base. The first is, perhaps, the best, but no difference in the working of the boiler will be found if the latter method is adopted. The returns should always be at the side of saddle boilers and at the lowest point of upright tubulars. When water bars are employed in both saddles and tubulars, provision is often made for the returns to be connected with the water box to which the bars are fixed. It is contended that two returns—that is, one on each side, are preferable to one, and no doubt they are, but it is immaterial as regards the working of the boiler. When one return only is employed sediment may be driven to the opposite side of the boiler and remain there. This is the main contention for the two pipes, and no doubt it is perfectly correct as boilers are constructed and fixed by many hot water engineers.

SLUICE PLUGS.—Boilers are invariably provided with one for the purpose of drawing off the water when required. These are in most cases too small for the work they have to perform. With one return sediment will collect on the side opposite to where this tap has been provided, and if there are two returns the same will take place, only in a smaller degree. Every large boiler should be provided with two sluice plugs instead of one, which should be as large as the boiler will allow. When the sluice pipes are of good size, and the cap removed, the water rushes out with force and carries with it a large amount of sediment. By making provision for two sluice pipes the boilers can be thoroughly washed out when empty by the aid of the supply tank. This should be done annually, for if sediment becomes deposited in the boiler a wasteful expenditure of fuel is the result before the water can be made to circulate with freedom.

THERMOMETERS AT THE BOILERS.—From the lowest part of the boiler and from the flow pipe, small pipes should be connected with a thermometer after the pipes have been united into one neck. By this method the average heat of the water in the boiler can be ascertained. The thermometer should register the maximum and minimum heat of the water. Registering thermometers are not generally employed for this purpose; all that I have seen in use only register the maximum. Such thermometers are not always reliable, because so much depends upon the memory of the man on duty whether they prove of real service or the reverse. When both sides are registered it can be observed at a glance whether the temperature of the water has risen or fallen during his absence. To render these, however, of the greatest value the external temperature must be taken into consideration, for if it has fallen and the heat of the water at the boiler shows the slightest decline the man knows that it is necessary to push on his fire, or the reverse if the external temperature has risen as well as that of the water in the boiler. When reliance is placed upon the thermometers at the boiler, it is necessary that good valves be provided to all the houses and the pipes arranged as has been described, so that some dependance can be placed on the circulation of the water being regular and constant. With well-arranged pipes and regulated valves an observant man can avoid frequently opening the doors of plant and other structures during the evening for the escape of the hot air, which is replaced by that from the external atmosphere which is probably 20° or 30° colder. After a long and cold winter plants against the doors have often a sickly appearance, which is brought about by no other cause than a severe check through opening the door perhaps hourly during the evening until banking time to see if the temperatures are right. This, to a great extent, can be avoided by the use of thermometers at the boiler if the man in

charge is thoroughly observant and trustworthy, and unless this is the case they are useless besides being a mere ornament.

BOILER FRONTS.—Portable boilers have their fronts cast to them; in fact, in many instances they are part of the boiler, and the furnace door is usually fastened by the old latch principle. This is wrong, as I shall endeavour to show, and may lead to disastrous results. Those who make boilers on this principle would do well to take the hint and provide some better and safer method if they do not think well to adopt the one that will be detailed—that is, if they desire to have a boiler that can be left with some degree of certainty that failure will not result during absence. The furnace door should always be secured to a round rod of iron at the top, so that it will slide backwards when required. By the use of sliding doors hung at the top the bottom of the door is at liberty, and can be forced slightly forward in case combustion takes place after banking, or at any time after throwing a good quantity of fuel on the fire at one time. When coal, nuts, or even “slack” is used for fuel these explosions often take place, and the soot boxes in the various forms of saddle boilers are not unfrequently blown out into the stokehole. When the doors to all flues are secured, which they always should be, and provision made at the door for escape in case combustion takes place, the boiler and all its fittings are safe. Soot boxes, if they are employed, should always be built into the brickwork, so that they cannot wear loose and destroy the draught of the boiler. The portions removed should also fit tight. Such heavy soot boxes that are sent out, for instance, with the front of the “Gold Medal” boiler and others cannot be too strongly condemned. With a large boiler a strong man is required to lift it, and the frame in which it fits is constantly shaken loose as well as the surrounding brickwork. Such soot boxes should not be employed; in fact, they can for all boilers be dispensed with. They should be mere lids that fit into the frame with a latch, or, better still, they must be tight-fitting doors. I have not seen any better boiler fronts than those fixed by Messrs. James Coombe & Sons, to their saddle boiler with horizontal cast tubes and the Liner front of Mr. Joseph Bramham. For a large boiler the latter is the more elaborate and imposing of the two. It is in every way similar to the first, but larger. The former possesses all the good qualities needed for flued saddles of the Allerton Priory style. The ashpit and furnace doors are hung as has been described on rods at the top, the doors are not divided in the centre as is the case with some fronts. The doors for cleaning the flues are two in number, which are fastened to a central piece of flat iron. These fronts comprise all the requisites necessary, and are what all good boiler fronts should be.

CAPS TO BOILERS.—These can only be fitted to various forms of the saddle boiler, one of which was represented attached to the “Allerton Priory” boiler. They are employed instead of a brick arch between the front and the boiler. They certainly assist in the economy of the heat thrown off by the burning fuel. These caps are practically small boilers, and the flow pipe from them should rise from the top and be connected to the main flow pipe. The returns can be taken from each side and connected with the large boiler. Some might consider these useless for the amount of power they add to the boiler, but they possess other good properties. When they are used a good plate must be provided inside between the front and the bars. The tendency is to get the fire too near the front in many boilers, which not only ruins the front in time by rendering it red hot, but a large amount of heat is wasted. But with a good sized plate, which must be provided when caps are used, the fire is kept well back, the front insured against injury, and no heat is lost.

FIRE BARS.—There can be no question which is the best, the hollow water bars, or the ordinary cast ones. The first not only add wonderful power to the boiler, but they are durable, and last in good condition for many years even where large fires are constantly kept. The ordinary fire bars for large boilers where a great heat is maintained will only last one winter before they are burnt through and twisted into innumerable shapes. Such is the condition of the ordinary bars in the large boilers at Norris Green, and to replace the bars annually means a large outlay in a few years, which in the end proves more costly than if hollow bars were at first employed. Not only are they the cheapest in the end, but they add to the power of the boilers to such an extent that those who have not worked them can form no conception. The ordinary fire bar does very well for small boilers that are sufficiently powerful for their work and where a great heat is not maintained regularly. In such positions they will last for several years without being renewed. It is a good plan to construct the ashpit so that water can be constantly kept in it. If the water can be kept cool by a steady flow in and out it acts beneficially in the preservation of the bars.

SETTING BOILERS.—To deal exhaustively with this matter would require a series of articles, for there are as many systems as boilers, and therefore I do not intend to enter into details that may be applicable to any one boiler. The arrangement of the pipes may be perfect and the boiler all that could be desired, but if it is set wrong it is certain to prove unsatisfactory, all else being of little avail. The maker of any particular boiler is familiar with the best method of setting it, and as they are always willing to give this information gratis with the boiler, I strongly advise those who need help in this matter to seek it from those who are best able to impart it.

STOKING.—This is by no means the least important matter connected with the subject of heating by hot water. Many boilers have to be stoked in holes that are a disgrace to any establishment and unfit for a man to enter. They are frequently small underground holes, where the man in the performance of his duty not only knocks the skin off his hands frequently in the cleaning of the fire, but is smothered and nearly choked in the bargain with smoke, dust, and sulphur. Very rarely are stokeholes in keeping with the rest of the establishment. This is not only the case in small but in large gardens, where everything else is on an elaborate scale. No wonder men stoke badly, for they are glad to get away from such places as rapidly as possible. Bad stoking means a wasteful expenditure of fuel, which in a few years would pay for new stokeholes or boiler houses.

There are a few exceptions, which I am glad to say are increasing in numbers annually. Messrs. James Coombe & Sons have been the means of getting good stokeholes in more than one garden; for instance, the one at Allerton Priory and at Norris Green are models of what these places should be. A stokehole should be light; it is better covered with a glass than a slate roof (the roof in the case of the latter is just as good as if it had been provided for a vinery); it should be roomy in all directions and liberally ventilated, so that the dust and dirt in clinking and cleaning the fire can pass away from the man as quickly as possible. Under such conditions stoking becomes a pleasure rather than a nuisance, and a man can take some pride in striving to be a good stoker.

The economy of fuel or the reverse depends more upon the stoker than upon the boiler. A good stoker will so regulate the draught of his boiler that the whole of the heat thrown off by the burning fuel is transmitted to the various heating surfaces of the boiler, and thus waste none of the heat. A bad stoker will do the reverse, and burn nearly double the amount of fuel and get less heat in return. With a well-regulated draught below and above the furnace, a clean fire, clear at the back, with the consuming fuel towards the front, but little heat will be wasted and only a small per-centage of carbon conveyed to the chimney. This has special reference to stoking the different forms of the saddle boiler. With upright tubulars the economy of fuel is in a very large measure dependent upon the management of the damper in the chimney. Where black smoke issues from the chimney in large volumes it is certain that waste is going on—either the draught is wrong or the fire black and dead at the back. Too frequently dust and burnt fuel are allowed to lodge at the back, and often a large quantity of fuel is thrown well back upon it and the burning fire kept in front. This is wrong. All dust and dead fuel from the back should be removed daily and the bright fire kept there, while the fuel burning and to be burnt should be towards the front. The front of the bars must also be kept just clear, so that air can pass in and carry the smoke and gases over the bright portion of the fire to be consumed. When stoking is carried out on this principle the smoke is practically consumed, and instead of a black volume a white one issues from the chimney. The ashpit should be emptied daily and the flues and tubes freed from soot; when they become coated waste of fuel is certain to result. It is impossible to clean thoroughly the tubes and various parts of some boilers, and where economy is one main object such boilers should be avoided, for no matter how good the stoker a large amount of heat is certain to be lost. Every provision must be made for cleaning the heating surfaces of the boiler from soot. When it is necessary to raise the heat quickly the fire must not be checked by putting on too much fuel at a time. To be a thoroughly good stoker, however, it is necessary to study the boiler, the method in which it is best worked, and then, and only then, can be a boiler be stoked effectually and the greatest amount of heat that can be produced from a given quantity of fuel utilised to the best advantage. Success can only be attained in stoking by practice, patience, and observation. All who wish to excel may do so by perseverance and the exercise of intelligent thought.—WM. BARDNEY.

(Concluded.)

TWO NEW ROSES.

I HAVE been favoured by two correspondents with blooms of two new Roses of which a good deal has been said, and as they are both transatlantic they are the more interesting; not that America is a new territory for the queen of flowers, for it was from thence in the early part of this century that we received the Noisette Rose. Philippe Noisette sent to his brother in Paris from Philadelphia the blush Noisette, a hybrid between the Musk Rose and the common China. This, crossed with Tea Roses has no doubt been the parent of many of our vastly improved varieties; indeed, so great is the love for the Rose that from many quarters we have accounts of novelties, many of them doubtless only new in name, like that wretched impostor *Lusitadas* from Portugal, of which a Rose grower at Luxembourg, after giving the glowing description of its raiser (?) says, despite of this enchanting description, it is no other than the old *Celine Forestier*. Then a Hungarian rosarian is raising some varieties of climbing Roses, which we are assured will be highly valued in our northern climes; perhaps so, but we shall see. They are not, of course, intended for exhibitors. Then Messrs. Dickson of Newtonards in Ireland have announced a series of new Roses which have been highly spoken of, so that from all sides there are signs of increased energy in the production of new Roses, bewildering to amateurs, but doubtless profitable to the raisers.

American Beauty, which has been kindly sent to me by Mr. James Bayson of Caen, is evidently of the class now called Hybrid Teas. It is a good-sized Rose, of a lilac pink colour, somewhat, as far as I could judge from the specimen, of the *Cheshunt Hybrid* and *Reine Marie Henriette* colour. Its fragrance is something remarkable, reminding one of that most sweet-scented of all Roses, the old *Cabbage*. It is vigorous in growth and may be an acquisition as a garden Rose, whatever may be the ultimate verdict on it as an exhibition Rose.

From Mr. B. R. Cant, the well-known Rose grower of Colchester, I have received a very beautiful bloom of another American Rose, *The Bride*. This was originated in the garden of Mr. Bancroft, the historian, as a sport from that exquisite Rose, *Catherine Mermet*, of which it was said to be a white counterpart. When we remember what an exquisite form that Rose possesses, the notion of a pure white Tea, as white as *Niphetos*, and without the loose habit of that Rose, when once it emerges from the bud state, when it is so liable to throw about its large petals in all directions like the swifts of a windmill, was tempting enough. The bloom that Mr. Cant was good enough to send me bears out the description. It was a very pure white of exquisite form, but curiously enough, as I suppose the effects of the cold nights, its edges were tinged exactly as *Marie Van Houtte* comes in the autumn. It has therefore every appearance of being an acquisition. Like *Catharine Mermet* it has plenty of substance, and is said to be equally vigorous.

My note on *Madame Gabriel Luizet* has brought me several communications. Mr. Lindsell of Beaston, Hitchin, writes to me, "I say for your *Madame Gabriel Luizet* it is a Rose that I am very fond of, and of which I have forty really good plants, but I had only one small bloom this month. I budded it from flowering shoots on the seedling *Briar* two years ago, but these eleven plants, though they gave grand blooms in July, now stand 6 feet high, without a suspicion of a bud. Mr. Burrell (the nurseryman) cannot make it bloom in the autumn at Cambridge, but tells me that he was in the Rev. W. H. Jackson's garden at Stagdsen, near Bedford, and that his plants were in full autumn bloom. Roses certainly seem to me to have their fads, and if a variety does not like a locality it is hopeless to expect to grow it well. Some of Mr. Whitwell's favourites I can do very little with—e.g., *Madame Hippolyte Jamain*, *Madame Charles Wood*, and *Eugenie Verdier*, while I have no trouble with *Horace Vernet*, *Marie Cointet*, and *Xavier Olibo*." From Mr. Strange at Aldermaston, Reading, another good rosarian I hear, "I have had some good blooms of *Gabriel Luizet*, but other plants have not flowered at all," while Mr. G. Mount of the Rose Nursery, Canterbury, writes to me extolling its good autumn-blooming qualities, and says he has grand blooms from his plants quite fit for exhibition. It would thus seem that she is "uncertain, coy, and hard to please," but to be cherished in the hope that even where she has refused to give a bloom in the autumn some whim may induce her so to do.—WILD ROSE.

VERY LATE PEACHES A MISTAKE.

HERE, as in most other gardens, late Peaches are much valued, and with the object of having them as late as possible a number of trees were planted some years ago, the varieties being chosen to give a succession of fruit for a long time. *Hales' Early* is the earliest, and we always gather ripe fruit from it during the first week in August. This is followed by *Early Alfred*; then comes *Barrington*, followed by *Bellegarde*,

Walburton Admirable, and Salwey. Barrington is ripe now, and Walburton Admirable will be ready in a fortnight or so if the weather is favourable, but if it is not I question very much if many of the fruit will mature. Last year many of them were so late that they did not ripen well and were poor in flavour, and the Salwey failed altogether to come to maturity. This variety is again bearing a good crop, but from the appearance of the fruit now I am sure they will never ripen. This will be three years in succession it has failed to ripen. The aspect is south-east, the position a very warm sheltered one, and if it ripens anywhere it ought to ripen here; but I am of opinion that it is only in exceptional instances that it will ripen, the rule being that it never gains maturity, and were I planting Peaches again the Salwey, which is said to be the latest of all Peaches, would not be included. I would also advise those who are planting Peaches, and wishing to introduce this one for an extra late crop, to ascertain if it is likely to ripen with them, as it is very disappointing to have a tree bearing a crop of fruit which will never mature or be of any use.—J. MUIR, *Margam Park, S. Wales.*

THOUGHTS ON CURRENT TOPICS.

"UTILITARIAN" gave on page 251 a capital reply to my observations on growing Apples for market against walls. I did not think it could pay to build walls for Apples; but removing useless Ivy from a wall and growing on the vacated space splendid Apples for the decoration of shop windows is another matter entirely. There are acres of blank walls, or walls encumbered with useless trees and plants, that might be turned to profitable account if covered with healthy fruit trees of approved varieties, and, in my opinion, the simplest, cheapest, and quickest method of furnishing them is by planting strong maiden trees about 2 feet apart, or rather less, and training them as cordons—upright at first to encourage free growth, then obliquely to check exuberance and incite fruitfulness.

YOUR correspondent is quite right as to Apples of exceptional merit finding ready buyers at "fancy" prices. I did not think of that before. No one can think of everything; but I know, which is better than thinking, of a cultivator who sells Apples and Pears every year for 6d. each for shop-dressing. They are magnificent specimens, the result of thinning, mulching, and watering; indeed, the same care is bestowed on them as is devoted to the production of prize Grapes. With a judicious selection of varieties of fruit, and higher culture, the standard of value would soon be raised. It is deplorable to see the rubbish that is poured into our markets, and humiliating to find American produce preferred to our own. Lord Egerton is right. The only way we can exist is by producing "better things than other countries," so far as our means allow, and they are quite sufficient to enable us to cope with all comers in the supply of useful hardy fruit, if we will but turn them to the best account. I willingly admit that "Utilitarian" has got the best of it in this crossing of swords on growing Apples instead of Ivy on walls, and sending fruit to retail vendors, for which they are glad to give a fancy price for a special purpose.

I WOULD not, however, have your correspondent think that in making the above admission I am afraid of "catching a Tartar twice." I am equally ready to agree or disagree, as occasion requires, and am quite willing to take the consequences. I did not agree with his recommendation of Onllins' Golden as a market Plum. I have grown this Plum, and seen it grown by others, and taking the average value of the produce over a series of ten years, am not able to regard it as profitable. "Utilitarian" thinks I may find his "next selections" more to my taste. These have now appeared. He names many good Plums for market, probably too many, for a number of names bewilder. The Americans who are pressing us so hardly in supplying our markets, not with Plums but Apples, are wiser than we are. It is a characteristic of English growers to grow too many varieties, and too few trees of each, whereas our transatlantic competitors grow few varieties and many of each. They can thus send choice fruit of uniform quality by tons, and it is this uniformity of excellence that tells so heavily. I fail to see much utilitarianism in recommending upwards of thirty varieties of Plums for market. If all those named on pp. 199–208 were planted on an acre of land, another acre on the same field being occupied with the following—Rivers' Early Prolific, Czar, Gisborne's, Denyer's Victoria, and the Crittenden Damson—I suspect the short selection would be more profitable than the long one. The maintenance of a long supply in private gardens is quite another matter, and I think our market guide must have forgotten the heading of his chapters.

OUR friend also appears to have got a trifle mixed over the Pears; he first, on page 175, eschewed varieties that were not good in size and appearance; he thus omits the good old Windsor Pear, which has "made more money" during the last few weeks than any other except Williams' Bon Chrétien, and then goes on to recommend smaller sorts still, including the Swan's Egg, the rich little Seckle, and the poor and poor-looking Beurré Capiaumont. I am so unfortunate, too, as not to understand his selection of Apples. For "extensive cultivation" he recommends among dessert sorts the Queen, which is a culinary Apple—at least, the Queen of the "Fruit Manual" is, and it is of the same type as Cox's Pomona. In his limited selection of "Apples for any purpose" we find Blenheim Pippin and Cobham; but why both? The former is a slow bearer, the latter much quicker and equally fine. In its true form it is one of the finest of Apples; but it is said that everybody has not the true stock. Plant Blenheims on the Crab, and it is dreary waiting for a crop; the Cobham is an earlier and more abundant bearer, and the fruit, if any-

thing, finer, being as a rule larger and better coloured. Emperor Alexander is too light, Lord Derby much overweighting it, and Lane's Prince Albert is far more profitable than the Loddington, which is a bad grower, and "cankers to death" in some soils. "Utilitarian" has, I think, let his fancy play too freely in his fruit "for market" series, and, whether I hook a "Tartar" or not, I venture on this gentle criticism in the interest of intending planters who ought, I think, to hear both sides of the question on a matter of such importance as purchasing fruit trees for supplying the markets with the most and the best fruit in the shortest time. I know every Apple your correspondent names except one, and that is Yorkshire Beauty, which he places second in his list of four select early culinary sorts—namely, Keswick Codlin, Yorkshire Beauty, Duchess of Oldenburgh, and Worcester Pearmain, this latter, by the way, being usually grown and sold for dessert purposes. Can anyone give further particulars about the Yorkshire Beauty?

I SAID so much last year about the cause of the Madresfield Court Grape cracking, and brought such a hornet's nest about my ears, that I have been content to let others express their opinions and experience. The weight of evidence is overwhelming as to an excess of moisture in the air being far more destructive than moisture in the soil, and further experience will confirm this fact. The fruit will split in a close and too moist atmosphere, no matter how dry the roots of the Vines may be, and it will not split when the atmosphere of the house is properly managed if the roots are in a moist outside border. When the endosmosic principle is called into violent action, the tender skin of this excellent Grape is bound to be ruptured, all assertions to the contrary notwithstanding.

THE redoubtable Mr. Iggulden has turned up again on the trenching question, and has been amusing himself with "cracking the nut" of a "Kentish Gardener." I find no fault with the article on page 249. It is very good and suggestive. The cold adhesive soil of Marston is evidently better with shallow culture and the manure pretty near the surface, for the reason that the sun cannot warm the soil to any great depth, and there can be no free growth in a cold medium, however rich in plant food it may be. But soils of a different nature, and they largely prevail, cannot be worked profitably on the scratching system, and not a few gardens are rendered doubly productive by a well-considered and properly conducted method of trenching. Your correspondent appears to be enjoying a sly chuckle because his problem is not solved as to why Lettuces and Kidney Beans grow better on ridges thrown up between Celery rows, and this, too, in the "hottest weather." It is because there is a greater depth of good soil than on the level, and the thrifty plants prove, not disprove, the value of trenching when rightly done. The soil is warmer, too, than when on the level, and the roots of plants are then certain to find the food, a "double dose" of which is provided for their sustenance. No better evidence of the wisdom of increasing the depth of good soil could be adduced than that which appears to be advanced to show the practice wrong. That is my method of "cracking the nut" of Mr. Iggulden, and I trust a "Kentish Gardener" will excuse me for "trenching" on his ground.

I SEE our active-minded mentor has been revelling in ancient history, and found an opportunity for a cut at the late Donald Beaton. It is well for his ardent critic that the grand old gardener is not alive. He was, I believe, right as regards Melons. I have the misfortune to taste a few hundreds yearly, and, as a rule, for there are exceptions, the 2 lbs. fruits are the best. It has been notably so this year, and I may mention, as a matter of fact, that I have found no variety so uniformly good as Hero of Lockinge. The hint that healthy plants are essential for superior fruit is an excellent one, and should be remembered; if the foliage fails before the fruit ripens high quality is out of the question.

AS to tasting Tomatoes, which he advocates, in judging, Mr. Iggulden appears to know the best without tasting, and he tells us to which varieties "preference should be given." I know those he names. Carter's Perfection and Orangefield, are good, but a first-rate cultivator, and a great connoisseur, prefers Nisbet's Victoria to either, and a dish of the small Pear-shaped fruits are highly attractive. The plants bear abundantly, and I am inclined to recommend this variety for trial among others for dessert purposes. By the way, I always thought Mr. Iggulden was a married man, but he tells us he was the only "single" individual in a railway carriage who refused a raw Tomato; and he "civilised," too! Yes, it is surely well for him old Donald has gone to the better land.

I HAVE always been an admirer, almost a worshipper, of the old hardy Fuchsias as referred to by Mr. Lynch. They grew in an old baronial garden, huge bushes, some of them, bearing myriads of flowers that sparkled in the sunlight. I am not sure that it was not these Fuchsias that made me a gardener. I know I could not rest till I possessed some of them many long years ago, and they are now the favourite flowers of one who is very dear to me, for, unlike Mr. Iggulden, I am happily not "single," and am fortunate in possessing a few, but not quite all of those named on pages 266–7. I should prize the little collection of Mr. Lynch more than all the gems of Swanley. Of course Mr. Cannell will think there is something the matter with me, but I cannot help that. When I read the rhapsodies in his catalogue over his "perfect" flowers, I sometimes think he is a trifle "overcome;" never mind, he communicates his love for flowers to others over all the world, and has done, and is doing, a good work.

SOME correspondent has, on page 249, hit the right nail on the head in respect to the Wilson Junior Blackberry, fruit of which was shown so large and plants sent out so small. The sentence worth remembering by introducers of new fruits is this, "Miserable bits, that are scarcely the weight of the price in silver given for them, is not the way to send anything out." Whatever the fruit may eventually prove, the plants distributed were very small juniors indeed, and it is no wonder so many have failed to give satisfaction. The Parsley-leaved Bramble is yet the largest and the best I have seen in this country, and the plants, well grown, bear magnificent fruit bountifully.

DUNNETT'S Champion Black Currant appears to be going through the "small sieve," as all new fruits must do sooner or later, whatever they are, and come whence they may. This is only right, and criticism is apt to begin the sooner and be the keener in respect to anything sent out with a great flourish of its transcendental qualities. It is just possible that some disappointed growers of what is new to them do not wait quite long enough. They do not give plants time to get established and in condition to develop their fruit. I have measured berries of the variety in question with callipers, and found them quite as large as the catalogue representation, but have measured others, notably of the Baldwin, equally large. This obviously does not prove the Champion inferior. The truth is, that both these varieties, indeed all varieties, are small on weak plants and in some soil, the berries being as large again on strong plants in better land. Some persons appear to think that if a particular kind of fruit is produced and exhibited of unusual size that it will retain its gigantic character everywhere. It will do nothing of the kind, and it is a gigantic fallacy to assume that it will. Whether the Champion Currant is distinct from all others I am not able to say, but I have never seen heavier crops and finer fruit on three-year-old trees of any other variety. Mr. John Bunn is quite right; it is a thoughtless condition to stipulate for Black Currants to be shown on bunches, because the finest ripens first and almost invariably falls before the smaller and later, near the points of the bunches, is ripe. Still judges must "follow the schedule," however ridiculous their awards may appear.

BUT these mental wanderings must be curbed. The wee small hours of the morning call me away; the flickering lamp is a silent monitor of fleeting life. I must begone. Let anyone jot down his thoughts just as they come fresh from the fountain, without any pretence at order and systematic arrangement, and he will not be surprised at these erratic jottings of—A THINKER.

THE FLOWER GARDEN.

THE time is at hand when the plants which have rendered the heds in the flower garden attractive during the last few months will have to make way for the spring-flowering plants. As soon as the summer plants have been nipped by frost they should be removed to the rubbish heap, except those required for use another year. These should have the roots and tops reduced, and be stored away in boxes about 30 inches long, 10 inches wide, and 4 inches deep, packing the plants closely together therein in light mould, and keeping them on the dry side at the roots and in an airy house out of the reach of frost during the winter months. The heds thus cleared should be manured if necessary, dug, and then planted with huls and other spring-flowering plants.

Collections of bulbs, ranging in price from one guinea to five, to meet the requirements of gardens, may be had from any of the metropolitan and provincial nurserymen. These collections consist of proportionate quantities of Hyacinths in variety, Polyanthus and other Narcissi in variety, single and double Daffodils, Tulips, Crocus, Snowdrops, Anemones, Ranunculuses, Jonquils, Scilla sibirica, Irises, Crown Imperials, Winter Aconites, Liliun candidum, and Star of Bethlehem. The above when planted at from 6 to 8 inches apart, mixed or in masses arranged according to their colours, make a very effective floral display in early spring. If the soil be of a heavy and consequently adhesive nature it will be advisable to put a little fine sand under and over each huls; in planting in light dry soil this is not necessary.

In Alyssum saxatile compactum, Viola Golden Queen, and Cheiranthus (Wallflower), Marshalli, and common Primrose we have good yellow-flowering plants. Bellis alba (Double White Daisy), and Arabis alba supply us with white flowers, while light purple and shades of blue are represented by Aubrietia Campbelli, Viola Blue Perfection, and Forget-me-nots (Myosotis dissitiflora); and in Wallflower Harbinger we have a profusion of dark red, sweet-scented, ever-welcome flowers. Silene pendula ruherrima and Saponaria calabrica (plants of these two should be raised from seed sown at the middle of July) are two charming pink-flowering plants close to the ground. To this list of suitable spring-flowering hardy plants might be added red and white Virginian Stocks, seed of which should have been sown early in August, and Saxifraga umhrosa (London Pride), and many others, including single and double red Daisies. But we have enumerated the names of a sufficient number of easily obtained free-flowering spring plants to serve the purpose of those of your readers who, perhaps for the first time, contemplate securing a

floral display in their gardens in spring. As to the distance to be allowed between the plants no hard-and-fast line can be drawn, seeing that the number of plants necessary to cover a given space must be determined by their size. However, assuming the plants to be of medium size, we would recommend giving Wallflowers a space of 1 foot apart, Daisies, Arabis, and Primroses 6 inches each way, and all the others about 9 inches from centre to centre of the individual plants. The latter should be taken up carefully with the soil adhering to the roots, and be planted with a garden trowel about the same depth in the ground as they were before, making the soil moderately firm about the roots as the work proceeds. Plants of Forget-me-nots which were "laid in" in rows about 18 inches apart towards the middle or end of May last will now be surrounded by a numerous offspring of seedling plants, which should, as indicated, be taken with care and transferred to the heds. A square yard of Aubrietias or Arabises may be divided so as to plant several good-sized heds with them. Plants of the Primrose are easily raised by sowing a packet of seed in spring, and afterwards pricking the seedlings out in nursery heds and attending to them in the way of watering them at the roots and keeping them free from weeds. Wallflowers raised from seed sown in May should be treated in the same way.—H. W. WARD, Longford Castle.

TRENCHED v. UNTRENCHED SOIL.

HOLIDAY-MAKING and an overwhelming amount of work have until now prevented an acknowledgment of my indebtedness to Mr. Iggulden for, as he frankly states, so pleasantly endeavouring to "crack the nut" I offered him on the subject of trenching a short time ago. I am sorry to say, though, that much as I appreciate his kindness in that respect, I cannot yet see that he has adduced any fresh evidence in support of his theory of shallow cultivation. It is quite true, as he states, that in his first article on the subject he mentions that one class of soil may be benefited by trenching, but if we follow him into the next paragraph we shall find this statement qualified by the assertion [that more harm than good is the result of trenching, and, in fact, that (to use his own words) "the whole business has been overdone;" indeed, it is no undue exaggeration to state that from first to last Mr. Iggulden has been opposed to speak to trenching in any form. Now, no one has a right to dictate to your correspondent the particular mode by which he is to cultivate the soil under his charge, and if he can command for a given time excellent or fairly good crops by adopting a shallow system of cultivation, then by all means let him do so, as it is a matter with which he alone is personally concerned; but it is quite a different matter when the latter steps beyond the boundary of his own domain to teach others that a locally tried system of shallow cultivation is henceforth the most rational method for general adoption. Such a theory as this cannot be upheld. It is opposed even to the most recent scientific teaching, as well as to the experience of the majority of practical gardeners, as the many interesting communications which appeared after your correspondent's article abundantly testified.

Shallow cultivation had, previous to the invention and introduction of the steam plough, proved the bane of successful farming, tending to the impoverishment of the surface of the land; but when improved knowledge, capital, and steam power were brought into play, with a determination to unearth the riches that had for centuries lain locked up a foot or so lower, then did farmers begin to be awake to the fact that if you want first-class crops and permanent fertility in the soil something more than the mere "tickling of the surface" must be resorted to; that, in fact, a deep tilth was the grand secret of successful cultivation, and as with farmers so is it with gardeners and their land and crops. Perhaps Mr. Iggulden will say, What has farming to do with gardening? I say it has a very great deal to do with it, for the same general principles govern both subjects, and especially in regard to soil, and therefore if the "surface tickling" of ante-steam-plough days has been abandoned by farmers for deep cultivation with excellent results, surely horticulturists will not attempt such a retrograde movement as abandoning trenching for the ancient worn-out shallow surface cultivation of our forefathers. We are told that only light gravelly soil is benefited by trenching, and even the propriety of doing that is questioned, and that all of a clayey nature is the better for not being subject to that process. The Marston soil is of a heavy texture, not more than 18 inches deep, with an underlying stiff clay subsoil. This, or a portion of it, we are assured has been trenched, but the results have been anything but satisfactory, and why? because, as your correspondent tells us, he cannot afford the time or his employer the means to properly trench and drain it. Assuming for a moment that a considerable amount of labour and expenditure is involved in properly trenching soils of the Marston type, what about the corresponding items for mulching and the additional food required to replenish the surface soil which on account of the constant drain upon its resources must become frequently exhausted?

The theory that trenching soils of this type is wrong is a mistake, that has and can be proved over and over again—the fault lies not with the principle, but with the way in which it is carried out. Hence, to trench a soil of this kind more than ordinary care and judgment is necessary. Chemistry teaches us that clay soils absorb and retain a greater amount of moisture than any other soil, and that the denser the soil the slower does the evaporation take place, consequently the greater part of the heat which should warm the land is expended in evaporating the moisture, and thus close, compact, retentive soils are naturally cold. On the other

hand, these close, compact, retentive clays when disintegrated by mechanical force, aided by the introduction of drains, lime, cinders, and farmyard manure, are rendered much warmer and more porous, the latter condition facilitating the free passage of air, and consequently in dry seasons rapid capillary attraction, and thereby reducing the necessity for mulching. I quite agree with your correspondent that injudicious trenching has much to answer for, but surely that is no reason why he should denounce its principle. Trenching does not always imply complete reversion of the two spits, and we should imagine no sensible man would treat land similar to that at Marston on the reversion principle. He would rather keep the soil at the top and thoroughly break up the clay subsoil, working among it at every opportunity such powerful mechanical disintegrators as cinder ashes and old mortar, together with farmyard manure and wood ashes, until in process of time the subsoil had been sufficiently improved to warrant its being worked in with the soil. This, I know, is a question of time, and therefore will not find favour with those who believe in present rather than ultimate gain, but in the end the deeper tilth will prove the most advantageous. As a set off against the value of trenching at Marston, Mr. Iggulden states that trenched soil in dry seasons produces root crops far too large to be serviceable, whilst those on untrenched ground are apparently everything that could be desired. Judicious applications of lime would in the first case have corrected the tendency to grossness in the dry seasons, and in the wet ones prevented cohesion of the clay particles, neutralised the acidity, facilitated the free ingress of air and the formation of nitrates, and likewise produced increased warmth in such a soil. If trenching such soil be conducted on this principle, there need be no fear of a superabundant amount of moisture present.

Not a couple of miles away from here there is a vegetable garden exactly similar in regard to soil to that at Marston, and which for years prior to the present gardener taking charge of it, had been worked on the "tickle surface" plan with anything but favourable results. The present gardener, however, happened to be an advocate of good honest trenching, and he at once set to work to trench it three spits deep, not throwing the top spit to the bottom, but keeping it still at the top; in fact, the three spits were simply broken up and turned in their previous respective positions. Coal ashes and old mortar were freely worked among the bottom spit, and farmyard manure in abundance between the latter and middle and upper spits, whilst in the following spring a liberal dressing of lime was applied over and forked into the surface. Now this man has every reason to be proud of his soil and his crops, and I know that no amount of argumental anti-trenching theories will convince him that trenching land properly is injudicious.

Surface cultivation, non-trenching, or whatever term you may apply to this method, will never become popular, because owing to the immense amount of manure required to prevent exhaustion of the soil, the latter eventually becomes surcharged with sour humus to such an extent as to render it imperatively necessary at no distant date to resort to trenching and liming to render it suitable for crops of any kind.

I still repeat that, not only in my own case but in that of my neighbours also, were the Peas thriving far more satisfactorily on trenched than on untrenched ground. In a large garden not far from here I saw the other day the finest crops of Ne Plus Ultra Peas growing in deeply trenched clayey loam that I have yet seen this season.

With all due respect to Mr. Iggulden, I am still of opinion that, contrary to his usual practice, he has jumped too quickly at conclusions on this subject, and has not allowed himself a sufficient length of time to try the effects of judicious trenching at Marston. He may be able for a time to find his system answer, but we have yet to await the results of a few more years' trial ere we can believe in its fallibility.

As to the question of Strawberries doing better on untrenched ground I do not think that the vigor of the plants mentioned is due to the latter so much as to the effects of the probably heavy and rich mulching.

I will gladly give my opinion of the reason why Kidney Beans and Lettuce thrive so much better on Celery ridges than on the level ground during hot weather. It is a problem by no means so difficult to solve as appears at first sight. A Celery ridge, for instance, owing to its elevation, possesses the advantage of having its sides as well as top exposed to heat, consequently this body of earth absorbs two-thirds more of the latter than it would be able to do were the ground level. A Celery trench is necessarily of a very moist character, and this, too, receives the vertical rays of the sun. Now, the effect of this absorption of heat on parallel sides, as well as the upper surface, with moisture below, is an increased amount of internal heat, causing rapid capillary attraction during day and heavy deposits of dew by night, thus imparting to the soil a greater amount of warmth and moisture than would be obtained on the ordinary level. After the sun recedes from its vertical position the rays impinge the sides at a more or less acute angle, thus causing a shadow on the opposite side of the trench, which has the effect of preventing the radiation of the heat and enabling it to be imparted to the soil.

Both the vegetables mentioned have long tap roots, and in the case of the Bean exceptionally so, as well as being a plant requiring a great amount of heat to enable it to grow freely; and the tap roots, encouraged by the extra warmth and humidity of the soil at the bottom of the ridge, descend and avail themselves of it. It will be noticed especially that Kidney Beans grow much more rapidly on these ridges than when planted on the level ground. It must be patent to all who are acquainted with the laws of heat that the greater the absorption of heat the greater the capillary attraction and deposit of dew by night. Vegetable Marrows will also grow freely planted on high ridges without water after once established. I have frequently had similar examples come under my

notice, and have given the subject no small amount of thought. What has Mr. Iggulden to say to this theory?—A KENTISH GARDENER.



OCTOBER seldom brings such WARM WEATHER as that now being experienced in the neighbourhood of London, Monday and Tuesday this week having been remarkable for the intense heat. In several places in the suburbs thermometers have registered 75° to 80° in the shade, and on Tuesday the temperature was 65° at 7 P.M. A splendid rain followed on Wednesday morning.

— THE Committee of the PORTSMOUTH CHRYSANTHEMUM SOCIETY have decided to increase the prize money in the challenge cup class of thirty-six blooms, eighteen each, of Japanese and incurved varieties, distinct, which will now be as follows:—First prize, silver cup, value £25, and £6. Second prize, £5. Third prize, £3 10s. Fourth prize, £1. Entries must be sent to the Secretary on or before November 1st, the Exhibition opening on November 11th.

— "F. H. G." writes, "I this day cut two or three blooms of ROSE MADAME GABRIELLE LUIZET, H.P., and took care to note, with 'T. W. G.'s' letter in Journal in my mind, that they were from shoots springing from about the middle of shoots which had already borne blooms in the summer. I have more blooms coming on. Madame Gabrielle Luizet is therefore a Rose Remontante. It is much to be wished it were as 'perpetual' a bloomer as the Quatre Saisons Rose."

— WE have had under trial for some time samples of MAIGNEN'S ANTI-CALCAIRE for softening hard water, and the results justify our recommending it as an article of comfort and usefulness in homes and gardens where soft water is not otherwise attainable. That a little of this powder softens water is beyond a doubt, and renders it on that account the more agreeable to use for domestic purposes. Many inquiries have reached us from time to time on the best method of softening water for plants. Anti-calcaire will effect this object quickly, cheaply, safely, and well. It can scarcely fail to be of distinct service for softening water for, or in, boilers for preventing furring. The precipitation of calcareous matter in boilers and pipes in garden structures is often a very serious, as it is undoubtedly a common evil, leading when in its mildest form to an excessive consumption of fuel, more and more being required to heat the water as the furring increases, until a practical or actual stoppage and breakdown occurs. We strongly suspect that by the use of this powder inconvenience and loss of the nature indicated would be averted.

— THE CULTIVATION OF TOBACCO.—We learn that Tobacco has been cultivated at Messrs. Webb & Sons' Kinver seed farms in the past season sufficiently to embody two distinct experiments: first, to ascertain whether the growth of Tobacco can be made remunerative to farmers in this country, and secondly, to show what kinds of the Tobacco plant are likely to promote that object best. About twenty kinds have been grown, including all the best varieties that are cultivated in America, such as Big Frederick, Can's Seed Leaf, Virginia, Yellow Prior, Broad Leaf, Yellow Orinoco, &c.

— A NEW Golden Elder named SAMBUCUS AUREA DIXONI is described as a very distinct variety obtained after several years' careful selection from the best coloured types of the Golden Elder. "It has a splendid foliage, of an evenly diffused deep set golden colour, and is a very robust and rapid grower, forming large, handsome, symmetrically shaped bushes in less time than almost any other shrub, and is seen to grand effect when dotted along carriage drives, or mixed with other shrubs at the back of borders or shrubberies. It will thrive equally well in almost any soil or situation, but its fine golden colour is best produced when placed in a sunny position." The ordinary Golden Elders are all very handsome in shrubberies where they colour well, but are not so generally planted as might be expected.

— AUTUMN BEDDING.—"S. C." writes that "The dry weather,

lately, though cold at night, has made that popular hedding plant *Pelargonium Vesvius* show its colour and free blooming to perfection. In the early part of the year a large round bed did not seem quite satisfactory; it was rather high, so I top-dressed it with a little dry night soil mixed with a little potting soil, and it has well repaid me. In another bed the centre is occupied with *Michaelmas Daisy*. Then follows a good row of *Pelargonium Lady Middleton*, then a double row of *Distinction*, next a double row of *Pelargonium Italia Unita*, which grows well with me, the colours coming out strong. *Distinction* no doubt is the leading band, and the bed generally is very effective."

— THE same correspondent observes that "How late *WILLIAMS' BON CHRETIEN PEAR* is in ripening may be learnt from the fact that we have only just gathered the crop from trees on a wall facing west. I weighed one dozen of the best, they turn the scales at 6 lbs. I always find this Pear off the wall keeps well, does not go 'sleepy' so soon after gathering as from a standard tree. I always admire this as a wall fruit, the colour being so good if placed in a cool vinery for a few days."

— It would seem that exhibitions are becoming a favourite form of investment, for amongst several others it has been proposed to erect a *HORTICULTURAL PALACE AND COLONIAL FRUIT EXHIBITION* at Willesden. A freehold site of sixteen acres adjoining Willesden Junction has been suggested, upon which to erect a horticultural palace of glass and iron, in which will be a permanent exhibition, British and Colonial of flowers and fruits and horticultural accessories.

— *DISTRIBUTION OF BEDDING PLANTS*.—The Commissioners of Her Majesty's Works and Public Buildings intend to distribute this autumn, as usual, among the working classes and the poor inhabitants of London, the surplus bedding-out plants in Battersea, Hyde, the Regent's, and Victoria Parks, and in the Royal Gardens, Kew, and the Pleasure Gardens, Hampton Court. If the clergy, school committees, and others interested will make application to the superintendent of the park nearest to their respective parishes, or to the Director of the Royal Gardens, Kew, or to the Superintendent of Hampton Court Gardens, in the cases of persons residing in those neighbourhoods, they will receive early intimation of the number of plants that can be allotted to each applicant, and of the time and manner of their distribution.

— AT a recent meeting of the *WAKEFIELD PAXTON SOCIETY*, Mr. B. Whiteley presided, and Mr. G. Gill in the vice chair. The subject—the Culture of the Plum—was introduced by Mr. J. Camphell, gardener to Mrs. Micklethwaite, of Painthorpe House. Mr. Camphell has devoted special attention to fruit-growing, and a few weeks ago, when he read a capital essay on small or bush fruits, he was requested to prepare and read a paper on "The Plum." Mr. Camphell acceded to the request, on the understanding that the members would exhibit specimens of Plums grown by them, and a long table was well filled with dishes of remarkably fine Plums of nearly all the best varieties grown in this neighbourhood. An excellent and thoroughly practical paper was read, containing much valuable advice and interesting information. A lengthy discussion ensued on the paper, and a number of questions were put and satisfactorily replied to. Amongst those who took part in the discussion were Messrs. Brown, Gill, Preston, Fenner, and Calvert. During the discussion reference was made to the extraordinarily heavy crop of Plums this year, the yield having been the largest which some growers remember for the last half century. It was said that in Kent large quantities of Plums had not been gathered, as the prices at which Plums have sold this season were not sufficient to defray the cost of railway carriage to market. Mr. Camphell strongly recommended that Plums should be thinned like Grapes, in order that finer and larger fruit may be obtained. Mr. Fenner mentioned, in order to encourage thinning, that green Plums are very useful for culinary purposes. Asked whether in his opinion fruit-growing could be carried on in this country and made remunerative to the grower, Mr. Camphell said that he was satisfied it could.

— AFTER referring to the introduction of *Fuchsia coccinea*, Mr. Meehan, in the course of a lecture before the Germantown Horticultural Society, thus noticed one of THE EARLIEST *FUCHSIAS* raised in the United States:—"Another *Fuchsia* from Brazil came to England. It was known as *Effulgence*. One of the plants came into the possession of my father, who was a gardener and florist. I was then only a boy. I had heard of the hybridisation of Peas, and I thought I would try the hybridisation of *Fuchsias*. Another gentleman and myself tried the experiment, which was very successful. We named the first hybrid

Fuchsia St. Clare, after the cottage where we lived. I was offered a new frock-tail coat for my plant, which I gladly accepted."

— A GENERAL meeting of the members of the *NATIONAL CHRYS-ANTHEMUM SOCIETY* will be held on Monday evening, October 11th, at the "Old Four Swans," 84, Bishopsgate Street, City, for the election of new members and transaction of such other business as may arise. Chair to be taken by E. Sanderson, Esq., the President, at 7 o'clock precisely. The Fleral Committee will meet at the Royal Aquarium, Westminster, at 1.30 P.M. on Wednesdays, October 13th and 27th, November 10th and 24th, and December 8th. All persons, whether members of the Society or not, are invited to exhibit at these meetings.

— A CORRESPONDENT, lately visiting Heckfield Gardens, noted a novel and withal a capital way of GROWING TOMATOES OUT OF DOORS. At the southern end of any of the glass structures, whether lean-to or span-roof in shape, narrow brick borders had been built 1 foot deep and 15 inches in width. In this the plants were placed trained up to the glass with a single stem to some, and in other cases three. The plants produced fruit in profusion and promised to ripen off satisfactorily, as in such a position they get the full benefit of the sun's rays and were quite ornamental as well as being useful. The varieties grown were Earliest of All and Hackwood Park.

— "B." says, "*MICHAELMAS DAISIES* are now our most attractive plants, and as a dwarf early-flowering one none surpasses *Aster Amellus hessarabicus*, which is of even growth, about 2 feet high, and bluish purple in colour. *Aster Amellus roseus* is also good, and there are several other forms differing slightly in their colour. *A. ericoides*, though very small almost minute flowers, is pleasing for its elegant habit. *A. laevis* has large flowers, bluish lilac, very free, a capital form. *A. novae-angliae* and *A. novae-angliae rubra*, varying from rose to deep red, while *A. novi-belgii*, with purplish blue flowers, is a good companion for the above. These constitute a good series, showing the distinct types well."

— IN discussing THE MODIFICATION OF PLANTS BY CLIMATE, Mr. Crozier, of Michigan University, has recently remarked "that as plants move from the locality of their largest development towards their northern limit of growth, they become dwarfed in habit, are rendered more fruitful, and all parts become more highly coloured. Their comparative leaf surface is often increased, their form modified, and their composition changed. Their period of growth is also shortened, and they are enabled to develop at a lower temperature."

— MR. IGGULDEN writes:—"I have attended several good shows this summer, at some of which I assisted to judge a considerable quantity of cottagers' and others' garden produce, and have been much struck with the number of exhibitors who have been enterprising enough to invest in *POTATO SUTTON'S SEEDLING*. For once in a way they have made no mistake, for I have not yet seen a good dish of Sutton's Seedling beaten. In one instance a cottager had to be disqualified, as he had unfortunately entered in the class for rounds, but being of opinion it was the best dish of Potatoes in the show we recommended that it receive an extra prize. I should never think of recommending a Potato solely on the grounds that it is of very handsome appearance, but the one in question is a heavy cropper, and the tubers are of excellent table quality. I have seen several good crops this season, but the best was grown by Mr. B. Hopkins, gardener to John Bailly, Esq., Fairlawn, Frome. From 5 lbs. of seed cut up into sets and planted at once exactly 100 lbs. of sound produce was lifted, and this, considering the weather experienced, I hold to be a very good crop indeed. The soil in Mr. Bailly's garden is rather light and shallow, but under good cultivation it usually does Potatoes well, but much more rain was wanted this year than actually fell."

— AS a late-flowering plant for the rockery there are few can equal the old *PLUMBAGO LARPENTÆ*, the bright blue flowers of which and red-tipped leaves have a very pleasing appearance on the Chiswick rockery just now. Blue is never too well represented in gardens, and in the autumn we have such a preponderance of the yellow-flowered *Compositæ* that it is quite a relief to obtain a few shades of a distinct character. The *Michaelmas Daisies*, it is true, give us some pretty tints of mauve and lavender blue, but the *Plumbago* is a brilliant pure blue surpassing all them. It is an easily grown plant provided it is not placed in a very shady or damp position, and can be readily increased by division.

— **CHANGE OF ADDRESS.**—Messrs. Follows & Bate (Limited), announce that they have removed from Dutton Street to their new works at Gorton, Manchester.

— **THE** interesting bulbous plant *CYRTANTHUS HYBRIDUS ROSEUS* shown by Sir Trevor Lawrence at the meeting of the Royal Horticultural Society on September 21st is quite distinct in colour from the original hybrid, which was certificated on August 25th, 1885, under the name of *Gastronema hybrida*. The latter was obtained from a cross between *Cyrtanthus* (*Gastronema*) *sanguineus flammeus* and *Vallota purpurea*; but though *C. hybridus roseus* is of similar origin, the colour, instead of being bright orange scarlet, is a clear rosy red, soft, yet bright and pretty. The flowers are about the same size, smaller than the *Vallota*, but apparently they are produced quite as freely. If a race of these plants could be formed with rose, scarlet, and white flowers, they would be a welcome addition to our early autumn-flowering plants.

— **THERE** are several species of *HEDYCHIUMS* which are very useful in houses, but which are far too seldom seen. The merits of at least three of these have been well shown this season by some large plants in the old Lily house at Kew that have been flowering very freely. *H. coronarium* has large white flowers, very fragrant; *H. Gardnerianum* has orange yellow flowers, with a red filament; and *H. flavescens*, which has been blooming most profusely, has pale yellowish flowers. These plants are very easily grown, only requiring a good sandy turfy loam, with plentiful supplies of liquid manure, as they are very strong in growth. With these plants the *Nymphaeas*, *Nelumbiums*, the fine old floriferous *Ipomæa paniculata*, and numerous other plants, have rendered the house very gay during the past month.

— **THE** October number of the *Journal of Microscopy* contains an interesting paper on the **FERTILISATION OF BRITISH ORCHIDS** by Mr. W. G. Wheatcroft. This is illustrated by three plates of figures giving details of *Habenaria chlorantha*, *Orchis mascula*, and *Ophrys apifera* and *muscifera*. The mode in which fertilisation is effected by the agency of insects is fully and clearly described, both from original observations and the investigations of the late Mr. C. Darwin. In the same issue of the work named is a paper by Mr. A. Percy Smith on the "Identification of Alkaloids," which is accompanied by figures of the crystals of fifty alkaloids obtained from various plants. A third article upon "How Plants Climb," by Mr. H. W. S. Worsley-Benison, F.L.S., gives a *resumé* of the phenomena in respect to climbing plants under the heads of 1, Twiners; 2, Climbers, including leaf climbers and tendril bearers; 3, Hook Climbers or Scramblers; and 4, Root Climbers.

— **THE** daily papers have lately stated that the Sultan of Turkey was presented with **AN ENORMOUS BOUQUET OF FLOWERS** on the anniversary of his accession. It was described as nearly 4 yards in height and 2½ yards in circumference, in the form of a Lemon tree, and that it had occupied ten persons a week in its construction. The flowers of which it was composed are not named, but they were evidently of a very durable character, for London bouquets are not of much value when a week old.

— **SUCCESS** in **GROWING GRAPES WITHOUT FIRE HEAT** cannot be claimed as a new departure, but some interesting experiments have been made in the Royal Horticultural Society's Garden at Chiswick this year with a number of the best flavoured hardy varieties, and as a result the following have been selected as the most satisfactory. The Scotch White Cluster, which is known under several names, but especially as Diamant Traube, has good-sized berries, and possesses a capital flavour, being, in fact, one of the best tried. Chasselas Vihert, another good white variety, has a very agreeable flavour, the berries and bunches of good size. Early Auvergne Frontignan, one of the White Frontignan type, of which it is considered an early form, with juicy flesh and Muscat flavour. Red or Grizzly Frontignan, very rich and sweet. Ferdinand de Lesseps, a hybrid obtained by Mr. Pearson of Chilwell between Royal Muscadine and the Strawberry Grape, has also proved very satisfactory both in crop and quality, the flavour being intermediate between the varieties named. The good point in the preceding varieties is that compared with Black Hamburgh, Foster's Seedling, and others, under the same treatment, their flavour is much superior, while producing fairly good bunches and berries. Gros Colman is very unsatisfactory, but Madresfield Court is to be tried another season, and is expected to succeed well under this treatment. Several varieties of American Grapes possessing the "Strawberry" flavour are grown, of which Brighton seems to be

the best. The house devoted to these Grapes is that which formerly contained the Figs. It is unheated, the Vines being planted in a central bed and trained up the roof.

— **THE** signs of autumn are very apparent now in the changing and falling leaves of the trees. The **COMMON LIMES** in particular are in some places nearly leafless already. The varieties of *Tilia americana*, however, such as *pubescens* and *mississippiensis*, are still fresh and green, showing but few yellow leaves. The former of these two, which is occasionally seen under the name of *T. hybrida superba*, is a very distinct variety, with large, bold leaves, forming a handsome tree. The great defect of the common Limes, which are otherwise such useful town trees, is the early period at which they lose their leaves; and this renders the other varieties more valuable.

— **THE** Horse Chestnuts are also changing colour, and old Elms are losing their leaves fast. In striking contrast with these is the **MONTPELIER MAPLE**, *ACER MONSPESSULANUM*, which is still as fresh and bright as it has been all the season. The shining green three-lobed leaves are thick and substantial, the habit close and dense, somewhat like *A. campestre*, forming very compact neat specimens of moderate height. Another Maple retaining its leaves late is *Acer pseudo-Platanus opulifolia*, of dwarf habit, the head round and bushy, with small fresh green leaves. The purple Maple, *A. pseudo-Platanus purpurea*, is also attractive still. The Liquidambers are fast changing, and are becoming very beautiful in their varied golden and red tints. The richly coloured *Parrotia persica* is handsome, and the Virginian Creepers are draping many walls with autumn-tinted leaves.

— **IT** has been proposed to purchase the **HIGHGATE WOODS FOR THE PUBLIC**, and at a recent meeting of the Hornsey Local Board it was moved by Mr. H. R. Williams—"That the Board's solicitor be instructed to prepare a Bill for the next session of Parliament authorising the purchase by the Hornsey Local Board from the Ecclesiastical Commissioners of the wood known as the Churchyard Bottom Wood for the sum of £25,000, provision to be made in the said Bill for a grant of £10,000 from the fund administered under the City of London Parochial Charities Act, 1883, with power to borrow the sum of £15,000, the repayment of which with interest to be spread over a period of fifty years.' The resolution, after some discussion, was unanimously carried, and a committee appointed to carry out the details.

EXTENSION VERSUS RESTRICTION.

I HAVE a recollection of someone, I think "John Bull," writing a very sensible article on the old-fashioned and well-trained fruit trees, especially Pears, which at one time were to be seen in gardens, not exceptions, but common to most, if not all, and also to dwellings—tradesmen's, farmers', and cottagers'. I have an idea also that it was given as evidence of the extension system being ancient, and the restrictive system modern. I thought at the time that although root-pruning might be in its infancy, the restrictive system, so far as pruning the branches was considered, was inseparable from training. The restrictive system as we now accept it, is certainly, so far as the size of the trees is concerned, modern. If not originated, it was greatly encouraged by the practice and writings of the late Mr. Thos. Rivers, especially that part which related to restriction by root-pruning. That the extension trees in this sense were as fruitful and as satisfactory in the size and quality of the fruit and crop as dwarfs or espaliers on the dwarfing stock needs no particular exposition, inasmuch as the examples were treated the same—viz, the usual regulation of the shoots in July, cutting back breast and other shoots not required for extension to a few joints or leaves from their base, the object being to admit air and light alike to the fruit and spurs, to concentrate the future or midsummer growth on the fruit and buds desired to form fruiting ones—giving the crop of the ensuing season. It was not a case of arresting growth, for the simple reason that growth was already arrested, not by age, but by the completion of the annual growths, and the concentration of strength on ripening the fruit, the wood, and perfecting of bloom buds for next season. All growths not required for extension or filling space were cut away, which is restriction by pruning in the fullest acceptance of the term. The wholesale manipulation was, of course, contrary to Nature; the cessation of growth was natural, growth made with nucleus buds, depending on the elaborated and assimilated sap concentrated on them as to whether they became fruit or remained wood buds, but it was successful if the season continued favourable, as the continued year-after-year crops proved. But if the season proved wet the crop was poor, or perhaps nil, the nutriment transmitted by the roots becomes excessive, the atmospheric conditions unfavourable to evaporation, fresh growths are made, spur buds, instead of having the elaborated sap concentrated, are forced into wood, resulting in an array of hreastwood little inferior to that cut away at midsummer. Two descriptions of trees result, one making little growth beyond that needed for extension or the furnishing of wood for continued crops, the

supply of nutriment not in excess of the power of elaboration and assimilation, so that the essential buds had sufficient nutriment concentrated and stored.

The other description of tree makes a strong growth—much wood—the supply of crude food is excessive, there is no concentration of the elaborated and assimilated sap, no storing of nutrition, no transformation of wood into bloom buds; all is crude, gross, sterile. Summer manipulation of the growths only aggravates the evil tendency, causing a second growth little inferior in profusion to the first. Restriction in this case increases barrenness.

Let us look at the large tree—trees planted in borders and trained to walls in gardens or buildings. In planting a tree to cover a large space we have it on the free stock—i.e., the natural Apple or Crab, Pear on wild or perry Pears, Cherry on common Cherry, and Plums on the common free-growing sorts—hardy stocks adapted to the climate. They are fan or horizontal trained, and the pruning of that description that insures the form desired, the removal of parts not required, and the concentration of the food supplies on the crop and the essential buds or growths for future crops, securing to the tree the advantage of the shelter or warmth of the wall, alike for the blossom, the embryo fruit, and young growths as for the ripening of the fruit and perfecting the bloom buds of a future crop. The trees make annual progression, and they come into bearing in the second or third year from planting. They continue growing and fruiting until at length these so-called extension trees are such no longer, inasmuch as they have covered the allotted space and are as much grown afterwards on the system of restriction as Apple trees on the Paradise, Pears on the Quince, and Cherries on the Mahaleb. The trees may be Pears on the Pear stock trained to a west wall 24 feet high with a spread of branches of 48 feet. Marie Louise, Glou Morceau, &c., full-sized, and giving no need of pruning from year to year beyond shortening the foreright and other irregularities of growth in summer, shortening elongated spurs and thinning those where too crowded in autumn, nothing further beyond manuring being required to secure heavy crops of fruit. On walls 12 feet high, the trees 24 feet apart, just half the height and distance of the trees on the west wall, the aspect of the walls being south, east, and west, where Pears were equally fruitful of Louise Bonne of Jersey, Van Mons Leon d'Arc, Beur. é Diel, P.asse Colmar, Winter Nelis, Ne Plus Meuris, &c., but a monster of Autumn Bergamot, twice the space of the others, did not fruit. The kitchen garden, at least $1\frac{1}{2}$ acre of it, were run with espaliers, ends north and south every 18 feet the iron espaliers 6 feet 6 inches high, covered with Apple and Pear trees planted 24 feet, and these trees bore well, requiring no pruning beyond a shortening back of the summer irregularities, and removing elongated crowded spurs in autumn, but the varieties that required to have barrowloads of spray removed in summer to keep them at all presentable were simply fruitless. All were on the free stock. It was the same with Plums against walls, Green Gage St. Patrick (not distinguishable from Kirke's), Denbigh, &c., fruited freely, but Purple Gage was scant at bearing. Now, it was clear the trees in all instances were fruitful so long as the trees were extending, and afterwards when the supplies of crude material were not in excess of the demands of the crop and the leaves' power of elaboration and assimilation; but trees that make much summer growth could not endure restriction such as Aston Town and Autumn Bergamot Pears succeeded admirably as standards. This is a subject not taken into sufficient account by planters. Root-pruning in cases of this kind is not effectual. It checked growth certainly, but it did not induce a free-bearing tendency—the varieties in fact were not amenable to restriction either of the branches or roots, and it was a clear case of necessary extension, cutting the branches away and training fresh or young ones in their places; even the Purple Gage Plum in this way was restored to fertility. The soil was a silicious loam overlying gravel.

In the case of Apricots, Nectarines, Peaches, and Figs, the trees were equally large, the first three on Plum stocks, the Figs of course on their own roots. The culture of these fruits is to all intents and purposes extension; it is extension whilst the trees are forming, and extension after they are full-sized, in that there is a large displacement of fruited and old growths annually by young for future bearing, so that we get extension in the fullest acceptance of the term, notwithstanding that the trees are, as regards size, restricted to space and occupy its full limit. That such were healthy, fruitful, and long-lived need not be pointed out to those who remember fruit trees as they were seen in gardens thirty years ago. Orchards of standard trees were common to every cottage in rural districts. Farm houses not only had their orchards of healthy large fruitful trees, the boundary hedges of gardens were embellished and made valuable by standard Plum or Damson trees, the crofts and grass enclosures near the farmstead having vigorous fruitful Apple trees in the hedgerows; beautiful Keswick Codlins, Hawthornden, Cockpits, Robins (Northern Greening), Golden Russets, &c. The large tree system had its champion exposition in the "Gardeners' Assistant," first edition, by the late Mr. Robert Thompson, published nearly a decade later, or in September 1859. Thirty years, or say a quarter of a century's activity, had given an impetus to outdoor fruit culture such as it had not previously had, and I submit it has not seen in this country since the attention of the cultivator has been directed toward the small tree system.

We will look at the large tree system as it now obtains. What are the large trees like on the garden walls? Are the trees thriving, fruitful? No they are apologies for trees, with spray overtopping the wall enough to form a tree as large as that on the wall. Where are the Apricots on the front of the house (that I as journeyman trimmed and nailed of a summerevening) that bore hundreds, in one instance thousands of golden fruit in a season? The refreshing Cherries, the delicious Plums? All the

trees were allowed to extend; the branches grew from the wall, they gummed, gave no fruit, and died. The Pear on the gable was also allowed to grow from the wall; it is there now, with shoot a yard long, a thicket of wood, the fruit at the tip small and cracked. The tree has not been pruned for years, and cutting only made it worse. Glance at the orchard. Trees half dead, covered with lichen and moss, many bare places, fruit the exception, and what there is no bigger than Crabs. This is the state of affairs in nine out of ten gardens, and ninety-nine in a hundred of dwellings and orchards. There are exceptions! It is where a study of fruit-growing has been made—it is in the marketer's plot. The market man must meet the market, supply it with fruit up to a standard of excellence equal to any sent there. It does not do to grow fancy fruits, his trees must be good and certain croppers, the fruit large, of good appearance, and serviceable quality. He makes a selection of the varieties suited to the soil and locality, keeps nothing but what pays—old worn-out trees are replaced by young trees of proved new varieties of greater fertility or marketable value. He plants hundreds of one variety where another man plants a score or half hundred of varieties.—UTILITARIAN.

AN AUTUMN AFTERNOON AT VALE ROYAL.

THERE are few prettier railway journeys than that between Chester and Greenbank, a roadside station on the line of railway which cuts its way through the crown lands of Delamere Forest, through a purely agricultural district, for the chimneys of the salt works are not seen until nearer Northwich. Leaving the quaint old city of Chester, so full of historic interest and architectural beauty we take train from the Northgate station, and immediately a splendid panorama stretches out on each side. Rural villages, peaceful in their quietude; the homesteads in the nearer distance, like pretty pictures in gold frames, of well-filled stack-yards; the newly gathered harvest of the corn fields; the pastures are fresh and green with abundant herbage, and the cattle graze lazily undisturbed. Here and there the landscape is relieved by the wavy course of a running brook lined with Reeds wind-shaken, and tossing their beautiful purple plumes in the autumn breeze. The hedgerows here and there are made charming with the natural decoration of the wild Hop and Blackberries, and other rich drapery from the inexhaustible store house.

Then the line takes you through the most interesting part of the county, so full of silent secrets of the Roman period, when the Roman street ran through the Forest, now almost cleared by the woodman's axe; and whilst the iron railway runs through the heart of the wild woodland, the iron water way is laid beneath its surface to convey water pure from the reservoir of the hills down to the busy centres of Lancashire life. Now we get a glimpse of the forest as the train goes by through the glade between the Larches. Sleam Firs toss their heads in serious movement as the wind sweeps along, the silver trunks of the Birches stand like white wands among the sturdier stems of the Oaks, and everywhere there is a carpet of bracken and mossy growth. Altogether it is such a charming retreat as to set one longing that it might be possible to live the life of a kind of moral nineteenth century Robin Hood with of course his merry men, and for that matter, merry women too! "And you, I suppose, would be Little John" someone suggests with a suspicious flavour of roguery, which at once brings me back from the fields of fancy and leaves me face to face with more sober surroundings.

Reaching Greenbank at last one drives slow through a pretty piece of country, and a private road leads us to the Vale Royal, the seat, as every reader of the Journal doubtless knows, of Lord Delamere, one of the most famed places in the county to those who sing the praise of gardens. The park skirts the Valley of the Weaver, is well timbered, and the mansion is not only architecturally interesting, but the spot has a still deeper interest for the antiquary, for this is historic ground.

But we went out with the object of seeing the gardens, so we must seek the head gardener, Mr. Milne. Vale Royal seems somehow naturally exactly the place for Mr. Milne, and he seems just as exactly the man for the place. Perhaps it is that they have, so to speak, grown on together, and the connection of such long duration seems a quite natural combination now. Everywhere we see evidence of the effective originality, marked method, and industrious interest of the enthusiastic caretaker, who looks upon his flowers like children, and trains and educates his plants, so to speak, not as mere wood and bark, but as objects endowed with the responsive power of life, which certainly manifests itself here in a wonderful manner.

The first glimpse we get of the garden glory is a beautifully bright bank, graceful in arrangement, clothed with golden Elder, bright coloured Tropæolum, standard Pelargoniums, and Poppies, with the edges fringed daintily with Ricinus, the purple palmate leaves of which blend with showy effectiveness, and secure a peculiarly splendid richness.

The outer portions of the grounds skirting the gardens are natural hollows from whence, perhaps, marl may have been taken in the past. These have lent themselves to Mr. Milne's original treatment, and everywhere the hand of art is so well concealed as to suggest neither stiffness nor rigidity. Rustic bridges have been thrown over various parts of the grounds, quaint curves and pretty corners have been arranged, and belts of ornamental planting give a natural charm appropriately conceived and properly carried out.

We pass through the archway which leads into the garden, and here we find a most ingenious contrivance for hiling the coal house and stokeholes, none of which can anywhere be seen. The bank built above these necessary adjuncts is a dainty little rock garden of alpine growing quite naturally and freely. The eye is then attracted by a splendidly arranged border, at once rich in depth of colour, but not

gandy in vulgarity of ill-chosen shades. Lobelia, Alternanthera, Coleus, and Pyrethrum are arranged so delicately that the pattern strikes us as something differing completely from what we are accustomed to see, and this surmise is verified when we find on closer inspection that the lovely green border lines within which the pattern is worked is composed not of turf nor of Box, but of an Arenaria—one of the tiny-leaved creeping Sandworts, remarkably dense and compact, and possessing a depth of colour which cannot be well described.

We hurry on, passing much that I should like to describe, and we come to the flower garden, and flower garden surely it is, for the wealth of bloom and glory of colour is all-pervading. Pyrethrums, single Dahlias of every shade, Marguerites, Pentstemons, Sweet Peas, and so many more that possess familiar faces of the old friendships of the older fashion—and the best! We pass on to the more formal garden proper we may perhaps call it, for the sake of distinction. Here, skirting the mansion, we find a beautiful arrangement which, though carried out in the orthodox fashion of geometrical pattern, does not suggest the stiffness and formality which seem so frequently inseparable from this style of pattern planting. This seems mainly attributable to the originality which planned out the beds and their occupants; as, for instance, the outer line is a fringe of Cotton Lavender instead of the well-worn Cerastium; then there are the silver-edged Pelargoniums as standards, giving a lightness and softness of tone quite refreshing and charming, whilst further on a quite different effect is secured by the introduction of standard Pelargoniums, of masses of hot colour of purest scarlet, notable amongst which we see Star of Fire, with its big bunches of splendid bloom, its robust growth,

and Celosias, and anything else would have been a superfluity. It was simply superb. There were other plants of course, but the wealth of the bloom half hid them—Isolepis, Campanulas, Grevillea, and others. In the alcoves in the centre stand two splendid plants of Lasiandra, and the house was made the more effective by the introduction at short intervals of plants of Eucalyptus globulus. These plants are 20 to 25 feet high, and give a peculiar and novel charm, both of form and colour, which could scarcely be secured by other means. The soft green tint of the glaucous stems, and the slender grace of the plants themselves, complete the architectural suggestiveness as well as the decorative effectiveness of the whole. Nothing could be in better taste, and nothing, we are sure, could be better done.

But Greenbank lies some two miles away, and the September sun is already quickly finding its way towards the western horizon, so we take a hurried look at the kitchen garden, with its well-stocked borders and its promise of wonderful productiveness, and we betake ourselves to the return journey. As we leave the beautiful surroundings of this old Cheshire home and bid good-bye to our genial guide we cannot help thinking, "The blue apron is, after all, the best regalia if one has such a charge as Vale Royal."—JOHN EDMUNDS.

A REVIEW OF GRAPES.

I SEE from remarks under the above heading on page 291 that there is still some doubt about Mr. Taylor's two bunches of Gros Maroc shown at the Crystal Palace and Kensington shows. I, with two well known



Fig. 49—VALE ROYAL.

and healthy foliage. Here, running up to the full height of the Ivy-clothed wall, we see Hollies cut into hedges, which give a pleasing completeness to the corner, and provide sheltered beds between the spaces, and there at the gateway we see the Clematis clinging above the porchway with knobs of the rich red blossom of *Tropæolum speciosum*.

We have not half exhausted the treasures of the open; but time presses, and we take a turn through the fruit houses. There are marks of cleanliness, order, and proficient supervision everywhere. Peaches and Grapes looking luscious in their tempting luxuriance, and throughout this range—a continuous run of over 400 feet—there is not the jarring presence of a speck of dirt or sign of disease. In the frames outside we see in passing hundreds of Poinsettias, Calanthes, and in the open beds of Lilies growing on in healthy strength to take their places upon the stages of conservatory and corridors when the autumn show is over. The houses are filled with splendidly grown plants—Begonias, Orchids, Crotons, Ferns, and foliage plants of variety bewildering. But we must leave this department only just touched, as we must see the centre of attraction in more senses than one—the new conservatory standing upon ground fitted for its reception, kept for its due and proper display. The mass of colour which hurst upon us as the door is opened is simply bewildering. Celosia pyramidalis we never saw grown as they are here. They are to be seen in perfect symmetry, colour, and feathery perfection of every shade. Here golden plumes amid a forest of flame, there a magenta flower spike, as though fresh from the hand of the dyer. The house upon the occasion of our visit, was mainly filled with Pelargoniums

Grape exhibitors, carefully examined them. At first sight they appeared to be about as dissimilar as it is possible for two bunches of one variety to be. The largest one, which may be said to be the handsomest in the Show, appears to have been taken from the leading shoot of a strong young Vine, the wood of which appears to have been thoroughly well ripened last year. The other bunch had evidently been cut from a weak lateral that had not been well ripened last year, hence the difference in length of footstalk and general appearance. Upon looking over several other stands of Gros Maroc we could discern as great or greater differences between different samples as in that of Mr. Taylor's two bunches.—J. MCINDOE.

CHINESE PRIMULAS AT BIRMINGHAM.

BIRMINGHAM can honestly take credit for turning out superbly grown specimens of these plants at their autumn and spring exhibitions, and they always form considerable objects of attraction there. Much of this success and interest in the Primula may be set down to the successful hybridisation and culture adopted at the Sparkhill Nurseries, for many years in the occupation of the late Mr. Tomkins, who with his foreman, Mr. Rose, raised some fine seedlings, especially the well-known Princess Louise and Marquis of Lorne. Soon after the death of the late Mr. Tomkins the nursery was purchased by Mr. T. B. Thomson, the well-known seedsman of Birmingham, who still makes the Chinese Primula one of the leading plants grown there. Amongst the newer varieties there are just now some very fine specimen plants in 8-inch pots of two new Fern-leaved varieties

—the Fern-leaved Marquis of Lorne, a handsome, sturdy grower, and The Queen, both of which were raised here and are great acquisitions. Another splendid Fern-leaved seedling, The Emperor, quite new, and with bright pinkish salmon Marquis of Lorne flowers, is very fine. Older varieties, such as Marquis of Lorne and Princess Louise, are extensively cultivated.

Doubles also have much attention, one of the finest being Maiden's Blush, a beautiful semi-double Fern-leaved variety, and Miss Eva Fish, also a very fine variety. A. F. Barron, Marchioness of Exeter, Annie Hillier, Pooli, Alba magnifica, Purple King, Peach Blossom, and others are grown. Some new varieties recently bought in are coming on, of which a few notes can be furnished later on.

Strong bushy Chrysanthemums, naturally grown, are plentiful here, so also are Bouvardias and Tuberoses, and some lovely young specimen plants of *Celosia plumosa*, invariably done well here, are indeed glorious autumn decorative plants.—TRAVELLER.

ROSES AT THE NATIONAL SHOW.

A PRESS of important matter has given me scant time for anything but actual duties, and until lately "our Journal" has been hastily coned and set aside. Once only, when my blood was rather "up" at the murmurings of some small Rose-growers and the National, did I threaten to inflict on your columns a few lines, but it ended in a few unfinished thoughts that were thrown aside. Now, my old friend, "E. M.'s" paper on the Roses at the National touches me, and I venture to think that by this method of election you cannot arrive at a fair idea of the best Roses for a beginner. It is very interesting, but it really depends on the character of the season what Roses are exhibited. For instance, judging by this list, Mons. Noman should be obtained by every young exhibitor intending to win honours. I picture the youthful aspirant's regrets in the future, his disappointment at fine buds that refuse altogether to open because there has been rain. Duchesse de Vallombrosa again—which my good friend, "E. M." actually puts into the selected dozen—I have grown steadily for the last five or six years, and have never had even during the past dry season a single beautiful bloom. Even at its best it has looked as if some one had accidentally sat on it for a few seconds before discovering it. To me it is always splendidly full of promise, I know no Rose more so, but utterly devoid of performance. A marvellously strong stem, a most promising large bud; but when this expands it is inferior in size to many Roses less promising in their earlier stages. Its terribly strong abundant thorns are also an additional disadvantage. As far as I am concerned, being only a "small grower," I intend to discard it altogether, and I certainly cannot advise any intending purchaser of a dozen varieties to order Her Grace, especially with Baroness Rothschild and Merville de Lyon already deservedly in the dozen.

Another, a great favourite of mine, Camille Bernardin, surely is far higher than its merits actually deserve. I am very fond of it, the perfume is delicious, and the Rose itself very charming, especially some of the autumn blooms. Of Etoile de Lyon, having now grown it four years, I have never seen a respectable bloom, rarely one that opens at all. I gave away several plants last year, and shall get rid of more this. It is with me a first-rate grower, and *voilà tout*. "E. M." does not put in Catherine Mermet. Certainly this year I have not cut from any of my Teas blooms that gave me greater pleasure than this exquisite gem. Ten or a dozen, morning after morning, each fresh bloom as lifted up, appearing more exquisitely charming than the last.

I would endorse all the good opinion of Ulrich Brunner that Mr. B. R. Cant has given. It is in every way good, robust, a free and constant bloomer, large, yet not coarse, one of the greatest acquisitions we have had of late years. Violette Bowyer has disappointed me till this year. But where, oh, where, is the queen of H.P.'s in my friend, "E. M.'s" list? It has made me think of our old friend Mr. Radcliffe, who never would recommend Marie Baumann because she hung her head. But surely she should be in every dozen or half-dozen or less selected Roses. In form equal to any, in numbers of blooms rarely surpassed, fairly hardy, its only drawback in the exhibition stand being the weakness of stem. I cannot understand her omission.

Lady Mary Fitzwilliam is a beautiful Rose, but thus far with me she utterly refuses to make any wood. Gloire Lyonnaise has flowered with me this autumn. I think, though it can only by a great stretch of courtesy be called a yellow Rose, that it is still an acquisition, especially if cut early.

Most interesting as is this form of table, I must give my humble opinion that as a guide in the selection of Roses it is altogether misleading. It will tell to all Rose-growers years hence what kind of season it was, but this is not a reliable plan on which to advise an intending Rose buyer what Roses he should purchase, at least such is the humble opinion of—Y. B. A. Z.

BANBURY ONIONS.

AMONGST Onions for spring sowing the Banbury is a general favourite, and after trying many types of them I conclude there are several forms. The true variety is a useful Onion, but some of those bearing the name are quite unworthy of it. In many instances I have found red, white, and grey bulbs amongst them, some being elongated in form while others are globular; but the true Banbury is round and flat, of regular form, the colour being a bright golden straw, the neck small as a rule, and the roots very few and fine considering the size the bulbs attain. I forward you a bulb, which represents the type of Webb's Banbury. It was grown

with hundreds similarly large without any special attention. Indeed, with the exception of Dutch hoeing to keep the weeds down they received no other attention from the time of sowing until they were harvested.—J. MUIR.

[The specimen is exactly as described by our correspondent—very large, very flat, and of a bright clear straw colour.]

"THE HOME FOR FLOWERS," SWANLEY, KENT.

I HAVE just returned from a run through England, north and south, and much of Ireland, and I am trying to collect my confused ideas, for the mind does get dazed when beauteous objects so many and so varied constantly pass in review for days and weeks at a time. One of my most agreeable recollections was our visit to Mr. Cannell, sen., and the "Home for Flowers" at Swanley. I was accompanied by Mrs. Malcolmson's head gardener, of Minella, near this town, Mr. John Crehan. I propose, so as to avoid repetition and unduly trespassing on your columns, to divide the notes I was tempted to make as follows:—

We proceeded by the London, Chatham, and Dover line from Victoria station; but the "Viaduct" or Ludgate Hill would be equally convenient, the distance being only fifteen miles. The nurseries are situated on a warm southern slope of about twenty acres, a large portion being covered with upwards of a score ranges of glass, one half being on each side of a central avenue. In general terms it is bounded on the south and east by the public roads, and on the north by the aforementioned line of rails, thus having unusual facilities of transit. An unlimited supply of water—there are hydrants all over the nursery—and a manure dépôt adjoining are further advantages that practical men knowing something of Kent in summer can appreciate. The soil is a fine yellow loam, readily yielding to cultivation, and with the treatment received evidently the most suitable for the object intended. All around are fruit and Strawberry gardens, enabling one to realise the phrase, "Kent is the garden of England." All this we could see from the higher ground near the Swanley station. We were fortunate in finding Mr. Cannell, sen., at home, though his sons or foremen are always very pleased to see visitors and accompany them around; but for floral enthusiasm, love for his pets, and a keen eye for colour and effect the founder is remarkable.

DOUBLE ZONAL PELARGONIUMS.—I should have liked to have referred to the seed department, the offices, the despatch and cut flower houses, in which orders are executed for all parts of the world, &c.; but possibly all this has been told in your columns before, so after passing a number of propagating and trial glass ranges we enter the double Zonal show house, 100 feet long by 12 wide. I mention these dimensions, as I believe with a few exceptions the score or so of houses are uniform. The first thing that strikes a visitor for the first time is the piping for maintaining a steady temperature being above and not below. Here we are assured at Christmas and through the winter this house is still gay. Special varieties and young plants specially prepared, grown, and hardened are suitable for this purpose, as shall be noticed further on, and can at all times be here cheaply procured. To have doubles in perfection in winter it is in addition necessary to have the temperature as near 65° as possible, and to maintain a buoyant atmosphere a small-bore additional pipe in front of the stage is then utilised. I first glanced through to see the new acquisitions, and among the whites Le Cygne still comes first. Rather curious that all at once, both at home and in the United States, two raisers, Messrs. Miller and Thorpe, should succeed in getting such sterling novelties as Spade Guinea and Progression (syn., Australian Gold), orange scarlet, with distinct shades of yellow; some day a pure yellow seems probable. Blanche Perfecta received a first-class certificate as an improvement on Le Cygne; but, though I may be singular, I prefer the old love to the new. Going over the house a second time to select two or three in each class of colours of superior merit in size, colour, habit, and floriferousness, we noted of scarlets or shades thereof, Kobus, Fritz Goebel, and Mr. Henry Cannell, one of Thorpe's American introductions, and that we noticed as a favourite in Covent Garden. Of pink doubles I have a fancy still for Lord Mayor, it flowers so freely, and with so low a temperature, though Madame Thibaut has surpassed, only to be itself exceeded by Roseum Superbum. Tendresse seems to stand first of the rose-coloured doubles, to be followed close in popularity by Lord Derby and Jules Simon, lighter pink. Of those with orange or salmon colours I noted Belle Nancienne, Carillon, and James Markland; while of lighter tints of the same character, and that all should have, were Danie, Earl King, and Althæa; of purples, Etendard and M. l'Abbé Jalabert will be desirable additions, while for small pots and unending bloom grow the little beauties Comtesse de Tanneberg, Princess Stephanie, and Jeanne Canot.

SINGLE ZONALS FOR POT CULTURE.—I may remark that the number and size of the trusses surprised us when we noticed that none of the pots exceeded 6 inches in diameter, and some were only 4½, but on inquiry ascertained the only stimulant they received at long intervals was a manure sent out by the firm. If we were struck with the glow and brilliancy of the double Zonal Pelargoniums, what can describe the dazzling intensity of the singles? They continue to improve, but many of the old ones will long continue in public favour, though neither the pips or trusses may be so large as the new. Of the former comes Favourite, cerise scarlet; Omphale, velvety salmon; Mrs. Naish, oculated, white crimson centre; Lady Sheffield, violet pink, largely bedded out this year; and Eureka, a robust-growing white, useful in winter. Of the newer varieties that all should grow as distinct advances, I place first Mr. James Douglas, immense crimson truss, 9 inches across. Of the same character, magenta colour, is Amy Kohn. Among single whites,

peerless, is Her Majesty Queen of the Belgians. I have sunk this in pots outside in my beds this summer, and of all others similarly treated the white has remained pure. Snowball is said to do the same, but I have not tried. Of rose colours Edith George finds it difficult to displace in public favour the fine pleasing older beauty, Kate Greenaway; and similarly of pink shades, Mrs. Strutt only comes second to Enrydice. Of salmons, there is no hesitation in placing Lady Chesterfield first and best, though Fanny Catlin is still an old and good variety. The blush and oclated section has many representatives, such as Edith Little, Mary Caswell (dwarf habit), and perhaps best of the class, Norah, violet blush, very large truss. Lastly, the most numerous section was the scarlet and magenta scarlet, all with blooms perfect circles, and in most cases with flat overlapping petals. I noted only Dante, magenta purple; Plutarch, scarlet, white eye; Scarlet Cloth, Swanley Gem, crimson shaded salmon; and lastly, Mr. H. Cannell, grand truss.

DOUBLE IVY-LEAVED ZONALS.—A short time since this class was very limited, now they require a separate house. Madame Thibaut, the prima donna of last year, has to yield this to Fürstin J. Von Hohenzollern; and so grand strides are being made every year. A capital half-dozen doubles would be Le Printemps, rosy pink; Hanoi, reddish salmon, best noted; Daniel Brothers, magenta; Emille Lemoine, orange scarlet; Mignon, salmon; and Abel Carrière, magenta maroon; but I must add that beautiful light-coloured variety Jeanne d'Arc. These evidently have a bright future, and wherever we found them hedged—and the instances were numerous, the tall-growing being pegged down—they added immensely to the effectiveness of the arrangements, and caught the eye at once—e.g., in the London parks, Hampton Court, Phoenix Park, Dublin, and numerous private gardens. Their great fleshy leaves make them indifferent almost to dry weather outdoors, so that owing to their adaptability (I am including the singles), their culture is likely to be much extended in the future.

DOUBLE TUBEROUS BEGONIAS.—If Swanley has hitherto been remarkable for Pelargoniums in their several sections, judging by present appearances, Tuberous Begonias will be the flowers of the future there. So great is the improvement, and so steady the demand, that Messrs. Cannell devote eight houses to their growth, with numbers of heated pits for propagation, while two large houses alone are devoted to growing for trial. What would have been considered splendid blooms a few years ago are ruthlessly "rogued out" and consigned to the waste heap now. A new seedling must have some special quality to recommend it, either in size, habit, or colour, and be a distinct advance on older varieties, or away it goes. A special hybridist, with a numerous staff, is here employed, having this for a primary object. I have extreme hesitation in naming any varieties, as others almost equally good are here by the hundred, and in the case of some favourites, as the beautiful Rosamonde, rosy pink, large and very double, for which the demand is great, may be counted by the thousand. However, I must ask you to allow me to note a few that particularly struck me. Among the newer introductions, Susanna Hachette, of Crousse, comes as one of the best rosy pinks—of erect habit. Perhaps I should have placed first, Hon. Mrs. Plunket and Picotee—this last receiving a first-class certificate, and that all Begonia connoisseurs should have as one of the best novelties—raised here. Eupon Von Erfurt, new, crimson orange, fine shape. Gloire Claremont, peculiar in not being merely double but treble, a splendid rose crimson. Dr. Baillon, deep rich salmon, had a dozen large erect blooms on a small plant that had been in flower for two months. Of much the same character were two more of Crousse's, M. Paul de Vicq and Louise de Goussaincourt, light salmon and rosy carmine respectively. Coming to those of longer established reputations, M. Malet and Eugénie Lequier are fine among orange scarlets; while very curious, with notched and serrated edges, are Clovis and Esther, the guard petals of the latter being rosy crimson. Before passing from the orange scarlet, Louis Bouchet must be recommended as a very free bloomer, with erect flowers and fine habit; furnished all over. Major Studdert (new), orange rose, deserves notice. Yellows, like whites, that are really good, are still few. The newest and best seemed to be Pavilion Jeanne; after that, Gabrielle Legros. The last is one of the gradually increasing class with several centres; in fact half a dozen doubles rolled into one. As I mentioned whites, Octavie, pure white, first-class certificate (if I remember rightly), deservedly comes first, then Fleur de Thé and Lucie Lemoine, and for habit and floriferousness, Virginalis. If two more are desired Madame Vincenot and Antoinette Guérin, creamy white, are capital. Of deep red or crimson I cannot remember seeing anything yet finer or so large as Goliath. We were assured the enormous blooms had been on the plants five weeks, and are fresh still. Fine for a basket would be M. Duvivier, rose crimson. The rosy pinks are much esteemed, and one of the best we saw seemed Madame Castaignez, virtually hid with bloom. I have already mentioned Rosamonde, and will but add Madame Arnoult and Flamme de Punch. Lastly, of salmons, I would place first Mr. Poë, with a shade of china rose, and then the better known Marie Crousse, Jules Lequin, and then Madame Galle, more recently introduced, concluding with M. Truffaut.

SINGLE BEGONIAS.—Having been tempted to note double Begonias so fully, less space remains for singles, more especially as Messrs. Cannell have now such enormous numbers, and in most instances of such superior quality that naming becomes impossible except some great novelty. Hybridising is constantly going on, one of the objects aimed at being rotundity and massiveness of flower, so that almost circular flowers are being gradually attained. Narrow side petals are now discarded, and petals of thin papery texture are rarely met. I must not forego noting the following new introductions—Earl and Countess of Bessborough, shades of yellow, and so distinct as to receive first-class

certificate; H. and Mrs. H. Cannell, rose scarlet and rose respectively; King of Begonias, Midson's Favourite, and W. E. Gladstone, all distinct advances, and that when in commerce all will so admit. While we visited one of the best whites yet introduced, of immense size and substance, was named Helena Malcomson, a fair lover of flowers near this town, while a lovely rose-pink of wondrous size was associated with the name of one of your correspondents.

CARNATIONS, PICOTÉES, AND PINKS.—These are all specialties, and the extent of the growth may be inferred from two acres being full of plants layered, most of them even rooted then, while for cutting one house was full and in bloom of the beautiful new yellow Carnation Pride of Penshurst. This blooms freely outdoors, and indoors can be had in quantity at Christmas. All the newest and best varieties, especially those raised by Mr. Dodwell, are here in fine condition, besides the old kinds, the trees, and those best suited for borders.

MISCELLANEOUS.—We next reach the Verbena house, and I took notes of the newest varieties, and was very much struck with the size of the trusses and the grand colour arrangements. Then in succession came the Fuchsias, single and double, finished blooming with few exceptions, and containing all the recent introductions, such as Generals Gordon and Roberts, Ixion, &c. Of Lee's newer varieties, among the darks was James Welch, Mr. F. Bright, and Emperor; of the lighter corollas conspicuous were Diadem, Lee's Excelsior, and Nellie, all likely to be much grown by-and-by. One of the most important houses for autumn blooming was the Salvia, just coming to be brilliant. The colours varied from rose to scarlet, from blue to purple, striped, and curiously intermixed; some tall and others dwarf, and subsequently, when we went out into the nursery proper, numbers were planted out to retard for late blooming. Then in a house Bouvardias, single and double, were most refreshing, a peculiarity of their culture here being that they are grown rather as cold greenhouse than stove plants. The Petunias seemed to be declining, some of the best and most distinct being marked as seed bearers, while others had been hybridised to secure a desired point of excellence. We were next ushered into perhaps the most brilliant houses of the whole, so far as richness of foliage, deep delicate rich tinting of blooms, and the surprising size and forms and numbers of flowers can testify—I mean the Gloxinia houses, of which there are three. No word painting could give an adequate description, so after a hurried run through the propagating houses, the two new Chrysanthemum houses building for show purposes, and a peep at the numerous pits and frames, we are in the open air with acres of flowers on every side. Any one square would require a page of the Journal, but as I have already exceeded my most sanguine intentions in reference to this intrusion I merely name the thousand odd varieties, distinct, of Chrysanthemums, all the Dahlias worth growing, new and old. Mr. Rose and Lady E. Dyke (new) had first-class certificates I see within past month. Antirrhinums, Asters in variety, splendid; Gladioli, several acres of Roses; Lilies, Pansies and Violas, Violets, Pentstemons, and the whole Primula family, especially Polyanthus, &c. Feeling the inadequacy of this reference, yet conscious of the demands on your space, I here finish, expressing our acknowledgments for the great courtesy of Mr. Cannell, his family and staff.—W. J. MURPHY, *Clonmel*.

THE NATIONAL ROSE SOCIETY.

DURING the past season (of which I hope to give my usual review very soon) one subject was frequently brought before me in the north by both amateurs and professional growers—viz., the offering of a challenge cup or trophy for the Provincial Exhibition. It has now become recognised that the intention of that Exhibition was to give northern growers the opportunity of exhibiting with some hope of success, and their complaint is that they are virtually excluded from any hope of obtaining that coveted prize. It may be replied that the amateurs' prize was once taken by Mr. Whitwell from Darlington. True, but that is a thing which is not likely to occur in a lifetime, and anyone who knows anything of northern Roses knows that it is a forlorn hope which a grower has to lead when he enters in the first week of July into competition with the Rose growers of Essex, Hertford, Berkshire, or Devonshire, and that some opportunity should be given to him later in the day to try his mettle. The nurserymen's trophy has been always awarded to southern growers, having been taken every year except one by Mr. B. R. Cant of Colchester. The amateurs' has never gone farther north than Essex except in the one instance named, having gone to Devon, Hereford, and Essex. I would therefore suggest, in accordance with the requests made to me that I should ventilate the subject, that endeavours should be made to provide subscriptions from each section of exhibitors, and I can only say if it will facilitate matters that I shall be very happy to receive names or contributions. It should be, I think, understood that it is only to be competed for by those living beyond the centre of England. A line should be drawn across, defining what is to be considered northern, and I suppose it would be necessary to make a special class for it; but these details might be left to after consideration, and I suppose the correct thing would be to offer the cups or trophies to the Committee of the National Rose Society in the same way as was done with the present trophies or with cups given by individuals. I do not in this instance write as Secretary of the Society, but simply in my private capacity as a

lover of Roses. Let me say, too, that while I think the competition ought to be confined to the north, growers or lovers of the Rose from all parts might be invited to contribute.—D., Deal.

OCCUPATION OF GARDENING.

[Address by Mr. E. J. Baillie before the St. Mary's Horticultural Society, Chester, 1886.]

LAST year I was privileged to speak to you upon the cottage garden and its relation to thrift and social economy. I then pointed out that the necessities of life could be made to flow to us through three channels—the bakery, the milk house, and the cottage garden. Had I chosen that topic for my remarks this year I should have been tempted to add a fourth channel through which we might as fitly receive a luxury, and that channel quite in keeping with the rest would be the bee hive; so that you see round the cottage home a veritable Canaan—a land flowing with milk and honey.

But this year I wish to speak upon the importance of gardening as an industry, not only in its bearing upon social life, but also upon the national economy. In these days of stern agitation in matters connected with the laws affecting the possession and management of the land, it is well for us to see that whoever has the charge of the soil should recognise that they are not engaged in an occupation of little moment, but from every point of view their time rightly spent in the garden is of the highest importance to themselves and to the community at large.

Dean Swift has said, "Whoever can make two ears of corn, or two blades of grass, to grow upon a spot of ground where only one grew before, would deserve better of mankind and do more essential service to his country than the whole race of politicians put together." Now, Dean Swift here may be speaking more from the heart of a poet than from the mind of a politician, but there is in his assertion the elements of a great pervading principle, of an ever-abiding truth, that right agriculture—and by agriculture I mean land cultivation, whether called garden or farm—is of the first importance, for the profit of the earth is for all—the king himself is served by the field. We are somehow ready to pay homage, to wave the plumes and chant the songs of victory when the soldiers return from the fields of conquest. I do not want to say a word to cool your ardour for the bravery of those who defend the land from the invader, but I want to put in a claim for those who till the land for the maintenance of its peoples. By all means pay your tribute to the conquests of the spear if you will, but rightly understood, the conquests of the spade are a greater glory. All the health of the world, all the wealth of the world, yea, all the life—temporal life—of the world are due to the conquest of the spade and the plough. It is not needful to put the matter into such sharp contrast. We need not make comparison between the arts of war and of peace. Let us take another view. In a large city people are apt to lose sight of the sources of things by the complication and multiplication of detail which divides them from that source. The sources are lost by the infinitude of resources. I do not know whether I may be able briefly to make my point clear. The world is not fed by its factories, but by its farms and gardens. The land does not grow looms—there could be no mills if there were no meadows, no grand city offices if there were no quiet country gardens. Life is not picked up in the streets of the city—it may, alas! be lost there—but is grown and gathered in the open, away from the smoke and the stones, and it has to pass through so many hands and processes that some excuse might reasonably be urged for the ignorance of the little lady who, familiar only with vegetable forms as they were served at table, expressed her intense amazement when she found that Cucumbers did *not* grow in slices. Just trace the maze: The gardener grows the produce—the dealer buys—the carrier conveys to other centres—railway carters shift it about—the trader purchases at its destination—the shopkeepers divide and bundle it up—the message boy delivers it—the cook prepares it—the waitress serves it—that is a tolerably complicated process, and can we wonder that the important first agent—the gardener, away in the quiet country corner, working early and late, is overlooked and forgotten? yet he is the important element after all.

But there is yet another point I wish to urge—the education of the garden. William Cobbett, in his "Cottage Economy," tried to point out the importance of the sphere in words somewhat as follows:—"I have written to show, that while from a very small piece of ground a large part of the food of a considerable family may be raised, the very act of raising it will be the best possible foundation of education to the children of the labourer—that it will teach them a great number of useful things—add greatly to their value when they go forth from their father's home—make them start in life with the best possible advantages, and give them the best chance of leading happy lives." This is high praise, but I venture to think that Cobbett has not one whit over-rated the advantages, whilst he has barely touched upon the pleasures of such an education. This subject is so full of charm that, approached from any side, it opens out into new ways where we might find fresh food for thought. Then, further, it is a progressive occupation: every year brings us face to face with improved methods, with new forms of beauty and utility, with added wealth of kind and quality from the luscious treasures yet hidden in that exhaustless cornucopia which the gardener holds aloft and shakes, that the people may pick up from the earth the good things which spring up in prettiness and plenteousness because they have been first given from the open Hand which giveth to all men liberally, and through whom life, movement, and being must inevitably come, whether man may so regard it or not.

[[I have dwelt only upon the practical side of the question—that side which is most likely to concern us upon an occasion of this character, but it has the charm of the other side for those who need it. It has an occupation identified with the most ancient histories. We need not here perplex ourselves by trying to fix the exact site of the Garden of Eden, but we may reflect upon the fact that the earliest history of man associates his existence with that of flowers and fruits, and places his home in a garden. The attention of the earlier ages appears to have been directed chiefly to the cultivation of fruits—I mean rather than to that of vegetables and minor matters. In Jacob's time the Vine, the Fig, and the Almond were objects of garden cultivation, and when man became less of a wanderer in enclosed lands and cultivated trees; and in these early days of the

world's history we find the Patriarchs set us an example which has been often urged, and which has often caused me to wonder why it could not now be followed—namely, that of planting fruit trees in the hedgerows. I anticipate your first objection, I think, in the thought that the boys or the beggars would pluck the fruits and appropriate them. I do not want to defend such obviously wrong action, but I would just point out that they would at least have the benefit of the fruits, and they might as well have the nourishment and pleasure of health-giving fruit as the nausea of Crabs or the poison of Nightshade. But that by the way. Coming on down the ages of time we are reminded of the vineyards and orchards of Solomon—the hanging gardens of Babylon, associated with the name of Semiramis—the gardens of the Hesperides and of Adonis; and so the history of the past is full of the aroma of the garden and the grove. We dare not, perhaps, take a still higher flight in the regions of myths and poetry. How in the mind of the ancients the Oak was consecrated to Jupiter—the Poppy to Ceres—the Rose, the Myrtle, and the Apple to Venus; and how to them the favourites of the gods were changed into trees or flowers.

That we will leave for some other time when we are not so busy with shows and show prizes. Let us, in conclusion, come down from the heights and take our stand again upon the more sober level of the platform of the earth about us to-day. We do not wish to sit in the lap of luxury, but we would rather be active in the courts of health; for the Sybarite is a stranger to either pleasure or peace. Give us the food convenient for us—the home bright and cheerful, with wife and children clean and kind and happy—simplicity of life and tastes—that is the key which alone may unlock the door to the secret chamber where peace dwells—and in that spirit one of our poets has beautifully said the truth—

"Oh, Luxury! thou cursed by Heaven's decree,
How ill exchanged are things like these for thee;
How do thy potions, with insidious joy,
Diffuse their pleasure only to destroy!"

If I have said one word to encourage anyone here in the occupation he has taken up in his leisure, I shall be pleased. An old proverb says, "Whatever is worth doing, is worth doing well." I have tried to prove to you that gardening is decidedly worth doing. I hope there is evidence enough before you to-day to show that it is worth doing well. Any man who holds land and grows but weeds is doing an injustice to the earth, to himself and to the community. Careful cultivation, a selection of best kinds, patient care, and watchfulness, that, I think, is the order in which the gardener may reap his double profit of peace and pleasure.

In encouraging effort of this kind the energy and enthusiasm of our indefatigable Secretary, the inspiring encouragement of the Rector and his helpers, so well exerted, will be amply rewarded, when in the morning and the evening the footsteps of the people are directed, not to the door of the public house, but to the gate of the cottage garden.

CHRYSANTHEMUM LA VIERGE.

THE accompanying flower of this excellent variety was exhibited at the Leeds Paxton Society's meeting on the 25th ult. by Mr. Townshend, gardener to the Hon. Parsons, Birr House, Gledhow, Leeds. I observe in your remarks about the National Chrysanthemum Society's September Show, held at the Westminster Aquarium, you say: "There are very few large early flowering Chrysanthemums that can be properly placed in comparison with Madame Desgrange and G. Wermig." As you did not mention La Vierge, I presume it was not exhibited there; otherwise, I think it would have been found worthy of notice. Its chief points of merits are pure white colour, dwarf and compact habit, and most profuse flowerer; but of course to obtain flowers equal to this specimen would require well growing and liberal disbudding. I may mention that I have now several hundreds of plants in flower, which I find most useful, either in plants for decorative purposes or for producing abundance of white cut flowers.—R. FEATHERSTONE, *St. Ann's Nursery, Kirkstall, Leeds.*

[La Vierge was exhibited at the National Chrysanthemum Show, but none of the blooms was equal to the specimen before us, which is 3½ inches wide and 3 inches deep; nor is this equal to many examples of Madame Desgrange at the Show in question, some of which were 5 inches in diameter.]

CHRYSANTHEMUM NOTES.

THE fast-swelling plump flower buds, and I might add the equinoctial gales that are periodically such a source of danger to them, tell us plainly that the Chrysanthemum season is once more approaching, and I have every reason to believe that it will be a most successful one. The weather throughout the season have been very favourable for the growth of the plants, and although there is a sign in some quarters of the flowers being a little earlier than usual, there is abundant evidence that there will be no lack of quality throughout the exhibitors. This is as it should be: the extra experience and the introduction of newer and improved varieties all tend to that end.

The series of practical articles on the cultivation of our autumn favourite, contributed to your pages by Mr. Molyneux, have been well timed, and no doubt have been a great assistance to many cultivators. Young beginners now have every advantage over the past generation, who had, in a great measure, to find their way, and to whom secrets were divulged only as the greatest favour, or as compensation for premium paid. Thanks to the free and open spirit of the horticultural press, and the more general and applaudable inclination on the part of its increasing number of contributors to impart knowledge, practical information is now spread abroad for the general benefit.

Without detracting from any of the others, the last two or three of the series will prove doubly valuable to cultivators, exhibitors, and all who

have to take part in the public competition at Chrysanthemum exhibitions now becoming so general. The article on judging, page 267, I consider one of the most interesting in the whole series, and ought to be well read by all competitors and adjudicators. The method of judging by points and marks I consider the correct one, and ought to be universally adopted in all close competitions. I have always been a strong advocate for depth in a flower. It is a greater criterion of good cultivation than mere size in diameter, hence I was pleased to see Mr. Wright place such weight on the depth and solidity of blooms. I was rather disappointed at not seeing anything about smoothness and shape of petal, or florets, embodied in the article. Without a perfectly smooth petal I am well aware we cannot get finish in the proper sense of the term, although a bad-petalled variety might be finished as good as cultivation and dressing can make it. My idea of a perfect petal is found in the smooth ivory florets of the Venus, and also in some of the Queen family, and in Mrs. Heales and Princess of Wales. Contrast a petal of White Venus with the thin and somewhat jagged edges of Jeanne d'Arc as it often comes, and the quality and effect is very apparent. Some varieties have very forked or stringy petals, as in the case of Jardin des Plantes and the bronze sport from that variety, which is very objectionable, and flowers with these defects ought not to be used if possible. I should like to take this opportunity of congratulating Mr. Molyneux on the completion of his work. No one has appreciated the articles and the feeling that prompted them more than myself, and I feel sure that their contents are highly valued by your readers, and I, for one, shall be much surprised if the practical knowledge thus early and effectively made public does not bear fruit in the higher quality of the exhibits that I anticipate will be seen in the coming exhibitions throughout the country.—C. ORCHARD, *Coombe Warren*.

I HAVE grown Belle Paule for the first time this year. The plants grew well from the start, rivalling Fair Maid of Guernsey in height and substance. They set good buds early in August, which I was afraid to "take," so I run the shoots on to the next bud, but when I could just see the break the end of the shoots commenced withering, and I shall not have a flower from the two plants. Can anyone tell me if it is a peculiarity of that sort, as no other sort has ever done so with me? I notice in the catalogue of the National Society that Mdlle. Madeleine Tezier is classed as a Japanese, Minnie Chaté as a Hybrid (Japanese) Anemone, Emperor as a large-flowered Anemone. Mr. Molyneux selects, and has well shown, Mdlle. Madeleine Tezier as a reflexed; Minnie Chaté he selects as a large-flowered Anemone; and a stand of large-flowered Anemones was disqualified at the Crystal Palace Show last year through containing Emperor, which was ruled a Japanese Anemone.

It seems to me that whoever exhibits any of these three varieties runs the risk of being disqualified in whichever class he puts them in, while to leave out Mdlle. Tezier from a stand of reflexed might make the difference between winning and losing. I do not find any rule binding societies which are affiliated to the National to their (the National) classification, or even binding their own judges to it, except in the case of synonyms.

I hope Mr. Molyneux's valuable articles will be published in the form of a book.—CHRYSANTHEMUM.

[We have reason to believe they will be so published.]

BIRKENHEAD'S BEETLE TRAP.

WE give prominence to this simple article because we have recently had conclusive evidence of its great efficiency. It is not only an excel-

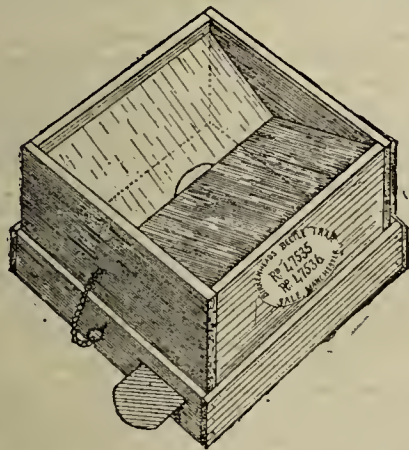


Fig. 20.

lent means of diminishing the numbers of beetles in dwellings and glass structures, but of crickets and cockroaches. The proprietors say:—"These traps were invented by us for use in our Fern houses, and having proved successful to a degree far beyond our anticipation we are now manufacturing them on a large scale, that all who are troubled with these pests may have the long-desired means of exterminating them at a small cost. In a short time, by using several traps, we succeeded in catching in our Fern houses over 5000 cockroaches, crickets, and woodlice, of all sizes, from very small to very large ones. We are continually having evidence of the utility of the traps in customers who have tried them sending for more for themselves and their friends, in addition to which we hear many reports from those who have caught large numbers (often 100 to 200) cockroaches, &c., in a single night." We are not in the least

inclined to question the accuracy of those reports, since we have caught upwards of 2000 beetles and crickets in one of these traps during a period of ten nights, and that is our justification for recommending this cheap article to all whose premises may be infested with the pests in question.

THE PAST HISTORY OF EXISTING PLANTS.

[An address read before the British Association by William Carruthers, President L.S., F.R.S., F.G.S.]

(Continued from page 305.)

BEFORE passing from these Egyptian plants I would draw attention to the quality of the cereals. They are good specimens of the cereals still cultivated. This observation is true also of the cultivated grains which I have examined, belonging to prehistoric times. The Wheat found in the purely British portion of the ancient village explored by General Pitt-Rivers is equal to the average of Wheat cultivated at the present day. This is the more remarkable, because the two samples from the later Romano-British period obtained by General Pitt-Rivers are very much smaller, though they are not unlike the small hard grains of Wheat still cultivated on thin chalk soils. The Wheat from lake-dwellings in Switzerland, for which I am indebted to Mr. J. T. Lee, F.G.S., are fair samples. My colleague, Mr. W. Fawcett, has recently brought me from America grains of Maize from the prehistoric mounds in the valley of the Mississippi, and from the tombs of the Incas of Peru, which represent also fair samples of this great food substance of the New World. The early peoples of both worlds had then under cultivation productive varieties of these important food-plants, and it is remarkable that in our own country, with all the appliances of scientific cultivation and intelligent farming, we have not been able to appreciably surpass the grains which were harvested by our rude ancestors of 2000 years ago.

In taking a further step into the past, and tracing the remains of existing species of plants preserved in the strata of the earth's crust, we must necessarily leave behind all certain chronology. Without an intelligent observer and recorder there can be no definite determination of time. We can only speculate as to the period required for effecting the changes represented by the various deposits.

The peat bogs are composed entirely of plant-remains belonging to the flores existing in the regions where they occur. They are mainly surface-accumulations still being formed and going back to an unknown antiquity. They are subsequent to the last changes in the surface of the country, and represent the physical conditions still prevailing.

The period of great cold during which Arctic ice extended far into temperate regions was not favourable to vegetable life. But in some localities we have stratified clays with plant-remains later than the Glacial epoch, yet indicating that the great cold had not then entirely disappeared. In the lacustrine beds at Holderness is found a small Birch (*Betula nana*, L.), now limited in Great Britain to some of the mountains of Scotland, but found in the Arctic regions of the Old and New World and in Alpine districts in Europe, and with it *Prunus Padus*, L., *Quercus Robur*, L., *Corylus Avellana*, L., *Alnus glutinosa*, L., and *Pinus sylvestris*, L. In the white clay beds at Bovey Tracey of the same age there occur the leaves of *Arctostaphylos Uva-Ursi*, L., three species of Willow—viz., *Salix cinerea*, L., *S. myrtilloides*, L., and *S. polaris*, Wahl., and in addition to our alpine *Betula nana*, L., the more familiar *B. alba*, L. In beds of the same age in Sweden, Nathorst has found the leaves of *Dryas octopetala*, L., and *Salix herbacea*, L., this being associated with *S. polaris*, Wahl. Two of these plants have been lost to our flora from the change of climate that has taken place—viz., *Salix myrtilloides*, L., and *S. polaris*, Wahl.; and *Betula nana*, L., has retreated to the mountains of Scotland. Three others (*Dryas octopetala*, L., *Arctostaphylos Uva-Ursi*, L., and *Salix herbacea*, L.), have withdrawn to the mountains of Northern England, Wales, and Scotland, while the remainder are still found scattered over the country. Notwithstanding the diverse physical conditions to which these plants have been subjected, the remains preserved in these beds present no characters by which they can be distinguished from the living representatives of the species.

We meet with no further materials for careful comparison with existing species until we get beyond the great period of intense cold which immediately preceded the present order of things. The Glacial epoch includes four periods during which the cold was intense, separated by intervals of somewhat higher temperature, which are represented by the intervening sedimentary deposits. During these alterations of temperature extensive changes in the configuration of the land were taking place. The first great upheaval occurred in the early Glacial period, and was followed by a considerable subsidence. A second upheaval took place late in the Glacial epoch. Various estimates have been formed of the time required for this succession of climatic conditions and earth movements. The moderate computation of Ramsay and Lyall gives to the boulder-clay of the first Glacial period an age of 250,000 years, estimating the time of the first upheaval as 200,000 years ago, while the subsidence took place 50,000 years later, and the second upheaval 92,000 years ago.

The sedimentary deposits later than the Pliocene strata, but older than the Glacial drift, indicate an increasing severity in the climate, which reached its height in the first Glacial period.

At Cromer, on the Norfolk coast, the newest of these deposits has supplied the remains of *Salix polaris*, Wahl., *S. cinerea*, L., and *Hypnum turgescens*, Schimp. This small group of plants is of great interest in connection with the history of existing species; their remains are preserved in such a manner as to permit the closest comparison with living plants. Such an examination shows that they differ from each other in no particular. In the post-Glacial deposits in Sweden, *Salix herbacea*, L., is associated with *S. polaris*, Wahl., as I have already stated. These two Willows are very closely related, having indeed been treated as the same species until Wahlenberg pointed out the characters which separated them when he established *Salix polaris* as a distinct species in 1812. One of the most obvious of the specific distinctions is the form and venation of the leaf, a character which is, however, easily overlooked, but when once detected is found to be so constant that it enables one to distinguish without hesitation the one species from the other. The leaves of the two Willows in the Swedish bed present all the peculiarities which they possess at the present day, and the

venation and form of the leaves of *S. polaris*, *Wahl.*, from the pre-Glacial beds of Cromer, present no approach towards the peculiarities of its ally *S. herbacea*, *L.*, but exhibit them exactly as they appear in the living plant. This is the more noteworthy as the vegetative organs supply, as a rule, the least stable of the characters employed in the diagnosis of species. The single Moss (*Hypnum turgescens*, *Schimp.*) is no longer included in the British flora, but is still found as an Arctic and Alpine species in Europe, and the pre-Glacial specimens of this cellular plant differ in no respect from their living representatives.

The older beds containing the remains of existing species, which are found also at Cromer, have recently been explored with unwearied diligence and great success by Mr. Clement Reid, F.G.S., an officer of the Geological Survey of England. To him I am indebted for the opportunity of examining the specimens which he has found, and I have been able to assist him in some of his determinations, and to accept all of them. His collections contain sixty-one species of plants belonging to forty-six different genera, and of these forty-seven species have been identified. Slabs of clay-ironstone from the beach at Happisburgh contain leaves of Beach, Elm, Oak, and Willow. The materials, however, which have enabled Mr. Reid to record so large a number of species are the fruits or seeds which occur chiefly in mud or clay, or in the peat of the forest bed itself. The species consist mainly of water or marsh plants, and represent a somewhat colder temperature than we have in our own day, belonging, as they do, to the Arctic facies of our existing flora.

Only one species (*Trapa natans*, *L.*) has disappeared from our islands; its fruits, which Mr. Reid found abundantly in one locality, agree with those of the plants found until recently in the lakes of Sweden. Four species (*Prunus spinosa*, *L.*, *Ceanothus lachenalii*, *Gmel.*, *Potamogeton heterophyllus*, *Schreb.*, and *Pinus Abies*, *L.*) are found at present only in Europe, and a fifth (*Potamogeton trichoides*, *Cham.*) extends also to North America; two species (*Peucedanum palustre*, *Mench.*, and *Pinus sylvestris*, *L.*) are found also in Siberia, whilst six more (*Sanguisorba officinalis*, *L.*, *Rubus fruticosus*, *L.*, *Cornus sanguinea*, *L.*, *Euphorbia amygdaloides*, *L.*, *Quercus Robur*, *L.*, and *Potamogeton crispus*, *L.*) extend into Western Asia, and two (*Fagus sylvatica*, *L.*, and *Alnus glutinosa*, *L.*) are included in the Japanese flora. Seven species, while found with the others, enter also into the Mediterranean flora, extending to North Africa: these are *Thalictrum minus*, *L.*, *Thalictrum flavum*, *L.*, *Ranunculus repens*, *L.*, *Stellaria aquatica*, *Scop.*, *Corylus Avellana*, *L.*, *Zannichellia palustris*, *L.*, and *Cladium Mariscus*, *Br.* With a similar distribution in the Old World, eight species (*Bidens tripartita*, *L.*, *Myosotis caespitosa*, *Schultz.*, *Suaeda maritima*, *Dum.*, *Ceratophyllum demersum*, *L.*, *Sparganium ramosum*, *Huds.*, *Potamogeton pectinatus*, *L.*, *Carex paludosa*, *Good.*, and *Osmunda regalis*, *L.*) are found also in North America. Of the remainder, ten species (*Nuphar luteum*, *Sm.*, *Menyanthes trifoliata*, *L.*, *Stachys palustris*, *L.*, *Rumex maritimus*, *L.*, *Rumex Acetosella*, *L.*, *Betula alba*, *L.*, *Scirpus pauciflorus*, *Lightf.*, *Taxus baccata*, *L.*, and *Isoetes lacustris*, *L.*) extend round the north temperate zone, while three (*Lycopus europæus*, *L.*, *Alisma Plantago*, *L.*, and *Phragmites communis*, *Trin.*), having the same distribution in the north, are found also in Australia, and one (*Hippuris vulgaris*, *L.*) in the south of South America. The list is completed by *Ranunculus aquatilis*, *L.*, distributed over all the temperate regions of the globe, and *Scirpus lacustris*, *L.*, which is found in many tropical regions as well.

The various physical conditions which necessarily affected these species in their diffusion over such large areas of the earth's surface in the course of, say, 250,000 years, should have led to the production of many varieties, but the uniform testimony of the remains of this considerable pre-Glacial flora, as far as the materials admit of a comparison, is that no appreciable change has taken place.

I am unable to carry the history of any existing species of plant beyond the Cromer deposits. Some of the plant-remains from Tertiary strata have been referred to still living species, but the examination of the materials, as far as they have come before me, convinces me that this has been done without sufficient evidence. The physical conditions existing during even the colder of the Tertiary periods were not suitable to a flora fitted to persist in these lands in our day, even if the period of great cold had not intervened to destroy them. And in no warmer region of the earth do these Tertiary species now exist, though floras of the same facies occur, containing closely allied species. The sedimentary beds at the base of the Glacial epoch contain, as far as we at present know, the earliest remains of any existing species of plant.

It is not my purpose to point out the bearing of these facts on any theoretical views entertained at the present day: I wish merely to place them before the members of this Section as data which must be taken into account in constructing such theories, and as confirming the long-established axiom that by us, at least, as workers, species must be dealt with as fixed quantities.—(*Nature.*)

HARDY FRUIT SHOW AT THE CRYSTAL PALACE.

OCTOBER 6TH, 7TH, 8TH, AND 9TH.

AN excellent show of Apples is provided at Sydenham this week, the fruits being very satisfactory in size and quality. Pears are not so fine, in fact are rather small. Vegetables are good, and the miscellaneous collections numerous.

The leading class is that for the best collection of kitchen and dessert Apples, six fruits of each variety; and in a very strong competition Messrs. G. Bunyard & Sons, Maidstone, have won the premier honours, showing 131 dishes of superb fruits, remarkable both for size and colour. A few of the best varieties only can be noted, but all those staged are excellent representatives of the respective sorts. Warner's King is handsome, some weighing over 1 lb. each; Emperor Alexander, The Queen, Tower of Glamis, Gloria Mundi, Cellini, Red Hawthornden, Lord Sniffeld, Ecklinville, Manx Codlin, Afriston, Schoolmaster, Wealthy (American), bright red; Cox's Pomona, Golden Spire, Melon Apple, Lord Grosvenor, Small's Admirable, Washington, Grenadier, Stirling Castle, Colonel Vaughan, Yellow Ingestrie, Margil, Old English Codlin, Worcester Pearmain, King of the Pippins, Duchess of Oldenburgh, Duchess's Favourite, Sandringham, Mère de Ménage, Ringer, Cardinal, Golden Noble, and Court Pendu Plat. The second place is taken by Mr. John Watkins, Pomona Farm Withington,

Hereford, with 112 dishes, the majority of fruits very large and well coloured. Especially good are Duchess of Oldenburgh, Peasgood's Nonsuch, Warner's King, New Hawthornden, Red Costard, Tom Putt, Ecklinville Seedling, King of the Pippins, Worcester Pearmain, Mère de Ménage, Emperor Alexander, Calville Rouge, and Golden Noble. Mr. C. G. Slater, Birchy Barton, Heavitree, Exeter, is third with 96 dishes, including some very fine samples of Peasgood's Nonsuch, Gloria Mundi, Yorkshire Beauty, Catshead, Mère de Ménage, Golden Noble, Tom Putt, and Dumelow's Seedling. Mr. David C. Powell, Powderham, Kenton, Exeter, is fourth, also with about the same number of dishes as the third, the fruits fine, but not quite so highly coloured. Ten collections are exhibited, or a total of over 1000 dishes.

In the amateurs' class for twenty-four dishes of Apples Mr. W. Edwards, gardener to H. Higgins, Esq., Shinghill, Hereford, is first with fine samples of Peasgood's Nonsuch, Bedfordshire Foundling, Pott's Seedling, Waltham Abbey, Gloria Mundi, Warner's King, Lady Henniker, Dumelow's Seedling, Annie Elizabeth, Blenheim Orange, Tower of Glamis, Yorkshire Beauty, Afriston, Costard, Alexander, Ecklinville Seedling, Red Costard, King of Pippins, Duchess of Oldenburgh, Cox's Orange Pippin, Cox's Pomona, Worcester Pearmain, Round Winter Nonsuch, and Mère de Ménage. Mr. G. Ford, gardener to L. A. Wallace, Esq., Leonardslee, Horsham, is a very close second, his fruit being large and finely coloured; Emperor Alexander, Dr. Harvey, Peasgood's Nonsuch, and New Hawthornden are particularly noteworthy. Mr. A. Waterman is placed third with very large and heavy fruits, Peasgood's Nonsuch being very handsome. There are six competitors.

For the best collection of Pears, Mr. James Butler, gardener to H. J. Thomas, Esq., Orchard Lane Gardens, Sittingbourne, was awarded the premier prize for ninety-six dishes of good fruits. Very large samples of Pitmain's Duchess, Beurré Clairgeau, Desire Cornelis, Beurré d'Amanlis, Catillac, Souvenir de Congrès, Beurré de l'Assomption, Duchesse d'Angoulême, Doyenné Boussoch, and Conseiller du Cour. Louise Bonne of Jersey, Williams' Bon Chrétien, Durondeau, General Tottleben, and Marie Benoist, were also good. Messrs. T. Rivers & Son, Sawbridgeworth, are second with a collection of choice varieties represented by fine fruits of Princess (Rivers), Catillac, Doyenné du Comice, Magnate (Rivers), Duchesse d'Angoulême, Durondeau, Marie Benoist, and Pitmain's Duchess. Mr. A. Waterman third, and Messrs. G. Bunyard & Co. fourth. Six collections shown.

With twelve dishes of Pears, Mr. S. Ford wins the first prize for large fruits of General Tottleben, King Edward, Marie Louise d'Uccle, Uvedale's St. Germain, Duchesse d'Angoulême, Durondeau, Vicar of Winkfield, Louise Bonne of Jersey, Beurré Bosc, Marie Louise, Beurré Clairgeau, and Doyenné du Comice. Mr. A. Waterman is second with capital samples of Pitmain's Duchess, Doyenné Boussoch, and Beurré d'Amanlis. Mr. J. Neighbour is third with medium-size fruits of good varieties. Eleven collections were entered, and three were disqualified for containing duplicates.

In the amateurs' class for a collection of twelve dishes of vegetables Mr. J. Waite, gardener to Colonel the Hon. W. P. Talbot, Glenhurst, Essex, is awarded the first prize for excellent samples of Autumn Giant Cauliflowers, Sutton's Intermediate Carrots, Prizetaker Leeks, Major Clarke's Red Celery, Carter's Champion Beans, Perfection Tomatoes, Snowdrop Potatoes, Anglo White Spanish Onions, Pragnell's Exhibition Beet, Student Parsnip, and Wroxton Sprouts. Mr. J. Neighbour, Bickley Park Gardens, Chislehurst, is second, and Mr. A. Waterman, gardener to H. A. Brassey, Esq., Preston Hall, Aylesford, Kent, is third. There are seven collections.

Class C was for the best collection of vegetables arranged for effect, not more than four dishes of any sort. Mr. A. Waterman, gardener to H. A. Brassey, Esq., Preston Hall, Aylesford, won first honours with a most tastefully arranged and extensive collection, comprising over sixty varieties, fine clean samples placed on Parsley, with three stems of Brussels Sprouts in the centre, surrounded by Capsicums. Mr. J. Neighbour is second, also with a large and good assortment; Mr. W. Mist, George and Dragon Hotel, Ightham, Kent, being a good third. The cottagers' prizes for six dishes of vegetables were won by Mr. W. Thayer, New Town, Crawley, Mr. R. Hall, 71, Great Queen Street, Dartford, and Mr. C. Beckett, Tyler's Green, Amersham.

The Gourds occupy a large table at the end of the nave, some enormous and curious specimens being shown. The heaviest Gourd was exhibited by Mr. J. Rodbourn, gardener to Baroness Heaton, Coombe House, Croydon, and weighed 139 lbs. Mr. G. Sheppard, Pulborough, was second with Daniel's Yellow Mammoth weighing 119 lbs., and Mr. W. D. Cochrane, Fortune Green, Hampstead, was third with a fruit weighing 101 lbs. Nine specimens are shown of smaller weight. The best collection of Pumpkins and Gourds is contributed by Mr. W. Dance, gardener to Col. A. S. H. Lowe, Gosfield Hall, Halstead, a varied and peculiar assortment. Mr. C. Osman, Sutton, Surrey, is second with large specimens but fewer varieties.

The miscellaneous exhibits comprised large collections of Apples from Messrs. J. Veitch & Sons, Chelsea; Messrs. J. Cheal & Sons, Crawley; and Messrs. T. Rivers & Son, Sawbridgeworth. Messrs. Cheal & Sons also had a fine group of Dahlias; Messrs. J. Laird & Co., Forest Hill, a group of Tuberous Begonias; and Mr. C. Turner, Slough, a box of Cactus Dahlias.



KITCHEN GARDEN.

STORING ONIONS.—The whole of the summer-grown Onions should now be placed in their winter quarters. They will keep in any dry cool place where the temperature does not fall below 32° or rise above 55°. Thick-necked Onions should be placed by themselves for immediate use, and it should be seen that the late sorts, such as James's Keeping and Bedfordshire Champion, are not used before others not possessing their keeping qualities. We always store those named by themselves, and give an

order that they have not to be touched until the spring or the others are finished.

Bulbs about the size of a hen's egg keep much better than larger ones, and we have just harvested a quantity that were grown on ground without manure. They are below the average in size, but capitally ripened, and we shall have no difficulty in preserving them until May.

STORE CABBAGE—This is the term we apply to the young plants which have been left in the seed beds after planting-out those recommended for the main quarters a few weeks ago. Many are inclined to think that when they have placed out all that are required in autumn the remainder of the plants will be of no further service; but this is a mistake, as those which remain in the seed bed often prove the most useful. We have frequently seen those which were planted out suffer severely from the weather or from grubs, while those growing closely together in the seed bed remained uninjured, and it is in cases of this kind that the reserved plants are most valuable. Then, again, vacant ground is sometimes not so plentiful in autumn as spring, and where there were not enough Cabbages planted in autumn another hatch can be taken from the seed bed and planted early in the year. Indeed, the reserved plants are always wanted for some reason or other in spring, and they should be well looked after. Now that the weather is moist slugs and snails are troublesome, and the whole of the plants should be dusted frequently with lime or soot. Where they are very plentiful a quantity of sawdust or rough ashes placed around each plant will generally prevent their doing much mischief.

STORING LETTUCE AND ENDIVE.—In many parts the weather is so severe in winter that if the Lettuce and Endive were left out they would be all killed before the winter was half over, and to prevent this the plants are generally lifted and placed in frames; but this operation is frequently delayed until the first frost comes, then the leaves are injured by it, which causes them to partially decay, and they seldom keep well afterwards. It is much better to do this work early, and the present is a good time to attend to it. When plants which are about half grown now are lifted with good balls of soil, and planted in frames, they soon begin growing again, and make much better and more substantial plants by December than those lifted and replanted when almost full sized. If the plants are put into the frames at a distance of 6 inches or 8 inches apart, and 10 inches or 1 foot from row to row, they will form a close-grown mass of valuable produce for winter use, and the plants which are placed early will always be found to be the best.

FORCING DWARF KIDNEY BEANS.—The autumn forcing of these is uphill work, but it can be done where there is plenty of heat in the houses or pits, and to have Beans in December and at Christmas the seed should be sown now. *Ne Plus Ultra* is the best variety for forcing. Sow the seed in 3-inch pots, place them in a temperature of 65° or so, and as soon as the plants are 6 inches high transfer them into 6-inch or 7-inch pots; use a rough, rich mixture of soil and manure. Keep the plants well up to the light, and always in temperature from 65° to 75°, and they will grow well and prove very fruitful.

AUTUMN-SOWN ONIONS.—These are growing fast, and are likely to be very forward before the cold weather sets in. When this is the case they are always rather liable to suffer, and this should be avoided as much as possible. We find that plants grown in loose soil suffer more than those with their roots in firm material, and from now onwards we shall dust the young plants over with a little soot, and immediately afterwards trample the soil down firmly along each side of the rows with the feet; this makes the plants very firm in the ground, causes the roots to grow plentifully and close, and then severe weather does them little or no harm. The weeds which are springing up amongst them may be left by some to afford them protection, but they only cause the plants to draw up and make them tender, and the plants suffer more with weeds around them than they do without them.

CAULIFLOWER.—That always excellent variety, *Veitch's Autumn Giant*, is now heading freely, and will continue to do so for the next six weeks or two months; but should frost come, as it may any time now, many of the heads may be spoiled, and it is a safe and good plan as soon as the heads are formed either to break a few of the largest leaves over them, or draw the whole of the leaves up over them and tie them at the top with a piece of matting or willow. When many heads are ready at the same time they may be cut, trimmed, and placed in a cool dark place with the end of the stem in damp sand or soil until wanted. They will keep good for three weeks in this way.

TOMATOES IN THE OPEN.—These have now almost ceased growing and there will be no more fruit formed, but attention should be given to maturing that which exists. It will be observed that many of the fruits become dark and bruised at this season, and this is produced by the cold and damp, and spoils the fruit considerably, but if a glass light or some such protection can be placed against the wall and over the Tomato plants the fruit will retain their qualities and ripen well; but, as in many other cases at this season, the protection should be given to prevent the fruit being injured, and not as a remedy for it.

FRUIT FORCING.

CHERRIES.—It is not often we see a house of Cherries, but ripe Cherries in May are very valuable for dessert. The foreigners have almost stopped home-grown Cherries and Apricots, for the simple reason that the fruit can be purchased much cheaper than it can be grown. This is a fact that home growers should not lose sight of; it tells equally with growers for private use as for sale.

The house for Cherries should be light, well ventilated both at top and bottom, and efficiently heated. Side lights are not necessary, but wooden

ventilators should be provided to open the whole length of the house and on both sides of a span. The trees may be trained to a trellis fixed 12 inches from the glass. A lean-to may be 10 to 12 feet, and a span 15 to 18 feet wide with trees on each side, and in the lean-to the front trellis should only extend two-thirds up the roof and the upper part be kept 4 feet from the glass, so as to admit light to the trees on the back wall. Two rows of 4-inch piping will be sufficient for the lean-to and two rows on each side for the span, 3-inch for the 15 feet house and 4-inch for the 18 to 24 feet wide house. The borders should be wholly inside and not made all at once. A 4 to 6 feet width of border according to the size of the trees is sufficient to commence with. It should be drained 9 inches to a foot deep, having a drain to carry off superfluous water, and cover with a thin layer of turves grass side downwards. From 24 to 27 inches depth of soil is sufficient. Good turfy loam, neither light nor heavy, but preferably heavy than light, four parts, lime rubbish from an old building one-fifth, and road scrapings one-sixth; the turfy loam chopped moderately fine, the whole well incorporated with about a twentieth of half-inch or crushed bones. The trees may be planted as soon as the leaves begin falling. Those that have been trained to walls four or six years are most suitable, as they will be in a fruitful state and calculated to afford a moderate crop of fruit the first season, and having been lifted annually they can be moved with safety. The borders being firm and a few inches increased depth allowed for settling, plant at once, giving a good watering. The lights being moveable, take them off and mulch over the roots with a couple of inches thickness of short stable litter. The most suitable varieties are *Empress Eugenie*, *May Duke*, and *Black Tartarian*. *Early Rivers* promises to be very valuable and should be tried. *Governor Wood* and *Elton* are excellent for succession.

Cherries are readily forced in pots. Trees should be procured at once. If in pots, they must be given a larger size if they require it, disentangling the roots with a fork, and cutting back any straggling and thick ones. Provide good drainage and ram the soil firmly. Trees that are in as large pots as desired need only have the drainage rectified and be surface-dressed, or the old drainage may be cleared away, a few inches from the base removed, the roots shortened back, and fresh soil given; fibrous loam, &c., as advised for the borders, with a fifth of well-decayed manure, removing also the loose surface soil and supply rich material. If the trees are not already in pots, pyramids or bushes should be lifted, have their roots trimmed, and be potted firmly, allowing them to become established in the pots before subjecting them to forcing. The trees should be placed on a hard bottom impervious to worms, and surrounded with ashes to the rim, covering the pots with litter upon the approach of frost. The trees should have a good watering after potting or having the roots interfered with.

VINES.—*Early Vines in Pots*.—If bottom heat can be given they will break well. Provided there is a pit of 3 feet depth and 4 feet width or more, the pots may be raised upon loose bricks, pillar fashion, so that their rims are slightly higher than the pit edge, and so that the pots will have heat equally all around. Leaves being placed in to fill the pit, a gentle heat will be afforded the Vines, giving off moisture so favourable to a good break, and it will lessen the necessity for fire heat. The temperature about the pots ought not to exceed 70° to 75°. It will stimulate the roots into activity, and they will pass from the pots into the fermenting material, deriving support beneficial to the Vines. The top heat should be kept at 50° to 55° by artificial means until the eyes swell, then gradually increase it to 60° or 65° when they are breaking. The canes must be depressed to a horizontal position to secure their breaking regularly. Damp the canes morning and afternoon, but do not keep them constantly dripping with moisture.

Early-forced Vines.—Forcing operations being contemplated early in November, fermenting materials may be collected for placing in the houses after they have parted with the rank steam. The fermenting materials will aid in keeping up a regular and moist heat, and secure the free and more regular breaking of the Vines. Tree leaves, with a third of stable litter thrown into a heap, damped if dry, and turned over outside to inside when getting warm, again damped, and allowed to get warmed through, will be in suitable condition for placing in the house, forming into ridge-like beds on the border, turning over and adding fresh material as the heat declines. The materials need not be used until after the house has been closed a fortnight. The outside border should be well protected with leaves and litter, or preferably tarpaulin, shutters, or thatch, so as to throw off heavy rains and snow.

Late Grapes.—These are mostly ripe now, but some may not be, and in that case the temperature must not be less than 65° to 70° at night, and 70° to 75° by day, with a rise of 10° to 15° with sun until the Grapes are ripe, keeping the fires going until the wood is brown and hard. It is, however, a bad look out if the Grapes are so unripe when October sets in that a forcing temperature has to be maintained to secure the ripening of the fruit. The fruit being thoroughly ripe—and the Grapes will not keep satisfactory unless perfectly finished and the wood thoroughly matured—all spray or laterals may be removed down to the main buds, ventilating liberally on all favourable occasions. Fire heat will then only be necessary at night to prevent the temperature falling below 50°, and to insure ventilation in the daytime when the weather is favourable. In dull damp foggy weather the house should be kept close with a gentle warmth in the pipes. To prevent dust settling on the berries raking the borders or sweeping floors must not be practised, and damp must be excluded. Mats or dry clean straw laid over the inside borders will to some extent prevent evaporation, assist in keeping the atmosphere dry, and prevent the soil cracking. The outside borders must, if the Grapes are to keep satisfactorily, be covered, wooded shutters being the best, tarpaulin

over bracken or straw answering well, or a good thick batch of straw or bracken will be serviceable, the surface being given sufficient fall from the house outwards so as to throw off the wet.

Young Vines.—These have a disposition to continue growing to a late period; check them by stopping the shoots moderately, and facilitate ripening the wood by a high and dry temperature by day, shutting off the heat and keeping the ventilators open by night.

MELONS.—The Melon season as regards dung-heated pits and frames may now be considered at an end. Any fruits yet remaining and fully grown may be cut and placed in a warm house to ripen. The latest plants in houses will require a night temperature of 70°, falling 5° through the night, and 75° by day by artificial means, advancing to 85° with sun heat, admitting a little air at every favourable opportunity. Sprinkling the paths will be needed about 8 A.M. and 3 P.M. until the fruit is full grown, when a drier atmosphere will be advisable. Cut out all superfluous laterals, well thinning the old foliage so that the fruit may have the full benefit of the autumn sun. Before the ground is soaked by the autumn rains secure the required quantity of soil for next year's crop—rather strong loam taken off with its turf, stacking it grass side downwards, adding about a bushel of quicklime to every cartload will be in capital condition by spring.

PLANT HOUSES.

Shading.—The blinds that have been used for breaking the sun's rays may be taken down and stored for the winter. They must be perfectly dry before they are rolled up, and the position in which they are placed must be free from damp or they will be of but little service another year. A note should now be made of what blinds that are too old for further use, and new ones should be prepared during the winter so that they are ready for use when required. This work is generally delayed until the spring, but, at that season work presses in every department. A little shade will still be needed for Ferns, but this must be as light as possible, and allowed only to be down when the sun is very bright. Prepare these plants to stand full light as early as it can possibly be done. All shade must be dispensed with for those plants that have been grown to supply fronds for cutting. The blinds must be left on Orchid houses for a few weeks longer, but they should only be used when the sun is very bright. The majority that have completed their growth and are ripening their pseudo-bulbs must not be shaded. The blinds must be used for Odontoglossums for some time yet.

Housing and Cleaning.—Washing and painting must be pushed on rapidly, so that the various plants can be housed in their respective positions for the winter. In many instances this is the most convenient time of the year for painting, commencing with the warm structures and finishing with cool houses. When done in early autumn the houses are light and clean for the winter, and the paint has a chance to become properly hardened during the period that less moisture is used. It is a wise plan to thoroughly dry, before painting, stoves and such structures by the removal of all the plants for a short space of time. This not only assists wonderfully in the preservation of the wood, but the paint remains in good condition much longer. This is not always practicable, but when possible it should be done. Before the houses are painted, however, the glass should be thoroughly washed to free it from dirt. This is necessary in the neighbourhood of towns outside as well as in, for the latter is generally coated with soot which, if not persistently removed, acts as a shade. The glass must be clean, so that every ray of light can reach the plants during the winter.

Cleaning Plants.—All plants should be thoroughly cleaned before they are returned to the structures that have been washed or painted. It is a bad practice to place clean plants in a dirty house, but worse to place insect-infested plants in a clean house. If insects have been kept in check during the summer and the plants well cleaned at this season, little trouble will be experienced another summer. Azaleas, as they are housed, should be dipped or syringed, as the case may be, according to size, if there has been any thrips upon them during the season. A very few upon these plants spread rapidly when introduced into heat to force them into bloom, and quickly destroy the appearance of the plant. A good solution for this purpose is tobacco water about the colour of stout, half an ounce of soft soap dissolved in each gallon of the solution, and a piece of common washing soda about the size of a cob nut to the same quantity. Azaleas should be under cover if they can only be sheltered from heavy rains in Peach houses and vineries, until their proper position has been cleaned for them.

Heaths and Epacris.—Soft as well as hardwooded varieties must be under cover. The latter must occupy a light airy place in the greenhouse with their pots standing upon gravel or some other moisture-holding material. Abundance of air must be admitted to them day and night whenever the weather allows of this being done, for some weeks too much air cannot be admitted. The softwooded Heaths and Epacris will succeed very well in frames where they can be sheltered from slight frosts and heavy rains, the latter do the most injury. Now that the flower buds are formed in the majority a slight check must not be given, either by being allowed to become too wet, too dry, or from frost. A check in their present stage would ruin the display of bloom for the season. *E. hyemalis* and others are very apt to go blind if subjected to the very slightest check. The lights may be entirely off these plants during the day when the weather is fine, and at night when mild and no appearance of frost. Acacias, Correas, Cytisus, Eriostemon, Aphelexis, Pimeleas, Pleromas, greenhouse Rhododendrons, and many other plants must be placed where they can be protected, the same as advised for Heaths.

Camellias.—Some care is needed when these plants are removed from the outside and placed under glass. Very frequently a check is given to the plants, which results in their casting the majority of their flower buds. The foliage must be thoroughly cleaned, but in their present stage strong insecticides must not be used. Abundance of air must be given after the plants are housed, and great care exercised in supplying them with water at their roots. The soil must not be allowed to approach dryness, or the buds are certain to fall. The plants must also be liberally syringed twice daily, and a liberal quantity of moisture maintained in the atmosphere. They should stand upon some moisture-holding material, for a dry or close atmosphere at the present time is unsuitable for them.

Daphne indica.—The whole stock of these plants should be in cold frames, where abundance of air can be admitted to them, but where they can be protected from heavy rains. Those that have set their buds may occupy a cool airy greenhouse if they can stand upon gravel that is kept moist. Any house where frost only is excluded will suit them admirably. Those that have not set buds may be plunged in a cold frame ready for the winter, where they will be perfectly safe and better than if housed in the greenhouse. They are nearly hardy, and frost will not injure them when the pots are plunged and the protection of a frame given them.

Choisya ternata.—These plants may remain outside for fully another month, for a few degrees of frost will do them no harm. It is hardy in some localities, and only needs the protection of a cold frame during the winter. It is ruined in heat, and soon becomes a prey to red spider if placed in dry sultry positions. It flowers freely in the spring by the aid of cool greenhouse treatment. If kept cool it will bloom at a time when it will prove very serviceable for the conservatory, when many spring-flowering plants are over.

Hydrangea paniculata grandiflora.—This is even more beautiful in pots for conservatory decoration from July onwards than when grown in outside borders. To have plants in good condition for this purpose strong plants should be lifted from the borders and placed into 6 to 8-inch pots at once. If lifted while the foliage is upon them, they will become partially established before winter and then start freely into growth next spring. Plants may be obtained from nurseries for the same purpose if the necessary injunctions are given for the roots to be thoroughly moistened before they are dispatched. If allowed to become dry no advantage will be gained by potting them at the present time. These plants do well in good fibry loam enriched with decayed manure.

THE FLOWER GARDEN AND PLEASURE GROUND.

Late Displays.—Although we have experienced several cold, frosty nights, very little harm was done, and the majority of beds and borders are, considering the time of year, exceptionally gay. Even Zonal Pelargoniums, which with us are usually shabby by the middle of September, are yet very bright with colour, and Ageratums, Lobelias, Calceolarias, Heliotropes, and Tuberous Begonias are all still at their best. The last-named are quite opposite to the Zonal Pelargoniums in their character, a showery season suiting them, while the Pelargoniums delight in dry weather. On the whole the Begonias, whether in masses or planted thinly with a carpeting of *Mesembryanthemum cordifolium variegatum*, are the most attractive, and no amount of rain apparently disfigures them; consequently we cannot do better than to plant them in large numbers. Doubtless certain growers do possess strains very suitable for bedding out, and this may lead some to think those that are considered extra choice are not robust enough for the open air. This is a mistaken notion, however, and instead of raising and planting out the strong-growing inferior sorts, the preference should be given to seed saved at the present time from the choicest varieties, named and otherwise, and this, if sown early in January, will germinate quickly. Seedlings thus raised may be bad by the thousand, and can be grown large enough to plant out the same season, and will be extra fine the next year. In many gardens the beds and borders are supposed to be particularly gay late in August and as far into October as the frosts will permit. For this purpose *Antirrhinums* in separate colours or mixed, *Pentstemons*, the earliest flowering autumn and East Lothian Stocks, *Zinnias* including the free-growing yellow variety *Z. Haageana flore pleno*, and *Asters* in variety all raised from seed the same season, prove most serviceable. We have cut many basketfuls for various Harvest Thanksgivings this season, and there are still plenty left for effect. The back rows of the borders containing these are composed of single Dahlias in variety, and Cactus Dahlias, among which may be included the medium-height and wonderfully floriferous *Glare of the Garden*. Dahlias *Juarez* and *Constance* are always very grand in the autumn and afford heavy supplies of cut blooms, and the same may be said of the charming white *Pompon Guiding Star*. In the herbaceous borders the Japanese *Anemones*, white and rose-coloured, are very gay, and these and the tall-growing very floriferous *Pyrethrum uliginosum* all afford unlimited supplies of lovely cut blooms.

The earliest flowering *Chrysanthemums* are very effective in the mixed borders, and some of these may, when the break-up commences, be planted against walls or where they may be roughly protected from frosts. We group a good number of the most useful sorts, including *Madame Desgrange*, *Sœur Melanie*, *Alexander Dufour*, *Snowdrop*, the *Rundle* family, *Julie Lagravere*, and *Elaine*, where they can have a rough framework formed over them, on this being stretched heavy blinds that we have principally for protecting *Apricot blossom*, and with this aid wonderful masses of bloom are obtained. It may have been generally observed that *Chrysanthemums* planted on good ground and stopped but once after they are planted are remarkably free-blooming, in this respect being far superior to pot-grown plants. This year *Roses*, especially the *Teas*, are very continuous flowering, and many are very beautiful at the present time (September

29th), notably Homère, Catherine Mermet, Isabella Sprunt, Madame Lambard, Souvenir de Paul Neyron, Gloire de Dijon, Devoniensis, Alba R. sea, Adam, Comtesse de Nadaillac, Anna Ollivier, and Marie Van Houtte. Cheshunt Hybrid is very fine both against sunny walls and on standard Briarst. cks., while the Bourbon Souvenir de la Malmaison on its own roots is the most continuous and free blooming of all. Of the Hybrid Perpetuals the best at this time are Captain Christy, La France, Countess of Oxford, Jules Margottin, John Hopper, Baronne de Rothschild, Merveille de Lyon, Charles Lefebvre, Etienne Levet, and Duke of Edinburgh. Violets are now abundant, especially where the plants are not at all crowded. Those of the Czar type are seldom killed by frosts, but in very cold weather they do not bloom. If there are any handlights or frames available these may be utilised for covering a breadth of plants, or some of the strongest clumps may be lifted and planted in them. The best, however, for frames are the Neapolitans, notably Marie Louise and New York, and as these are not at all hardy some protection ought to be afforded them. They should be planted near the glass, and must not be forced or "stewed up." Given plenty of light and air they, if protected when necessary, rarely fail to pay for the little extra trouble taken with them.

THE BEE-KEEPER.

MOVING BEES.

QUESTIONS have been often asked in this Journal as to the cause of bees dwindling during the winter that had been moved during the beginning of winter or end of autumn. The cause of the dwindling was not difficult to explain, but when we see advice frequently given in contemporaries to move bees in so reckless a fashion, it is not out of place to give a word or two of caution to those who contemplate acting on it.

A hive of bees standing isolated from others may, on a fine day in summer, be moved from 50 to 100 yards with safety. Beyond retarding the bees in their labours a few hours they will not otherwise suffer. After they have searched out their hive the stream of bees will be constant and continuous towards it, and the humming made generally results in the bees marking the new site of their hive, and appearing to communicate the change to the inmates, so that an hour or two suffices for the bees to continue their labours as if no change had been made.

It is very different, however, if a hive is moved a short distance when the temperature is not higher than 50° or 60°, and when the air is chilling. In such cases the bees on leaving their hive fly naturally to their old site, and before they can attempt to seek the new one they fall victims to the chilling winds, few, if any, returning to their hive. The only safe method of moving bees to another part of the garden from where they stand, or short distances at this season or during the spring, is to remove them at least three miles until they have forgotten their old site, then return them to the new one.

How long should bees be away before being returned? is an important question. We used to regard three weeks as sufficient time, with the black bee, between the first removal and the second one, but we have just experienced a striking example which proves the contrary to be the case with the Eastern races. Fully six weeks elapsed between taking our bees to the Heather this year and bringing them back, two hives, one a Carniolian, the other a Syrian. On being released, the drones flew back to their old site, as I expected, but contrary to my expectations, so did the Syrian bees, which were all killed by the Carniolians. Nor was this all. I always endeavour to preserve the original appearance of all my hives when being taken to and brought from the Heather, otherwise many bees will be lost. This I did not neglect, but I was less careful in preserving the same height from the ground as they were at the Heather. In those I had raised a little the bees came out and alighted on the ground; had the day been cold every one would have been lost, but as it was fine they soon regained the entrance. All went well, but the lesson need not be thrown away, and bee-keepers should become impressed with the foregoing facts, so that they need not wilfully destroy their bees.

THE HEATHER HONEY HARVEST.

The Heather honey harvest this year will undoubtedly be a small one. I am not yet in a position to record an accurate report of my own harvest, but at an early date I will give the comparative making of the different varieties, and under different management, as previously premised. I may, however, state that both Cyprians and Syrians have eclipsed all other varieties, so much that if bee-keepers would purchase one queen only, one hive would repay double the money invested the first season. A little less manipulation and more care will soon overcome the stinging propensities of these bees. Foreign varieties of bees have been condemned by many without being able to give the slightest evidence in support of their inferiority. Some people condemn these through prejudice only, while they are actually reaping large harvests of honey unwittingly through their introduction. I could cite many such cases, but I will confine myself to one individual who has been a bee-keeper fifty years. During the first twenty-five years of his bee-keeping life with the old black bee, he had not as much honey as he took from his crossed stock last year. True, he had advanced from the skep to the Stewarton system, but the large takes of honey are entirely due to the introduction of the foreign bees which have crossed with his, but he will not acknowledge it. It is always pleasant to meet with people open to conviction, and who express themselves honestly. I had the good fortune to meet with a lady bee-keeper who, along with her husband, is an enthusiast with bees. While recounting her good fortune with their bees this year, both at home and at the Heather, she said, "These weights were all owing to the Ligurian bees. We never had so much honey until we kept Ligurians." I mention these facts with the view of encouraging others, and to dispel the prejudice of ignorance that spreads more rapidly than truth.—A LANARKSHIRE BEE-KEEPER.

ARRANGEMENT OF HIVES.

IN laying out the grounds for an apiary, and at the annual addition to the same, it is of considerable importance how the hives are arranged, both in their relative position towards each other and towards the honey house and other objects on the ground. I will proceed to point out first the way in which they should not be placed; second, the different ways in which they may be arranged, both in regard to the safety and comfort of the bees, and also in regard to the convenience of the owner.

Hives should not be placed too near each other, as there is danger of the bees (particularly the younger ones) entering the wrong hive and being killed as intruders; also of the queens making the same mistake when returning from their "wedding trip" or in swarming, when a queen with clipped wing running on the ground and finding herself unable to follow the swarm attempts to re-enter the hive.

Hives should not be placed together on benches, as one hive cannot be examined or manipulated without disturbing all the other hives on the same bench, putting the bees on their guard and making them ready for an attack on the bee-keeper before he opens another hive. Benches also afford a convenient runway for ants, to the great annoyance of the bees as well as their owner. Hives should not be placed near Willow hedges, Cottonwood, or any other trees which harbour ants, nor under evergreen trees, which give shade when the bees ought to have full benefit of sun.

A high knoll exposed to severe wind; uneven ground, interspersed with gullies or boulders; low, damp ground, abounding in grass or weeds, which interfere with the free circulation of air around the hives, and which harbour toads and other enemies are to be avoided. Close sheds, boarded up on all sides but the front, will make it uncomfortably hot for the bees during summer, and may cause the combs to melt and break down.

Hives should not be placed in close proximity to dwelling houses, stables, line-fences, or public highways, as the bees are liable to be disturbed and to become annoying, and often dangerous to people and animals; nor near haystacks, as the fire occasionally employed in the apiary may, through an accident, become the cause of a conflagration. Hives should never be placed close against a building or fence. There should be sufficient room, so that the operator can stand at the rear of the hives when he is at work, and thereby avoid annoying the bees by being in their way while they are flying out and in at the entrance.

A clean, sandy plat, free from brush, weeds, bushes, evergreen trees, boulders, and other obstructions is the best location for any apiary. The ground should have a gentle slope, and the hives face towards the east or south-east that the morning sun may shine on the entrances, which will induce the bees to fly out earlier in the morning than if the entrance is shaded. The entrance to all the hives should be in full view from the honey house, that the owner may see at a glance from which hive a swarm is issuing, or where robbing is going on.

For the safety and convenience of the bees and queens the hives should be as near the ground as possible, each hive resting on its separate stand

made of boards, or simply of four bricks or of blocks sawed from the scantling. When a building is erected there will often be a lot of ends and waste pieces of scantling, which can be sawed into such blocks instead of using them as kindling and firewood. Hives should not be placed directly on the ground, as it will rot the bottom boards and harbour ants, but the earth may be banked up even with the entrance, so that spiders, toads, and lizards cannot find a hiding place underneath.

The hives may be placed in long rows in hexagonal form, or in any other position towards each other which will make it most convenient for the operator, but should always be so far apart that a wheelbarrow can be run between them in any direction. If shade trees are planted in the apiary they should be so placed that they do not interfere with such free passage; they should be kept trimmed up that the lower branches do not annoy the bee-keeper at his work, and should be thinned out when necessary that they do not give too dense a shade. All other trees or bushes provided for the swarms to settle on should be on the outer edge of the apiary.

A small running stream or a well near the apiary is indispensable. It will be most convenient to have the apiary located at the rear of the honey house. If the ground is sloping, and the house below the hives, it will facilitate the carrying of honey from the hives to the house. The space in front of the honey house should be left unobstructed, so that a team may be driven up to the door.—(*The American Bee Journal*.)

THE HONEY MARKET.

In your impression of September 23rd there is an article by "Felix," on "Home Markets for Our Honey," in which he takes for granted that the British Honey Company is a failure, because none of those shareholders who were present at the reading of Mr. Seager's paper joined issue with Mr. Seager on the policy of the establishment of the Company.

The reason why I did not speak on this subject of the paper was, that we were promised a paper by Mr. Stewart on "The Honey Market," and I thought that this question would be better discussed after we had heard this paper; but unfortunately I was not present on the latter occasion, though Messrs. Cowan, Garratt, Jenyns, and others took part in the discussion.

During 1885 the B.H.C. purchased upwards of £1000 worth of honey, and the supply was found to be so much greater than the demand that we were forced to stop buying extracted honey, and even sections, and if "Felix" will take the trouble to refer to the *B. J.* he will find that this was the case.

Again, we should only be too glad if Mr. Seager, "Felix," or anyone else will share the profits of our first year's working, for, as was expected, they are on the wrong side, and it is all but certain that there will be little or any profit this year, as the expenses of starting the Company, wages, &c., leave a large amount to be realised before any of those enormous profits which are so touchingly described will go into the pockets of the shareholders.

But we are the more certain that the Company is a success. The "clique" are represented by over 400 shareholders, who hold 6000 shares, the sales of honey have been steadily increasing, and last month £250 of honey was sold.

We have not purchased a single ounce of foreign honey, though we could have been supplied with pure foreign honey at about half the price of British honey. What we have done is to increase to a very great extent the demand for British honey, and if this goes on increasing it will lead to two results. First, to make the sale of honey very much easier to the producer, either directly or indirectly, through the much-maligned middleman; and second, to increase the value of honey.

The reason for this is self-evident. If we can pay our way and return a dividend to our shareholders with a monthly sale of £250, we can afford a much higher price for honey if our sales are double the amount, as the expenses do not increase in anything like the same proportion, and if the demand approaches the supply or exceeds it the price will infallibly rise.

In inviting subscriptions for shares we were extremely careful not to hold out or "dangle" (a quaint old Icelandic word), any delusive dreams of an El Dorado dividend. We believe that the shareholders will get a fair dividend commensurate with the risk.

Another company which was floated about the same time, and which received such able advocacy, has gone into liquidation, after having been obliged to call up their capital. As far as the directors of the B.H.C. are concerned their fees also are a minus quantity, and, personally, I am some pounds out of pocket for railway fares, &c., without taking into consideration the responsibility and the loss of professional time.—GEORGE WALKER, *Wimbledon*.

DEATH OF MR. JAMES ANDERSON, DALRY, AYRSHIRE.

THE above noted apiarist, and occasional contributor to this Journal, died at his residence, Drakemyre, Dalry, Ayrshire, on Thursday, 23rd September, at the age of seventy-two years. His father died a few years since at the advanced age of ninety years. Mr. Anderson has been for many years a martyr to bronchitis, and some years since visited America with the view of bettering his health and visiting his son in the far west. On Mr. Anderson's return from America he recounted before a large audience, who had made him their guest, his experience of bee-keeping in America, as well as that of this country, together with his first attempts at bee-

keeping and ultimate success at the first Crystal Palace bee show held in London. He, at that time, took safely to London about half a ton of the famed exquisite Ayrshire supers of honeycomb, which gave a stimulus to the bee-keepers of the south, and which display was described in the *Times* newspaper as "eclipsing everything of its kind."

He was a regular attender at all bee-gatherings, either as a judge of honey or as a visitor. During his last illness, which dates from the Dumfries Show, where he last acted as a judge, he has been visited by many old and tried friends. Mr. Anderson was sociable, kind-hearted, and a man of great integrity, such as "Neither kings nor statesmen could make."

TRADE CATALOGUES RECEIVED.

T. S. Ware, Tottenham.—*Catalogues of Bulbs, Daffodils, and Lilies.*

James Dickson & Sons, Chester.—*Select Roses for 1886-7.*

Wm. Paul & Son, Waltham Cross, Herts.—*Catalogue of Roses for 1886-7 (illustrated).*

Edmund Philip Dixon, Hull.—*Catalogue of Roses, Fruit, Forest, and Ornamental Trees.*

Wm. Baylor Hartland, Cork.—*Little Booke of Daffodils, Oxlips, and Primroses, and Abridged List of Hyacinths, Tulips, &c.*



* * All correspondence should be directed either to "THE EDITOR" or to "THE PUBLISHER." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

NAMING FRUITS.—In consequence of the absence of our fruit referee from London fruits cannot be named by him during the month of October.

Gardeners' Benefit Society (X. Y. Z.).—We presume you require the addresses of the Secretaries of the London and the Leeds Societies. They are as follows: Mr. J. F. McElroy, Moray Lodge, Campden Hill, Kensington, W.; and Mr. W. Sunley, Bacchus Hill, Moor Allerton, Leeds.

Peaches to Ripen from the Beginning of July until the End of August (A. S.).—We presume you do not intend to use much fire heat, perhaps only a little in spring to ensure the safety of the blossom and the embryo fruit. Waterloo, Hales' Early, Dagmar, Dr. Hogg, Condor, Crimson Galande, and Goshawk are good varieties.

Pyramid Pears (Idem).—If wanted for the open ground the following will be useful:—Gansel's Bergamot, Doyenné Boussoch, Pitmaston Duchess, Doyenné du Comice, Durondeau, Marie Louise d'Uccle, Beurré Bachelier, Josephine de Malines, Marie Benoist, Monarch, Bergamotte Esperen, and Easter Beurré.

Conifer for Lawn (A. Doctor).—Of the Cypresses there is none more elegant than *C. Lawsoniana*. It is of free growth, spreading, and very beautiful. It is not, however, so hardy, and does not stand wind so well as *C. nutkaensis* (*Thuopsis borealis*), a free-growing and very beautiful tree. It is of conical growth, somewhat spreading, and most graceful. Of Junipers, one of the hardiest and most ornamental is *Juniperus chinensis*. It is of pyramidal though somewhat spreading growth. *J. thurifera* is one of the best and most beautiful lawn trees. It forms a dense conical pillar, symmetrical in form.

Muscat Grapes Shrivelling (Idem).—The Grapes shrivelling is no doubt due to a check given during the ripening, and nothing will restore them to plumpness. It is the same with many other Grapes besides Muscat of Alexandria, notably Mrs. Pince, and is peculiar to those Grapes with the Muscat flavour, being very common to Frontignans. The only remedy is to maintain a suitable temperature after ripening commences until the Grapes are ripe. The berries of white Grapes shrink all over, but black ones, like Mrs. Pince, shrivel at the footstalk end of the berry only, where there is the least colour. It is a very interesting matter, and is common this season, pointing to the necessity of starting early and assisting the Vines in the early stages, so as to have the Grapes ripen whilst there is plenty of sun heat to insure their satisfactory and complete finish.

Cut Flowers at the Edinburgh Show (Stuart & Mein).—The report to which you refer reached us a week after the date of the Show, and too late for insertion. In answer to your request for our reporter's "opinion as to how the Gladioli stood in his estimation, especially as compared with the Crystal Palace collection," we find he stated, as regards cut flowers generally, that "the palm must decidedly rest with the southern Show." As regards Gladioli, he was "greatly disappointed; they were washed-out, and, beyond the first prize stand of Messrs. Stuart & Mein, no others were in any way noticeable."

Vine Leaves Injured (Clifton).—The leaves have their tissues destroyed by something noxious; it may be vapour arising from something on the pipes, or is probably due to an escape of gas into the house from the gas boiler outside. The leaves are covered with a white powder, which would lead to the conclusion of their being subjected to a syringing with water containing lime, but the particles may only be an accumulation of dust, or of the remains of a limewash shading. In the absence of particulars we are unable to help you to a solution. The appearances all point to the deleterious effect of some fumes or vapour, and we think there has been an escape of gas.

Violet Leaves Spotted (W. R.).—The leaves of the Violet plant are simply showing the effects of the treatment they have been subjected to through the summer. The cause is a drawn, weak, thin-textured growth, which may have been induced by a loose soil, too close planting, and shade, or by want of moisture in summer. The foliage being of thin texture, it is highly susceptible of injury, especially by damp; and though we attribute scorching to the sun, it is really a consequence of moisture hanging on thin tissues for some time, the sudden or excessive evaporation of which causing the scorching. The only remedy is to grow the plants in firm soil, to allow them plenty of room, so that the growth can be thoroughly solidified by light and air, and to water and mulch in dry weather so as to maintain a good root-action for the support of the growth. There is no disease. The foliage will die, and when most of it is down the plants should be trimmed and given a light mulching of leaf soil or old hothed manure, keeping it as much as possible off the crowns. The double varieties, through their less and firmer growth, are not so susceptible to damp as the single varieties, but they will succumb at a later period, to a greater or less extent, accordingly as they have firm or thin-textured foliage.

Destroying Worms on Lawn (Idem).—The safest plan is to use lime water. A peck of lime put into a tub containing 40 gallons of water, stirred well, and allowed to stand until clear, is fit for use. The lime should be quick or fresh slaked, the water clear, and the clear lime-water only used. The lawn must be well rolled the day before applying the lime-water, so as to close the old worm holes and get the worms to open fresh ones, and if moist weather is chosen the worms will be nearer the surface and the more readily reached. About 12 gallons will be required to saturate a rod of lawn, or 30½ square yards, so as to destroy the worms or bring them to the surface, from which they may be swept off.

Blinds for Shading Greenhouse (An Old Subscriber).—Spring blinds are best fixed inside, and should be fixed so as to be 3 or 4 inches from the glass, so as to allow air to have access, but should be so disposed as to not admit sunlight, as would be the case did the blinds not overlap the glass or fit in between the mullions or front uprights. Onrs are fixed like ordinary window blinds. They remain on all the year, as they are used in winter when the house is lighted, and are useful at night in severe weather. They are of linen, and unbleached, striped with red lines, and are very serviceable. The roof is washed outside in summer with whitening shading or summer cloud, and washed off before winter. When the blinds are fixed outside the wind and weather soon plays havoc with them. The Parisian blinds answer well for Ferns, Palms, and similar plants, and for use on winter nights they are valuable, arresting radiation and saving fuel.

Names of Fruits.—The names and addresses of senders of fruit to be named must in all cases be enclosed with the specimens, whether letters referring to the fruit are sent by post or not. The names are not necessarily required for publication, initials sufficing for that. Only six specimens can be named at once, and surplus fruits beyond that number cannot be preserved. (J. C. M.).—1, Curl Tail; 2, White Calville; 3, Potts' Seedling; 4, Purse-mouth; 5, Trumpington; 6, Norfolk Stone Pippin. (A. A.).—1, Passe Colmar; 2, Bergamotte Cadette; 3, Williams' Bon Chrétien; 4, Fondante d'Automne; 5, Bishop's Thumb; 6, Beurré Kestner. (W. M.).—1, Knight's Lemon Pippin; 2, Winter Greening; 3, Potts' Seedling; 4, Hawthornden; 5, Ribston Pippin; 6, Sturmer Pippin. (J. W., Pershore).—Court-Pendú Plat. (John Henderson).—The Apple cannot be identified even by comparison with the Chiswick collection. It is probably local. No. 2 Pear, Doyenné Boussoch; 3, Uvedale's St. Germain. (T. Newbold).—1, Urbaniste; 2, Henri Capron; 3, Benrre Clairgeau (small).

Names of Plants.—We only undertake to name species of plants, not varieties that have originated from seed and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in firm boxes. Slightly damp moss or soft green leaves form the best packing, dry cotton wool the worst. Not more than six specimens can be named at once. (J. H.).—Pyrus (Sorbus) pinnatifida. (J. W. L.).—The Mexican Orchid is probably Stanhopea oculata, but the flower was in such bad condition that it was difficult to recognise. You will find a good figure of it in the "Botanical Magazine," plate 5300, and in the "Botanical Register," plate 1800. Two other Mexican Stanhopeas in cultivation, but differing greatly from S. oculata in the holdness of the markings, are S. Martiana and S. tigrina, both of which are figured in the "Botanical Register," the former in 1844, plate 44, and the latter in 1839, plate 1. (J. J.).—1, Aster novae angliae; 2, Diplopappus cornifolius; 3, Alternanthera paronychioides aurea; 4, Alternanthera versicolor; 5, Alternanthera magnifica; 6, Alternanthera paronychioides major. (W. G. S.).—Fuchsia procumbens. (W. H.).—We cannot recognise the tree from leafless twigs; it somewhat resembles a Birch.

COVENT GARDEN MARKET.—OCTOBER 6TH.

The supply of soft fruit has fallen off considerably. Good samples of Cobs selling.

FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples	½ sieve	1 6 to 4 0	Melon	each	1 0 to 2 0
Cherries	½ sieve	0 0 to 0 0	Oranges	100	6 0 to 12 0
Cobs	100 lb.	50 0 to 55 0	Peaches	per doz.	4 0 to 8 0
Currents, Black ..	½ sieve	0 0 to 0 0	Pears	dozen	1 0 to 1 6
" Red	½ sieve	0 0 to 0 0	Pine Apples English ..	lb.	2 0 to 2 6
Figs	dozen	0 6 to 0 9	Plums	½ sieve	1 0 to 2 0
Grapes	lb.	0 6 to 3 0	St. Michael Pines ..	each	4 0 to 6 0
Lenons	case	10 0 to 15 0	Strawberries	per lb.	0 0 to 0 0

VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Artichokes	dozen	1 0 to 0 0	Lettuce	dozen	1 0 to 1 6
Asparagus	bundle	0 0 to 0 0	Mushrooms	punnet	0 6 to 1 0
Beans, Kidney ..	per bushel	2 0 to 3 0	Mustard and Cress ..	punnet	0 2 to 0 0
Beet, Red	dozen	1 0 to 2 0	Onions	bunch	0 3 to 0 0
Broccoli	bundle	0 0 to 0 0	Parsley	dozen bunches	2 0 to 3 0
Brussels Sprouts ..	½ sieve	0 0 to 0 0	Parsnips	dozen	1 0 to 2 0
Cabbage	dozen	1 6 to 0 0	Potatoes	cwt.	4 0 to 5 0
Capsicums	100	1 6 to 2 0	" Kidney	cwt.	4 0 to 5 0
Carrots	bunch	0 4 to 0 0	Rhubarb	bundle	0 2 to 0 6
Cauliflowers	dozen	3 0 to 4 0	Salsafy	bundle	1 0 to 1 0
Celery	bundle	1 6 to 2 0	Scorzonera	bundle	1 6 to 0 0
Coleworts	doz. bunches	2 0 to 4 0	Soakale	per basket	0 0 to 0 0
Cucumbers	each	0 3 to 0 4	Sballots	lb.	0 3 to 0 6
Endive	dozen	1 0 to 2 0	Spinach	bushel	3 0 to 4 4
Herbs	bunch	0 2 to 0 0	Tomatoes	lb.	0 2 to 0 6
Leeks	bunch	0 3 to 0 4	Turnips	bunch	0 4 to 0 0

PLANTS IN POTS.

	s. d.	s. d.		s. d.	s. d.
Aralia Sieboldi ..	dozen	9 0 to 18 0	Ficus elastica ..	each	1 6 to 7 0
Arbor vitae (golden)	dozen	0 0 to 0 0	Fuchsia	per dozen	2 6 to 6 0
" (common) ..	dozen	6 0 to 12 0	Foliage Plants, var.	each	2 0 to 10 0
Asters	per dozen	3 0 to 6 0	Heliotrope	per dozen	4 0 to 8 0
Bedding Plants, var.	doz.	0 0 to 0 0	Hydrangea	per dozen	6 0 to 12 0
Begonias	dozen	4 0 to 9 0	Ivy Geraniums ..	per dozen	0 0 to 0 0
Calceolarias	per dozen	0 0 to 0 0	Lilium anatum ..	per doz.	12 0 to 30 0
Chrysanthemum ..	dozen	6 0 to 12 0	" lancifolium ..	per doz.	0 0 to 0 0
Cineraria	dozen	0 0 to 0 0	" longiflorum ..	per doz.	0 0 to 0 0
Cockarombs	per dozen	3 0 to 4 0	Lobelia	per dozen	0 0 to 0 0
Cyperus	dozen	4 0 to 12 0	Marguerite Daisy ..	dozen	6 0 to 9 0
Dracena terminalis,	dozen	30 0 to 60 0	Mignonette	per dozen	3 0 to 6 0
" viridis	dozen	12 0 to 24 0	Musk	per dozen	0 0 to 0 0
Erica, various ..	dozen	9 0 to 12 0	Myrtles	dozen	8 0 to 12 0
Euonymus, in var.	dozen	6 0 to 18 0	Palms, in var. ..	each	2 6 to 21 0
Evergreens, in var.	dozen	6 0 to 24 0	Pelargoniums, scarlet,	doz.	3 0 to 6 0
Ferns, in variety ..	dozen	4 0 to 18 0	Pelargoniums ..	per dozen	6 0 to 9 0

CUT FLOWERS.

	s. d.	s. d.		s. d.	s. d.
Abutilons	12 bunches	2 0 to 4 0	Lily of the Valley, 12	sprays	0 0 to 0 0
Ageratum	12 bunches	2 0 to 3 0	Marguerites	12 bunches	2 0 to 8 0
Arum Lilies	12 bunches	4 0 to 6 0	Mignonette	12 bunches	1 0 to 3 0
Asters	12 bunches	0 3 to 0 6	Myosotis	12 bunches	1 6 to 3 0
Bouvardias	per bunch	0 8 to 1 0	Pelargoniums, per 12	trusses	0 9 to 1 0
Camellias	12 bunches	4 0 to 8 0	" scarlet, 12 trusses		0 3 to 0 6
Carnations	12 bunches	1 0 to 3 0	Roses	12 bunches	2 0 to 9 0
"	12 bunches	3 0 to 8 0	" (indoor), per dozen		0 8 to 2 0
Chrysanthemums 12	bunches	3 0 to 6 0	" Tea	dozen	0 9 to 1 0
"	12 bunches	1 0 to 0 6	" red	dozen	0 8 to 1 0
Coreopsis	12 bunches	0 0 to 0 0	" Moss	12 bunches	0 0 to 0 0
Cornflower	12 bunches	0 0 to 0 0	Pyrethrum	12 bunches	3 0 to 6 0
Dahlia	12 bunches	2 0 to 4 0	Spiraea	12 sprays	0 0 to 0 0
Epiphyllum	doz. bunches	0 6 to 0 0	Stephanotis	12 sprays	4 0 to 6 0
Eucharis	per dozen	2 0 to 4 0	Stocks, various ..	12 bunches	3 0 to 5 0
Gardenias	12 bunches	2 0 to 4 0	Sunflowers	"	0 6 to 1 0
Gladioli	12 bunches	9 0 to 12 0	Sweet Peas	12 bunches	2 0 to 4 0
Hyacinths, Roman, 12	sprays	0 0 to 0 0	Sweet Sultan	12 bunches	0 0 to 0 0
Lapageria, white, 12	bunches	2 0 to 4 0	Tropeolum	12 bunches	0 0 to 0 0
Lapageria, red ..	12 bunches	1 0 to 2 0	Tuberoses	12 bunches	0 4 to 1 0
" longiflorum, 12 blms.		3 0 to 6 0	Violets	12 bunches	1 0 to 0 0



CHEAP LAND.

Yes, land is very cheap either to hire or purchase—so cheap that the temptation to acquire such property is not always to be overcome. Yet, on the whole, sales are the reverse of brisk, and he is indeed a fortunate agent who has not some farms coming upon his hands this Michaelmas. Situation tells now more than it ever did in the "good times." A railway station, a town, a river, all impart a special value to property. During the past year we have had to purchase several farms, and the price of land so acquired may be quoted at about £10 an acre at that number of miles from a town or railway station, ranging upwards to about £35 an acre near a railway. Quite recently we purchased a small farm with an excellent house and farm buildings near a railway station for £31 10s. an acre, and we had no difficulty in getting five per cent. interest upon it in rent from a tenant who was waiting to hire the farm during the sale. This was a satisfactory transaction—much more so than when an outlying farm is purchased, for then it is questionable if a tenant of any kind will offer, and the land would only be purchased for some particular purpose.

That farms do not let easily this Michaelmas is shown by the large number of advertisements of farms to let that

appear daily. Fifteen shillings an acre, with tithes and parochial taxes, may be taken as an average of the rate at which mixed corn and sheep farms are now let. At this rate, if the land is sound, clean, and fertile, it ought to answer in the hands of a really clever farmer even for Wheat-growing. The mention of Wheat leads to the inquiry if after all we are doing better by growing other corn in preference to it. No doubt a good sample of Barley commands a price now which affords a fair margin of profit upon the outlay incurred in its culture, but how few and far between are such samples this autumn. The season has not been a favourable one for Barley, and most of the samples we have seen were coarse and discoloured, the price ranging from 22s. 6d. to 28s. per quarter, or a mean of 25s. If we put the crop at an average of 6 quarters an acre we have £7 10s. as the mean value per acre of Barley. The straw has undoubtedly a certain value, but it is most difficult to get a sale for it. Wheat straw on the contrary may always be calculated to command a ready sale at not less than £2 an acre; if we add to this £2 for straw, £7 12s. 6d. as the lowest amount realised per acre for any of our Wheat this season, we have a total of £9 12s. 6d., and we may certainly venture to say that by superior culture from £1 to £2 more per acre may be realised even at current prices.

Repeatedly are we told that the profitable culture of Wheat is at an end in this country. We cannot admit that it is, but we are bound to own that the margin of profit upon it has become so narrow that in the hands of an unskilful farmer Wheat culture may prove the reverse of profitable now. Every foreign country having a superabundance of Wheat sends much of its surplus to this country as one of the best markets in the world. Several of our colonies send us large quantities, and India is fast assuming the leading place in this competition with the British farmer. "To what are we coming?" is the query which we frequently hear now when at market. It will, therefore, prove at least interesting to our readers to know that there are not only bounds to the downward tendency of the price of Wheat, but that there is also the possibility of a recovery in prices. In an important article on "Silver and Wheat," recently published in the *St. James's Gazette*, we are told that "One of the most important questions for the consideration of the Gold and Silver Commission is that of the degree in which the depreciation of silver affects the price of agricultural produce. It is understood that our farmers must take their chance under the system of free trade, but not, perhaps, that they should be handicapped by what to all intents and purposes is a heavy bounty on imported produce. Such a bounty is available to every exporting country in which a silver currency prevails. The most familiar example is that of India, and Wheat is the only agricultural commodity sent here from India which seriously competes with home produce.

"The exchange value of the rupee has recently only been a small fraction above 1s. 4d., and although there has since been a spurt in an upward direction, it is expected that the rate will settle down again to about this figure, more or less. Now, the low exchange value of the rupee enables the exporter of Indian Wheat to get a profit which would be impossible if the rupee were at par. Suppose, for instance, that he buys Wheat at Jubbulpore at the rate of 10 rupees per qr. when the sea freight to this country is 6s. per qr. According to some precise calculations recently made by the *Times of India*, the cost of landing Wheat in England would stand thus:—

Cost at Jubbulpore per qr...	Rs. 10 0 0
Railway freight to Bombay	3 9 3
Sea freight at 6s. per qr., with exchange at 1s. 4d.	4 8 0
Trade charges	3 10 5

Total Rs. 21 11 8

"If the rupee were exchangeable at exactly 1s. 4d., this would be within a small fraction of 29s. per qr., so that even

if Wheat were as low as 30s. in London, there would be a profit, and the exporter could keep on giving 10 rupees at Jubbulpore. But if the rupee exchanged at its old par value of 2s., other charges remaining the same, the cost of the same Wheat in England would be 40s. 6d. per qr. Instead of being able to sell in London at 30s., he would require 40s. 6d. to yield him the small profit of 1s. per qr. The consequence would be that the export of Indian Wheat would cease until price rose considerably, which would soon happen, as Wheat cannot be produced profitably anywhere in the world to sell in London at 30s. per qr., and it never would have been down to that price if the exchange value of the rupee had not sunk so low. Of course, if the value of the rupee in the interior of India fluctuated as in London, the rate of exchange would not afford a bounty on the export of Wheat; but for rent, interest, and the few other payments the ryot has to make, the rupee is practically unchanged from its old value of about 2s. In effect, therefore, the buyer of Wheat in India for export to this country has for some time past been getting two shillings' worth of that commodity for 1s. 6d. or less."

WORK ON THE HOME FARM.

Again are we obliged by low prices for corn to turn some part of it to account for sheep and pig feeding. Oats are so cheap that we shall probably use the whole of some 600 bushels of Black Tartarians which we have just threshed for sheep-feeding, in preference to buying oilcake. 13s. per qr. was the highest offer we had when offering these Oats for sale; that offer was declined without hesitation, pointing as it did clearly to middleman's profits at the expense of grower and consumer. We have now got the steam saw at work daily upon timber cut down last winter, as we have urgent need of some two hundred field gates. After the wood is cut out with the saw a man, having the help of a mortising machine, can make three field gates in a day; without a mortiser he would not do more than two gates. We are now particularly engaged upon field fencing, hedges, and gates. Nor is this the first time we have had to set right broken fences and worn-out gates. False economy, penny wise, pound foolish, say we, is the by far too common practice of leaving such important matters without attention for several years. In the end a serious outlay is involved to repair or rather renew them, but timely attention would have saved much money, and we venture to add much discontent on the part of the tenants. Stout oak gates are used by us everywhere upon the farms, and it is our invariable practice to give posts, gates and fences a thorough coating of tar as they are put up. Avoid deal gates, for though cheap to purchase they are neither durable nor strong. A kick by a horse will often smash them, but it is even worse when they are put up without paint or tar, as the tenons soon decay and the gates tumble to pieces. Even in the simple matter of gate posts there is incredible stupidity and carelessness. Repeatedly have we found old posts with flat tops upon which wet lies, soaks into the posts and causes speedy decay. If only a sharp slope is given to the top by one cut of a saw and the entire post well tarred no wet can lodge upon it, and we have done our best to preserve it. In putting up new gates we always like to have a stout sill of rough oak timber under the surface of the road, to keep the posts securely in position and prevent any of the common vexation of a badly hung gate; for no matter how stout a post may be, if it is without such support there is always some risk of its being loosened in the soil by the swinging of the gate.

METEOROLOGICAL OBSERVATIONS.


CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude, 111 feet.

DATE.		9 A.M.					IN THE DAY.					Rain
1886. September and October.		Baromet- er at 324 Level	Hygrome- ter.		Direction of Wind.	Temp. of Soil at 1 foot.	Shade Tem- perature.		Radiation Temperature			
			Dry.	Wet.			Max.	Min.	In sun.	On grass		
		Inches.	deg.	deg.		deg.	deg.	deg.	deg.	deg.	In.	
Sunday	26	30.003	55.2	53.6	S.	56.0	63.1	50.6	92.2	47.4	0.192	
Monday	27	30.009	58.1	54.9	S.W.	55.6	62.3	48.8	77.2	42.7	0.389	
Tuesday	28	30.132	54.8	50.8	S.	55.8	63.7	48.9	103.2	43.6	—	
Wednesday ..	29	30.049	63.2	60.1	E.	56.4	71.6	54.8	115.2	50.3	—	
Thursday	30	29.995	60.5	55.9	S.W.	57.2	66.1	55.9	91.6	48.6	—	
Friday	1	29.689	56.8	56.4	E.	56.4	77.3	48.6	110.8	42.3	0.052	
Saturday	2	29.911	55.2	50.8	W.	57.2	66.3	47.9	103.6	43.1	—	
		29.982	57.7	54.8		56.4	67.2	50.8	99.1	45.4	0.633	

REMARKS.

26th.—A wet morning; fine afterwards.
27th.—Dull and windy; wet in late afternoon and in evening.
28th.—A fine bright morning; dull afternoon and evening.
29th.—A glorious day—bright and warm, with strong S.W. breeze.
30th.—Bright early; dull overcast morning; fine bright afternoon and evening.
1st.—Fog early; a glorious day; heavy rain in evening.
2nd.—A delightful day.
A warm and summer-like week. Temperature 5° above the average, and 3° above that of the preceding week.—G. J. SYMONS.



COMING EVENTS

14	TH	
15	F	
16	S	
17	SUN	17TH SUNDAY AFTER TRINITY.
18	M	
19	TU	
20	W	Sale of Bulbs at Mr. Stevens' Rooms, Covent Garden.

NOTES ON ROSES.

THE analyses of Roses and Dahlias contributed to the Journal by "E. M." are always of great interest, and are especially valuable as records, owing to the great care and accuracy with which they are compiled. Of course, the Rose analysis on page 294, having reference only to some 1500 blooms shown at a single exhibition, cannot be regarded as fixing the actual value of any variety with anything like the accuracy of the analysis of 1884, which was compiled from the many thousands of winning blooms exhibited during a period of eight years. But while the latter may be considered as the standard, giving the average position of established varieties, an annual analysis is most useful, particularly when considered in connection with the weather report, as indicating the behaviour of certain varieties in special seasons, and as showing the novelties that are coming to the front. The good places obtained by Mons. Noman, Marie Cointet, Jean Ducher, and especially Boieldieu and La Boule d'Or, all very solid Roses, impatient of wet, and requiring all the sunshine they can get, give a pretty good clue to the weather that prevailed at the time. The daily baking under unclouded sun, however, suited some of the more recent Roses admirably. Lady Mary Fitzwilliam was magnificent, especially at the Crystal Palace on the 3rd July, where the two leading boxes of eighteen trusses were almost faultless; and it also furnished the best twelve of any Rose at South Kensington. It is objected that this Rose does not make wood; but it makes flowers, which is of more use to exhibitors. It is true that sometimes one notices a fine flower, and having cut it, finds it necessary to insert a stick to indicate where the plant is; but then another shoot will come up bearing another grand bloom. Practically every flower is fit for exhibition, and if the proportion of wood to the number of available blooms be considered, it will probably not be found far below the average. Of whatever is made, certainly nothing is wasted, for who has ever seen a flowerless growth on her ladyship? Merveille de Lyon is white enough, but too often has the centre of the flower exposed to be quite satisfactory; probably it will be better in a cooler season.

Violette Bouyer is a lovely Rose, the only fault of which lies in its liability to mildew; but even that does not prevent its flowering freely in the autumn. Occasionally in July and frequently in September one gets a pure white bloom, but as a rule the outer part of the petals are suffused with a tender rosy flush like the blush on a fair maid's cheek. And she is faithful too. Early to come and lingering to the last, she is constant as she is fair. If I were ever reduced to growing only two Hybrid Perpetuals, assuming that nothing better were produced in the meantime, my choice, after having grown nearly all the varieties in cultivation, would be A. K. Williams and Violette Bouyer.

Ulrich Brunner is another valuable Rose that merits all the praise that Mr. Cant bestows upon it, and is another case in support of the desirability of sowing the contents of all the

heps that ripen irrespective of their source. Who would have expected Paul Neyron, the sluggish-growing, coarse-flowered, rough, dingy-coloured, fit-only-for-pickling kind of Rose, to produce a seedling refined in form and colour, a model of freedom and vigour, and an autumnal bloomer not liable to mildew? Ormonde from a dray-horse would not have seemed more improbable. Moral, O amateurs!—Even if you have not leisure to effect and keep a record of artificial crosses, at least sow the chance heps; for, as "D., Deal," says, though there are a good many blanks in the lottery of raising seedlings, still there will be some prizes. Heinrich Schultheis is a first-rate Rose, but has this year been difficult to show in good condition, as it is a Rose that develops very rapidly on a journey in hot weather. The same may be said of Pride of Waltham, which is certainly easier to get good than Marie Finger. I have grown the two side by side, and have frequently found that when the one is not available the other is ready to hand; but I always use Marie Finger if possible on account of its greater purity of colour, Pride of Waltham having a slight lilac shade, derived from its parent Comtesse d'Oxford, which sometimes makes it look rather dull after a long journey.

Rosieriste Jacobs has been very useful this year, its stiff petals resisting admirably the great heat. It is very free-flowering and thoroughly perpetual, and comes about half-way between Duc de Wellington and Horace Vernet, although quite distinct from both. During the past month amongst an abundance of Roses it has been quite one of the best darks. Madame Isaac Perrière is generally rough, though now and then a fine example like Mr. Haywood's triplet at Reigate this year tempts one to grow it on, and it always makes a grand plant, whether as standard, bush, or on a wall. In fact, it is on big freely grown plants that one gets the best chance of refined flowers, while it is a true Bourbon in bearing a profusion of bloom both in summer and autumn. Queen of Queens I have already discarded owing to its dingy colour, its disinclination to grow, and its intense affinity for mildew on my soil.

Etoile de Lyon certainly requires a hot season, but both last year and this it has been very beautiful, and Madame Cusin is most effective when grown under glass. Of all the recent Tea-scented Roses, however, the Hon. Edith Giffard is by far the most generally valuable. Its sturdy habit and handsome foliage make it a good garden plant, although it is one of the best exhibition Teas; the flowers, which are large and pure white, with a creamy base in dull weather, are especially decorative on the plant owing to their being held boldly up on stiff erect stems, whereby also the exhibitor is saved the trouble of wiring, and the variety, moreover, is rendered very desirable for massing, blooming profusely early and late. Princess of Wales does not seem to throw large maiden blooms, and the plants are generally small, but when transplanted they grow steadily on, and as cut-backs produce abundance of beautiful flowers. That Madame de Watteville is as good from the exhibitor's point of view as she is beautiful, has been conclusively proved this season by Mr. Benjamin Cant, from whose winning collections this exquisite and very distinct Tea was hardly ever absent, while the same exhibitor's first prize box of twelve blooms in the new Rose class both this and last year furnished one of the most dainty attractions at South Kensington. It has been objected by some growers that the flowers are too small and thin, but this has certainly not been my experience, and is probably an objection that will pass away as plants become stronger and better established.

"Y. B. A. Z." seems to have written his note (on page 322), without reading "E. M.'s" preamble, where the main points of the analysis of the South Kensington Show are definitely stated; and it is further obvious that "E. M." did not consider the analysis of the Roses shown in a single season (or at a single show) to be a reliable guide to the selection of the best varieties, as he gives a special list, for

the benefit of beginners, in which only half the first twelve of the analysis are found. The remarks on Duchesse de Val-lombrosa and Marie Baumann afford additional evidence of the fads of certain Roses in regard to locality. With me the former is one of the most reliable light Hybrid Perpetuals, a handsome plant with magnificent foliage, large flowers, fresh and constant. This variety and Violette Bouyer were the only two that furnished me with good boxes of twelve and eighteen blooms this year, and were continuously and uniformly good. It may be noted that our soil is not of the heaviest, and the rainfall below the average, still that is hardly sufficient to account for the difference of her Grace's behaviour with "Y. B. A. Z." in a season like that just past. Etoile de Lyon again, has, during the last three years, been very beautiful, but its petals are thin and so numerous that a shower sticks them together. Nevertheless, for those who have glass it is a grand Rose.

But now for Marie Baumann. I have grown it on clay, and I have grown it on sandy soil, on mixtures of all sorts, on peaty soil even, with much manure and with little manure; I have tried it on its own roots, budded on standards, on seedling Briar, on Briar cuttings, on Manetti, on De la Grifferaie, on Polyantha. I have grown more plants of it than of any other variety except A. K. Williams, and yet I have never obtained but one bloom that gave me real satisfaction, and that a maiden on a standard. It is sometimes respectable, but from all these plants I have never been able to show a box of twelve blooms; it gets mildew with an eagerness that is most uncalled for, and in spite of every effort I can make in its favour the plants continue apparently quite lacking in vital energy. I think "E. M." is quite right to exclude pendulous flowers from a small selection, as unless the plant be a climber they are ineffective in the garden and difficult to manipulate in vases when cut. Thus Madame Lambard makes a far more decorative plant than Catherine Mermet, though I own to finding it far easier to get good blooms of the latter than of the former, another instance perhaps of the "locality fad."

The suggestion mooted by "D., Deal," of providing trophies for northern championships should commend itself to all rosarians throughout the country. The difficulties of Rose-growing in the north, and also in the midlands are immense in comparison with those experienced by growers in the southern counties, and it has long been felt the northern Show ought to provide the northern growers with a chance of honours equal to those bestowed upon the southerners in London. No time should be lost in getting the necessary funds and settling details, for the northern championships could not possibly be more appropriately inaugurated than at the Scottish capital, where the National Rose Society's provincial show is to be held next July. How would the following do for a division line between north and south? Start from the Wash, follow the southern border of Lincolnshire, Nottinghamshire, Derbyshire, Staffordshire, Cheshire, Flintshire, Denbighshire, Carnarvonshire, finishing at Braich-y-Pwll; so that the above-named shires should be the southernmost of those eligible to compete for the northern championship? It would seem desirable to take county borders for a line, or it would be almost impossible to decide upon the local qualification of certain places.

There should be no difficulty about means, for if each member of the National Rose Society were to subscribe six shillings the thing would be done; and surely no member would be willing to miss an opportunity of so cheaply advancing the cause of their favourite flower. For no doubt many northern growers who would think it hopeless ever to be in time to compete successfully against their earlier brethren in the south, would readily compete later, and thus Rose-growing might receive an impetus in the north which might eventually result in making the provincial exhibition equal to that held in London.

I hope "D., Deal," will not think me hypercritical in pointing out that he assumes the role of prophet in placing

Hereford among the counties to which the amateur championship trophy has gone. That he is no doubt a true prophet we readily grant, nor need the Apple county's hope end yet awhile of seeing the prophecy quickly fulfilled; but in the meantime Sussex and Surrey may as well have the glory of what they have actually achieved.

I have just one little bone to pick with "Wild Rose" for speaking of Cheshunt Hybrid and Reine Marie Henriette as if they were the same colour. One of the chief merits of the latter is that its flowers are almost pure red with hardly a shade of blue in them, while those of the former have so much of the blue tint as almost to appear lilac, especially when fading. This dingy colour is to my mind the most fatal objection to all these red Hybrid Teas except Reine Marie Henriette, whose flowers remain bright and clear to the last; and it is an insult to the purity of the one that it should be confounded with the dull mixed shades of these very mixed Hybrids. There, having relieved my feelings, I will conclude by saying that "Wild Rose's" descriptions of the two new Roses under notice, American Beauty and the Bride, exactly answer to the flowers as they have bloomed with me, and that the latter appears likely to prove a most valuable acquisition as a large white Tea of first-rate quality.—T. W. G.

ABOUT APPLES.

THERE is no better time than the present for attending to Apple trees, old and young. The older trees are very much benefited by the removal of main branches when these become too thickly placed, and the ease and rapidity with which a large number of trees can be disbranched now would of itself render the operation one worth recommending to be undertaken at once. When it is considered that the amount of pruning required when the foliage is yet upon the trees can be gauged to a nicety quite unattainable during winter, then we have a stronger reason for the work being done immediately. Further, branches cut off now or even earlier are less likely to injure the trees than in the winter season. Another item in the successful management of old trees which can be undertaken with more certainty than later refers to thinning the spurs when these are too thickly placed. The strongest and best-ripened spurs can be selected and left, and those spurs with weakly buds cut clean out. These never do any good, for although fruit may be borne on such growths the quality is always poor, and in cases where the fruit is thinned it would have to be removed. Moreover, if left as leaf-producers only the benefit derived from them is very uncertain, as a few strong well-developed leaves are worth a multitude of weakly ones under any circumstances. Young trees, if not already pruned, should be seen to at once. Our rule is to examine the trees when the fruit is gathered, and do any little pruning that may be required, at the same time removing any shoots that may be misplaced. Growers who have not pruned early may consider this plan a wasteful one, but in reality pruning young trees which have been well attended to requires but little time. The advantages are that we see exactly where shoots are becoming too thickly placed, and the buds left are greatly benefited by receiving all the light and air possible, while there is no waste in food at this most critical period in the formation of the following year's fruit buds.

Where young trees are regularly lifted and replanted, the middle of the present month is quite late enough for such work. Well-managed trees form balls of roots which under ordinarily good conditions can be safely removed at this season. The consequences of a good shift are that the plants receive merely a slight check at the time, which though deterrent to growth is of advantage as a fruit stimulant, and the fruit of the following year is of much finer quality than that from unchecked trees: indeed, the only means of securing really fine fruits is by periodical removal of the trees. At the same time, when trees have not been regularly transplanted it is much better to let the work stand until the foliage is falling, as such trees if lifted when in full leafage are sure to flag, and as a rule they lose a season; whereas, if transplanted later and the roots carefully looked to, the subsequent season's growth is much better. In addition to the present time being best for pruning young trees, it is also best for supplying the roots with fresh material. Young trees which are not lifted, provided always they are bearing crops of fruit—and if the right varieties are grown that is reduced almost to a certainty—must be well fed. The rudest method of attaining this end is to place a mulching of cow manure over the roots; but efficient as the above may be under certain circumstances, much better fruit is produced when greater care is bestowed. A method

we have found very beneficial in its results consists in clearing off all the surface soil until the upper layer of roots is uncovered, then place over and work among the roots a good dressing of soil from the compost heap formed by the decayed rubbish brought from the garden. A slight layer of soil is then placed over this surface, and if a good set of fruit is secured the following summer a mulching of dung will be found of great benefit.

Older trees of over-strong growth, and which produce large soft fruits, may be brought back to a better state of health by digging well under the roots from one side, cutting all the strong roots which are met with, especially taking care to get any which may be growing downwards. Provided the check is sufficient to increase at once the fruitfulness and improve the quality of the fruit the trees should be left for two years, when the other half of the trees should be done in the same way. However, if the check to growth has been insufficient, in the following autumn the trees should be root-pruned all round and underneath.

As to preparing ground for young trees, it may be of interest to state that our finest fruits, both as regards size and colour, are grown on the poorest and shallowest part of the garden. Warner's King and Stirling Castle are about double the size of specimens from other parts of the garden. King of the Pippins is also double in size and better coloured. Kerry Pippin is much finer in quality and appearance, and it is much the same with others. The dressing given to the ground consisted merely of a very thick coating of decayed rubbish-compost, which was well worked through among the soil. Our experience gained with Apples has led to this somewhat despised material being employed for other fruits, notably Apricots, the same good result following with these.

Just a few words of warning to beginners. The present is a test season with Apples. In many gardens there are very few Apples, and the reason is simple and apparent. Only a few varieties have borne fruit this year, and although these invariably carry crops, gardeners when planting overlook this fact and fritter away their means on a greater or less number of sorts, many of which never pay their way. By the simple process of increasing a few sorts which were found to bear well in all seasons we have not only a sufficient quantity of Apples with which to provide a large household, but some hundredweights to dispose of. As young trees advance, and unprofitable croppers are removed, we hope to be able to secure crops from all our trees, and that we shall be able to crop sufficiently light to secure the very best fruits without in any way burdening the trees in any season.—B.

THE AMBURY OR CABBAGE DISEASE.

I BELIEVE the name ambury is the original and proper name, but in some localities it is known by others, the most common of which is clubbing; but whichever it is known by, there is no question about its being a most annoying and destructive disease which for many years has affected the Cabbage family. This season it is more prevalent than I have seen or known before. Plantations of acres have in some instances quite one-half of the plants rendered worthless, while in the gardens of the amateur and cottager nearly the whole have suffered severely. It matters little whether on light or heavy land, all seem to be affected alike.

It is somewhat singular that up to now the disease seems to have baffled all attempts to eradicate it—that is, if any attempts have really been made. I, however, am afraid that many cultivators have trusted to chance rather than experiment upon a crop they think common, and must therefore take care of itself. Such neglect has this season proved very costly. During more than twenty years' experience I have been little troubled with the disease, for the means I adopt, I think I remember reading in the numbers of the *Cottage Gardener* and afterwards published in the "Cottage Gardeners' Dictionary," but as many do not see that work I will endeavour to reach them through the Journal. That account states that the disease is caused by a weevil too small to be seen with the naked eye, and that the disease originates in the seed bed, which is quite true; therefore the allotted space for the seed bed should have a special preparation by first working down the soil very fine, at the same time working in a fair quantity of quicklime and soot in equal proportions, thoroughly mixing it with the soil; then sow the seed, working it in with the rake, which will cover it sufficiently. As soon as the plants are large enough to pick out, as that process goes on, examine every plant at the root, when some of the most forward plants, if attacked, will show a small lump at the side of the stem just above the root. This may not be larger than a pin's head, but it should be cut out. It is not, however, at this time that the disease can be fully discovered, but it is when the plants are larger and about to be transferred to their final quarters, when a close examination ought to be made; the eruption is then larger, and nearly every plant affected can be picked out. Take the lump off with a sharp knife, and the plants will not be

injured; but as an extra precaution I make it a rule for the plants to be puddled or dipped in a mixture of soot and quicklime of equal quantities, making it the thickness of paint by the addition of water and finely sifted soil, and then finally planted, but not watered for two or three days, or the value of the remedy is weakened. I am aware that all do not raise their own plants; but, at all events, if people will take the trouble to examine those they purchase and treat them as I advise the ravages of the disease will be reduced to a minimum. Plants should not stand too long in the seed bed. I have seen several hundreds of plants that have been sent by rail during the summer, and on an examination the number of those attacked ranged from 20 to 46 per cent. No wonder at failure if such were planted out. A change of position for the seed beds, or if not a change of soil, has proved a check to the inroads of the disease.—THOMAS RECORD.

PLANTING TREES AND SHRUBS.

WHEN is the proper time to plant trees and shrubs? is a question that even experienced planters often ask. They have perhaps planted extensively and seen the work of others with probably many failures. Wise-ones of course have a knack of knowing all about it, particularly when free of responsibility, but instead of being prepared with anything definite are as tantalising by their solutions as the result is vexatious to the operator and disastrous to the proprietor. Trees may be planted in similar soil and climate at a similar time with no apparent difference in the plants or variety, but there is a great difference in the success. It is admittedly wrong to plant a tree or shrub when making growth, as transplanting in its full sense means loss of the younger and more active feeders or roots, so that the tree or shrub must suffer a considerable diminution of support, and there is considerably greater risk of injury to the growth from the loss by evaporation, therefore it is not advisable to move a tree when it is in active growth. It is not judicious to move a tree or shrub after it has commenced growing until the growth is completed and firm, so that it will suffer least from loss of roots in support. Planting trees at the dead of winter is inadvisable for several reasons. 1, The exposure of the roots to cold and frost or cutting winds. 2, The cold wet condition of the soil is not favourable to securing the plant firmly in the soil, whilst in heavy soils the loosened soil is little better than a mud hole during the winter. 3, The plants cannot be properly secured in the ground. Happily the weather prevents planting operations in winter to a large extent. The right time to plant most trees and shrubs is in mild weather, the air calm and moist, and the ground in good working order. There is not a wrong time, from when the leaves of deciduous trees are turning yellow and falling until the buds begin to swell, provided the conditions just enumerated prevail. Such at least is my experience. With evergreens it also holds good. The whole art of transplanting rests upon a few plain facts—viz., 1st, Carefully rearing the plants intended for moving so as to secure a sturdy, well furnished, thoroughly hardy plant with abundance of roots close to the stem. 2nd, Careful lifting, preserving all the roots practicable, and if the soil must be removed doing it with as little violence as is necessary in order to prevent injury—skinning, bruising or breaking the roots. 3rd, Keeping the roots out of the sun and from the drying influences of the air as much as possible, and above all other things from frost. 4th, Keeping them thin when out of the ground, so that the top can have air, instead of that reprehensible practice of tying in large bundles that may and do heat in the middle, or piling in heaps, in trucks or otherwise. These are matters that belong to the nurseryman—the rearer and vendor. That this part is done well redounds much to the credit of the established firms, but there is room for improvement. If the trees are not properly reared no planter can make them grow, yet much of the blame that should attach to the vendor is put on the customer. Thickly grown and infrequently transplanted trees are dear at a gift.

On the part of the planter the art of transplantation consists of—1st, Preparing the ground, it may only be moor land that only needs clearing of coarse scrub, draining wet places by open ditches, and the accompanying lesser grips or woods that demand similar attention, or more pretentious groups of ornamental trees that require the ground for a speedy growth and cleanliness to be trenched after draining, primary considerations that are not sometimes seen until the failure or ill-success of the plantings claim attention. 2nd, In receiving the plants, lay them in the soil in a convenient position and suitable site, not selecting a spot where water will lodge in the trench, or on the other hand devoid of moisture, undoing the bundles, and laying them in thinly, so that the plants can have air and light and the roots the needful moisture—not the mere outside of the bundles damp whilst the inside is dry—and the soil not put on the roots in great spitsfuls, but broken fine, so that it will close about the roots, and enough of it put over them to exclude drought, cold, and frost. 3rd, In planting, the operator must form a hole large enough to admit the roots without having to twist them into a corkscrew to cram and double them in, nor have the hole so shallow that the tree must be placed on the hard bottom or "pan," but so that it will have some loose good soil for the roots to rest on. If not deep enough sink it, and if too deep put in soil to raise it, so that the tree will be planted as deeply as it was before, or if anything slightly deeper. Cover the roots with fine good soil, spreading them out in layers, giving a gentle shake, so as to draw and fix the soil about the roots and amongst them. Firm the soil well about the roots, not leaving any interstices by putting in great chunks, have the tree as erect as possible, and the soil disposed on the surface

face. A simple thing is planting a tree neatly and properly, requiring, like everything else, care, time, judgment, and skill in labour, perhaps very little regarded, but all the same forming the basis of success. 4th, Before planting, any broken or jagged roots must be cut away, any top or straggling roots shortened back, not with a long slanting cut, but with as short a one as possible. 5th, After planting stakes will be given to such as require it, with the needful ties to prevent scrubbing and rubbing, and after a wind any that have their equilibrium disturbed will be put straight, and fine soil placed about the stems so as to close the holes. 6th, The plants should not be withdrawn from the place where laid in until they are wanted, never when frost prevails, and they must not be kept hours with their roots exposed to a bleak or drying wind, nor left in the sun for hours, but be kept from the air as much as possible, and placed into the soil again after they are taken out as soon as practicable. 7th, The plants in summer after planting must not be allowed to get smothered with rubbish—coarse weeds and grass; but keep a clear space around each plant, so that it can have air, light, and the benefit of rain. These are the principles upon which general planting may be conducted. More trees are planted from November to April than at any other time of year, and yet we find some experimentalists continually dinning into our ears the details of moving trees in leaf in May or June, and of others in August or September, forgetting to take into account that the increased labour of such transplantation prohibits its general adoption. For general planting the winter season is preferable on account of the lessened risk and labour entailed, or that part of it which comes under the category of forestry, but ornamental planting is of different character.—A. J.

PITHY CELERY.

NOTHING is more disappointing in vegetable-growing than to sow Celery seed carefully in spring, devoting a great deal of attention to rearing the young plants, putting them out in the trenches with much care, and earthing them in due season, but only to find in October or November that the majority of the plants are pithy and almost useless. That this happens in many cases there is no doubt, and many growers are caused a great deal of inconvenience by it, as the Celery crop is at all times and in all places a most important one, and few can afford to lose it with impunity. I may explain to beginners that "pithy" Celery is that which develops freely and promises well, but is altogether deceptive, as the fine-looking leafstalks instead of being firm and solid may be pressed together with the finger and thumb like a sponge. Celery of this kind is never relished on the table, and what is worse it will not keep, as it soon absorbs a great deal of moisture and decays quickly. It is impossible to remedy this now, but those who know little or nothing of it may have a better chance of noticing it at present than any other time. Many causes have been published from time to time as to the production of pithy Celery, some thinking it was a question of too old seed, others too young seed; but in my opinion the seed has nothing to do with it, neither has the variety, as one is just as liable to become pithy as another. The soil in which the plants are grown is the sole cause of it so far as I can observe by experiment, and I would undertake to produce Celery either pithy or not in any season.

The soil in the main kitchen garden here is old, and contains a great deal of decayed vegetable matter. Here we have tried Celery time after time, and it invariably became pithy in the autumn. Another smaller garden contains soil equally old in its cultivation, but it is sharp and gritty, and in this pithy Celery is unknown. Indeed, we confine the Celery crop to this soil now, and we are never troubled with pithy plants. If I wanted to cure a soil which produced pithy heads I would mix a great deal of sharp sand or ashes with it only manure moderately, and get the plants to make a substantial growth in the place of a very rank production. In such a soil as I recommend worms are not common, and the heads not only turn out sound but quite free from worm marks, which is another great advantage.—J. MUIR.

AMATEURS.

I AM much obliged to "D., Deal," for answering my query and giving an explanation. Although he is a judge at shows, and has vastly more experience than I pretend to, the subject is by no means explained by his questions, which are not difficult to answer—viz., in England there are persons who go in the capacity of groom and gardener, also of indoor servant and gardener combined. A friend of mine had for two years an excellent valet and butler and footman. This man was brought up as a professional gardener in a nursery at Oxford, took prizes for Roses at Malvern, Hereford and Shrewsbury, and Ludlow. A gardener by profession, his master, the amateur, had no right to compete in amateur classes, because he never touched a Rose except to cut one. His butler, formerly professional gardener at Oxford, grew from the first. No man brought up as a professional gardener, doing all the work, and the amateur owner of the article, be it Roses or Melons, and doing nothing but the buying and admiring part of the business, can be called an amateur. *Bona fide* amateurs do all the work themselves, except the digging and

manuring of ground, which always must be done in case of a lady or gentleman by a common labourer, who, not having been trained professionally under a gardener or in a nursery, is not termed and never claims the name gardener. Query, "Does one who has a gardener in for three or four days in a week come under the same description?" Answer, "Most certainly. I have an excellent one; he grows what I tell him. Not my Begonias, Pelargoniums, &c.; he never touches these from year's end to year's end, and I should not think of showing publicly any of the things he grows as grown by myself amateur fashion. Again, does it mean employing anyone who is a gardener by profession? Most certainly it does, and in this showing business in horticulture the words amateur and professional should be made as strict, and the difference between them as fully recognised as it is on the turf in the cricketing and boating world. Pray excuse me, but such queries from a very capable judge require an answer from the person who started this subject. In conclusion, allow me to thank the Editor and "D., Deal," for opening up a subject that has evidently met with approval from some readers of the Journal.—SAXORING.

GROWING FRUIT FOR MARKET.

"A THINKER'S" gentle and excellent criticism of my selections of fruit trees for marketing is highly seasonable. I quite agree, as your acute correspondent states, that there is not much utilitarianism in growing many varieties where a short selection would be more profitable. Supplying the markets is quite different from supplying a gentleman's establishment. Out of some hundreds of varieties those I have named have brought the best returns from the salesmen. Any not mentioned are either not grown or they have not shown any value, either from poorness of crop or quality for marketing purposes. In reducing the lists of varieties I have made a move in the right direction, and with all deference to your correspondent I consider them as limited as they ought to be for an establishment conducted on utilitarian principles, as many gardens are at the present time. The short selection of your correspondent includes only culinary varieties. Are the dwellers in our large town houses to have no dessert Plums? Surely your correspondent knows, or ought to know, that these are the largest purchasers of fruit. Out of thirty varieties of Plums for market, only one is singled out through not being able to regard it as profitable. This as evidence of the estimation in which the list is held by your correspondent, indeed he describes them as "many good Plums for market." Oullips Golden is the only early Plum that we have that combines the three essentials of appearance, size, and quality for dessert purposes, and possesses a hardy constitution. It certainly is not a great bearer, but what is lacking in bulk is made up by the enhanced value through its quality. If it bore better it would, of course, be better worth keeping, but if we discard it I do not see what is to take its place. Then as to Pears, I thought I had made it all right as to Windsor, and I do not think it is at all "gentle" to reproach anyone making a mistake, even if it be wilful, which has been admitted and rectified. As to Swan's Egg and Seckle Pears, it is stated on page 298 that the small Pears are omitted. Their quality is good, even "A Thinker" describes one of them as rich. I stated "They are great bearers, and unsurpassed for quality." Perhaps your correspondent will tell us what large Pear has the richness of Seckle, or the agreeable musk of Swan's Egg, not to mention Aston Town and Autumn Bergamot. They have left as strong an impression on some palates as have the good old Windsor, so that the claims of quality cannot always be safely ignored; besides, what is wanting in bulk one way is made up in another, and all tastes, or rather the pockets, must be met. This is an aspect of the case I really did not take into consideration, and I have reason to thank your correspondent.

As to Beurré Capiaumont being "poor and poor-looking," I can only say that the estimates should be founded on experience. In the north, Beurré Capiaumont is anything but "poor and poor-looking," being the brightest in colour, and there are many worse in quality taken from trees on a wall. Perhaps "A Thinker" takes his prompting from the "sunny south." If so, it will only show the desirability of a more extended exchange of views. Fruit is not alike everywhere.

In the matter of Apples "Thinker" appears to have got more than a trifle mixed. His first objection is to the Queen as a dessert sort, and points to the "Fruit Manual" as verification of its being a culinary Apple. Whatever may be its strict character, the Queen is large and very handsome, and would pass with most people as a dessert or culinary Apple, though it might be too acid for some. That is a matter of taste. That "A Thinker" is a bold man we need no further proof than in his manifest advising of the displacement of Blenheim Pippin by Cobham. I have no objection, only if you have trees of Blenheim Pippin I say, Decidedly do not seek to displace them by Cobham. They are equally fine. If going to plant I should certainly follow the lead of your correspondent were everything to be subordinated to getting fruit in the shortest time. Emperor Alexander is too light. All I can say is, it weighs the pockets heavier than any other Apple of its season. The "Fruit Manual" states it to be "a beautiful and valuable Apple." This, as a set-off to "A Thinker's" remarks on the Queen. I am pleased to know Lord Derby overweights it. Apples are not sold everywhere by weight. It is pleasing to have to grant a point in favour of Lane's Prince Albert over Loddington. What is "Thinker's" experience of Lane's Prince Albert as a standard? I have it only as a wall tree, and in the open on the Paradise. As to Worcester Pearmain it is as much one as the other—i.e., culinary or dessert—one of the highest coloured and most taking fruits. Yorkshire Beauty being unknown to your correspondent I may say that it is "Large, round, angular, orange yellow, flushed bright red, second quality, mid-season; a very heavy cropper" in "British

Apples," and I find it is early, and the most taking of all the culinary Apples of its season. It is a real pleasure to have the satisfaction of knowing that out of the many varieties enumerated your correspondent only excludes two, for which he is able to find substitutes.—UTILITARIAN.

CATTLEYA TRIANÆ VAR. BACKHOUSIANA.

CATTLEYA TRIANÆ is one of the most useful and popular species of the grand genus *Cattleya*, and it is also one of the most variable. Some scores of varieties have been honoured with names, and nearly every importation brings some forms differing from those we already have in depth of colouring, markings, or size of flower. So trifling are the differences between them that the task of naming them has become an extremely difficult one; in fact, in most large collections now names are

ciety's Catalogue. As one of the Committee entrusted with the preparation of the Catalogue, I hope no one who has the least interest in seeing a satisfactory catalogue issued at some future date, will hesitate for a moment in pointing out anything in the present edition that does not meet with their approval. The Society gave ample notice that a new edition of the Catalogue would be issued, and would only have been too pleased to have received suggestions that would in any way improve the former edition, but strange to say very few took sufficient interest in the work to send suggestions, and the Committee had to revise the old edition from their own experience. The Catalogue is not intended to strictly bind judges or exhibitors, but is simply issued as a guide, so that I cannot see that anyone runs any risk of disqualification unless they ignore the synonyms. If any exhibitor stages blooms otherwise than guided by the Catalogue, it is for the judges to use their discretion; but if the judges are of opinion that any bloom is shown in a wrong class, and they find the exhibitor has followed the catalogue, I should say in such an instance they would waive their opinion.



FIG. 51.—CATTLEYA TRIANÆ VAR. BACKHOUSIANA.

only bestowed upon the select and most distinct varieties. There is, however, no lack of these beautiful forms, and one introduced a few years ago by Messrs. Backhouse of York is shown in fig. 51, a slightly reduced representation of a very handsome variety. The sepals and petals are of a bright rosy pink, very clear and fresh; the lip is well formed, slightly undulated on the margin, and of an intensely rich crimson shade, contrasting finely with the clear yellow throat. The flower is well proportioned and attains the size of fully developed *C. Trianæ* of the best type.

CHRYSANTHEMUM NOTES.

NATIONAL CHRYSANTHEMUM SOCIETY'S CATALOGUE.—I was pleased to read the remarks of "Chrysanthemum" in last issue of the Journal on the classification of some varieties of Chrysanthemums in the National So-

One of the principal objects of the Catalogue is to discourage showing one variety under two or more names, and to try and stop the disgraceful practice of renaming varieties. This renaming is getting alarming, and it is time something was done to counteract it. Already this season many varieties from the Continent, which have been professedly raised by the distributors, have turned out old varieties with new names. Especially is this the case with the early-flowering varieties, the sudden demand for which has conjured up many new names, but few distinct sorts. Of the later sections, though it is early to have many of them in bloom, we find Mons. J. Laing, that has been so well shown during the past two seasons, comes to us again under the name of J. J. Hillier; l'Aube Matinale, a new variety of last season, comes over again as *Salmonia Plena*; our old favourite *Fair Maid* of Guernsey comes with the new name of *Mdlle. Jammes*; *Queen of England* and *Lady Hardinge* have new French names. Again, last season we had *Etoile du Midi* for *Jupiter*, *Val d'Andorre* for *Guilladia*, *La Purité* for *Mdlle. Lacroix*, *Souvenir d'Haarlem* for *Rosea Superba*, and several others. It is time, I say, someone took the matter up.

In reference to the few varieties selected from the catalogue for criticism, I would like to express my opinion on them for what it may be worth to readers generally. First, from what I have seen of *Mdlle. M. Tezier* it is not a true type of a reflexed flower. Out of the about 1000 varieties of Japanese *Chrysanthemums* now in cultivation no doubt Mr. Molyneux could select a large number that would serve to make up a board of reflexed *Chrysanthemums*. More than half of these so-called Japanese varieties are nothing more than had reflexed, or what I call cross-breeds, commonly called hybrids for convenience. The variety under notice has not so much claim as many others to be called a reflexed, it having a pointed petal, the principal bad feature of a reflexed flower, and I consider the Committee would have been going out of their way to have selected this particular variety simply because it had been shown in one instance. Most of the Journal readers will remember the argument for and against *Cullingfordi* last season. Here we had a far better type of a reflexed flower, and yet we had six on one side and half a dozen on the other as to which it should be, so that we need to be cautious. Still the mere fact of its being placed as a Japanese does not prevent its being shown in either section subject to the judges' approval.

Next as to *Minnie Chate*. I think our correspondent has mis-read the classification of large and Hybrid *Anemones*. In no single instance is the word Japanese *Anemone* used. I for one, and I think it is the very general opinion, that *Minnie Chate* is not a true type of the old-fashioned show *Anemone*, but a cross-bred, and as before pointed out, the term is simply used for convenience in attempting to divide and keep separate the ordinary show *Anemones* from the various cross-breeds. This does not make *Minnie Chate* a Japanese *Anemone*. The question is, How many of these so-called Japanese are there? In reality, I think only one, and I ask, Is it advisable to confuse the whole by calling them what they are not? I think it is far more advisable to drop the term Japanese *Anemone* and class them all as hybrids. We then get an interesting section of various types without confusion, otherwise we shall very soon have to re-classify them under three or four heads.

Lastly, in respect to *Emperor*. Here is inconsistency; for *Minnie Chate*, which is decidedly a cross-bred, is to be shifted into the show class, whereas *Emperor*, which for years has been recognised as a good show variety, is to be turned out. I do not know who was responsible for the disqualification of *Emperor* at the Crystal Palace, but in my opinion it was a decided blunder. The Judges, no doubt, knew very little of what they were judging, and went by appearances. Had they been experienced growers of this class, as well as judges, and knew the flowers, they would have known that the style in which *Emperor* was shown was merely a freak, and that the variety when in proper character is a good show flower, and instead of going to such an extreme measure, they would simply have judged the bloom by so many points less, as being a bloom out of character. Is the National *Chrysanthemum* Society to be guided by the opinions of individual judges or growers, or are they to act in accordance with the opinions of the general body of growers? Our correspondent "*Chrysanthemum*" seems to desire the former.

I have written rather at length, not so much to defend the decisions of the Committee appointed to prepare the catalogue, but to try and show that before a really satisfactory work can be brought out there must be more united action among growers. Why cannot we have a convention to hold a series of meetings during the coming season under the auspices of the National Society, so that all growers can come and discuss the various questions that need settling?—N. DAVIS, *Camberwel*.

CHRYSANTHEMUM MADAME DESGRANGE.—Summer-flowering *Chrysanthemums* will always be associated in my mind with the pleasant companionship of a member of your staff, as in his company I first saw the best of our yellow-flowering varieties with Mr. David Thomson at Drumlanrig, and it was also with the gentleman in question I first saw *Madame Desgrange* with Mr. Graham at Hampton Court. In both cases I was assured that they were the most valuable flowers imaginable, which induced me to invest in some plants, and I can now, after a trial of four or five years, fully confirm all your representative told me. Many of them are simply first-rate, but amongst all I am exceedingly partial to *Madame Desgrange*. White-flowering plants in the flower garden are more scarce than yellow, and this *Chrysanthemum* comes in as a white flower of the first order. It is a very strong, robust grower. It attains a height of from 18 inches to 24 inches. Its foliage is deep green and luxuriant, and the flowers are produced in such profusion that a row of it resembles a snowdrift. The flowers are from 2 inches to 3 inches across, and they are produced in huge masses. It stands dry weather uncommonly well, and if the blossoms chance to be injured by rain a few days' sunshine brings fresh ones out in large quantities. It begins flowering with me in June or early in July, and never ceases until cut down by frost, and the flowers when cut are very useful for all kinds of decorations. It is a variety which can be very strongly recommended to those having anything to do with the decoration of churches or any other place where chaste flowers are required by the armful.—J. MUIR, *Margam*.

BELLE PAULE—CLASSIFICATION OF VARIETIES.—Many persons have experienced the same trouble with *Belle Paule* this season that "*Chrysanthemum*" has, and it would appear somewhat habitual in this variety to not set its buds properly. My opinion as to its chief cause is that during the middle and latter part of August when the buds were forming the weather was very hot, consequently the wood ripened too quickly, thus preventing the free swelling of the buds. This would be aggravated if the plants suffered a check in any way through lack of water at the roots or overhead during that period. There is more harm

done to *Chrysanthemums* by allowing them to get dry at the roots just once than many persons imagine. Owing to there being such a mass of roots contained in the soil, which is generally secured firmly in the pots, it often takes several days before the once dry ball is thoroughly soaked, therefore some damage must necessarily take place, though the evil does not always show itself at once. Now that a slight weakness in this grand variety has developed itself growers should slightly increase the number of plants, as it often happens that it is not want of space during the summer which is felt, but it is during the time for housing the plants that this trouble is experienced by many, even of the largest growers. There is a great similarity in its growth to that of *Fair Maid of Guernsey* both in stems and leaves. It is a great favourite and deservedly so, its colour is so acceptable and quite distinct from any other variety; its form is also of the best. Another good reason of its popularity is the free manner in which it produces cuttings.

I consider *Mdlle. Madeleine Tezier* as one of the best varieties of reflexed flowers, and to that section I think it properly belongs. At one time it was thought to be synonymous with *Jeanne d'Arc*, but now that these are proved to be distinct the former variety must be classed as a reflexed, otherwise it will soon be lost to the exhibitions, as it possesses nothing to entice growers to stage it amongst the Japanese sorts—at least, if winning prizes is the object of the exhibitor. *Minnie Chate* belongs to the large-flowered *Anemone* section, and so does *Emperor* when presented in its proper character, and this ought to guide somewhat in classifying the varieties. As one of the judges who disqualified the "supposed" flower of *Emperor* at the Crystal Palace Show last year, I may say that the bloom was not considered "true," being so utterly unlike that variety that it would not have been right to admit it, because the general public look to exhibitions to see the correct varieties in their true character; if this cannot be obtained, public shows lose much of their interest through their being misleading. Mistakes will sometimes occur I am well aware, but when all due care is taken these inaccuracies are seldom found. For the information of "*Chrysanthemum*," I may say that it is my intention to publish the articles which I have contributed to the Journal on the *Chrysanthemum* in the form of a book, and I am pleased to find they are considered valuable by him.—E. MOLYNEUX.

PROPERTIES OF BLOOMS.—I am obliged to Mr. C. Orchard for his appreciative remarks on page 325, and still more so for pointing out what he regards as an omission of some moment from my observations on judging—namely, "smoothness" of florets as essential to a superior bloom. It is obvious that high finish is incompatible with roughness, and this was clearly pointed out as a fault; and as roughness is the antithesis of smoothness the latter was admitted as essential; further, it is distinctly stated in Mr. Newton's definitions of a good bloom (page 268) which I adopted, that it must be "smooth." Unquestionably judges take the defect of roughness and the merit of smoothness of floret into consideration when engaged in their duties. Still, as the most practical way in which I can express approval of Mr. Orchard's excellent motive, the word suggested has been incorporated in the article referred to, and will appear in Mr. Molyneux's book.—J. WRIGHT.

CHRYSANTHEMUM BELLE PAULE.—In reading a note by "*Chrysanthemum*," I notice his remarks about the Japanese *Chrysanthemum* *Belle Paule*. I grew this year six plants, and they were the most vigorous plants in the collection, but not one good bud could be had. Three were standards, the other three were cut down. The only cause that I can attribute it to is that *Belle Paule* is a very free soft-growing variety, and that at the time the buds were appearing there were some very hot sunny days, and they were hurt in the formation. Perhaps Mr. Molyneux could explain the matter. His flowers of it at Kingston last year were not wanting in any respect.—J. B.

HEATING BY HOT WATER.

WATERTIGHT ASHPITS—HOT v. COLD WATER.

MR. BARDNEY, in his concluding article on the above subject, page 313, under the head of "Fire Bars," recommends the construction of ashpits to hold water. I do not remember seeing the plan advocated before by any writer than in a few lines on stoking penned by myself nearly two years ago. I hope, however, others who may have it in operation will very kindly favour us with their opinions. Mr. Bardney's writings throughout his series, and in other articles on the subject of firing, have always seemed so consistent that I felt rather struck at the variance of theory on this point, and feel sure that good may be derived from exposure of two extremes.

Mr. Bardney says it is a good plan to construct the ashpit so that water can be constantly kept in it. If the water can be kept cool by a steady flow in and out it acts beneficially in the preservation of the bars. Now, apart from the somewhat impracticable idea of flowing in and out in very many cases, my opinion is considerably in favour of allowing the steam, which is quickly caused to pass from the surface of water directly amongst the bars, to accomplish the desired object. In fact, I know of nothing in my own experience which is so reliably self-acting as the evaporation in this case. The water is seldom below 80°, more generally at 130°, especially when both our doors are nearly closed, while at times it will reach with good and brisk firing to 160°, at which temperature evaporation is very great; therefore, with increased fire heat evaporation increased in equal proportion, and circulating with much uniformity, is quite equal to the task of not only cooling the bars, but also preventing

the clinker or melting doors from running at all between the bars, which in nearly all cases is the cause of hoisted bars. I may say that a terminal end saddle put in here about four years ago—which, of course, has ordinary fire bars set for evaporation—has more than satisfied. The bars are still as perfect as when new, and we have to maintain very high temperatures. Even were both systems equally efficient the theory of providing something like a miniature brook would, to my mind, in nine cases out of ten prove an obstacle to adoption. Mr. Bardney, having doubtless tried his plan, may be able to remove a little of my unbelief; but my object is mainly to inquire why preference is given to cold water. If Mr. Bardney has tried both plans I shall be glad to hear what he has to say, as we are at present setting another on the same system as before.—E. BURTON.



A DORSETSHIRE correspondent wishes to thank Mr. Molyneux for his instructive articles on the CULTURE OF THE CHRYSANTHEMUM, which he considers will be much valued by all who are interested in this popular autumn flower.

— IN a note on the SALWEY AND SEA EAGLE PEACHES Mr. A. Young observes:—"I can fully endorse what Mr. Mnir says against the Salwey Peach at page 315, as it must be a very fine season in a favourable part of the county where it will ripen outdoors. Sea Eagle I consider a very desirable variety to plant for a late supply."

— MR. J. FERGUSON, landscape gardener to Messrs. Little and Ballantine, Carlisle, has been appointed superintendent of the public park, Sunderland. There were 175 applicants; and Mr. Charles Ronpe has been appointed superintendent of St. Nicholas' cemetery, Newcastle-on-Tyne, for which vacancy there were seventy applicants.

— WE regret to have to place on record a lamentable occurrence in the SUICIDE OF MR. WILLIAM FORSYTH, who was for twenty years gardener at Gunnersbury Park, and who had for the last sixteen years been in the enjoyment of a substantial pension from the Rothschild family. The deceased was found on Ealing common on the evening of Tuesday, the 5th inst., life being quite extinct, and there appeared to be conclusive evidence that his own hand applied the razor that terminated his existence. At the inquest, that was held on Thursday last, evidence was adduced to the effect that he was in a more or less depressed state for some days anterior to the melancholy event, and a verdict was returned of "Suicide while temporarily in an unsound state of mind." Mr. Forsyth was seventy-three years of age and a widower.

— MR. LAXTON sends in the following:—"SEEDLING PEAR LAXTON'S BERGAMOT; fruits from the original tree, a large pyramid, about eighteen years from seed, probably raised from Autumn Bergamot. The fruits are fallings of the first year of fruiting, and are somewhat below size. The bulk of the crop not yet ripe. The tree appears fertile, and the fruits are not easily blown off by the wind." The fruits are small but exceedingly juicy and rich—a delicious Pear. A seedling Plum received at the same time from Mr. Laxton was over-ripe.

— PRICE OF POTATOES.—At Chester Market on Saturday farmers were offering to sell ten hampers of sound Potatoes for £1. Each hamper contained 112 lbs., so that at 2s. per hamper the price is well within 4 lbs. a penny. The farmers are complaining that at this price it scarcely pays to dig the tubers, but against the lowest price on record may be set an enormous crop absolutely free from disease. A Lincolnshire grower writes:—"About half the Potato crop is lifted in this part and turns out very light. I think it will not be more than half the weight of last year's crop. The price is also very low, several instances having occurred in which growers sending Potatoes to market have had to send money after them to pay expenses. In most cases it was through having been taken up too soon and then standing in trucks several days before being sold."

— MR. WALTER KRUSE, Yew Tree Farm, Leeds, near Maidstone, writes:—"On October 6th and 11th I picked ripe fruits of ALPHA STRAWBERRY from plants in the open, and there are a great many green berries nearly ripe. I have often before seen Strawberries blooming late in the year, but the fruit never ripened. This shows the mildness of the season."

— MR. R. CATT, Assistant Secretary of the CATERHAM GARDENERS' SOCIETY, writes:—"At the ordinary fortnightly meeting for discussion, held Oct. 9th, the double Dablia, which I beg to enclose for your inspection, was exhibited by Mr. J. Burlinson, Engineer to the East Surrey Water Company. The gardeners present considered it an unusual freak of Nature." The flower sent is a rather unusual example of fasciation, apparently caused by the union of two flower stalks, each bearing a bud. These buds have developed into blooms placed back to back with one stalk. We have seen similar examples before, both in single and double varieties.

— "THE genus SOLIDAGO," writes "B.," "provides us with a long-continued supply of flowers which are among the best we have for cutting. In August the common *S. Virga-aurea* flowers. This is followed by *S. flagulata*, a somewhat better species; this again by *S. canadensis*, which is by far the best, and quite a gem among hardy flowers. For most kinds of cut flower work it is very useful, harmonising with many flowers. We still have plenty of the above sort, and *S. Shorti* is just beginning to open. Though not nearly so useful, the latter is nevertheless well worth growing; in fact, all four are indispensable flowers."

— MR. E. MOLYNEUX, Swanmore Park Gardens, Bishops Waltham, sends some flowers of TUBEROUS BEGONIAS gathered from plants raised from seed sown in January this year. They are very fine and represent an excellent strain, the flowers large, one being 5 inches in diameter, of good shape, and of rich varied colours.

— UNDER the title of the CHISWICK YOUNG GARDENERS' MUTUAL IMPROVEMENT ASSOCIATION a society was inaugurated on the 8th inst. amongst the men employed in the Royal Horticultural Society's gardens at Chiswick, which promises to be very beneficial from an educational point of view. At the inaugural meeting above mentioned Mr. A. F. Barron was invited to act as President; Mr. John Fraser of Kew, to whom the idea is in a great measure due, was appointed permanent Chairman of the meetings, and Mr. J. Barry, Secretary. A special class for those anxious to extend their knowledge in botany will be one of the features. Papers (with discussion) on the following subjects were announced to be read on the undermentioned dates:—October 15th, The Physiology of Plants, by Mr. J. Fraser; October 22nd, The Extension of Horticulture, by Mr. A. Herrington; October 29th, The Position of the Gardener, by Mr. J. Barry; November 5th, Roots, by Mr. H. A. Bunyard; November 12th, Economic Plants and Their Uses, by Mr. A. Parsons.

— "B." writes:—"Does anyone interested in Apples know whether BRAMLEY'S SEEDLING APPLE is distinct from Warner's King? The above has not yet fruited with me, but the foliage, &c., is so like the King of many aliases that I am almost afraid I have been increasing my stock of the latter under a new name to an unnecessary number at the past budding season."

— LABURNUM IN OCTOBER.—Mr. R. H. Adamson writes:—"It may interest your readers to hear of what would seem to be a very phenomenal display, as we are accustomed to it in our much-abused climate. In the village of Guilden Morden, Cambridgeshire, there is a Laburnum tree for the second time this year in full blossom. I am no botanist or horticulturist, but the display attracted my attention at this time of the year, and on inquiry I found that no one had ever seen anything of the kind. I begged for a few of the yellow clusters to bring home as a curiosity; and, these being readily granted, I brought them up to London with me. On one of the small branches given me I found several of the old pods with seeds, remaining from the spring flowering, side by side with the new growth." In some districts Primroses are flowering abundantly.

— AN experiment in TOBACCO CULTURE IN CUMBERLAND has proved very successful. Sixteen varieties were planted at the Knowe-field Nurseries, and the young plants were put out on June 26th, when about 3 inches high. Since then they have thriven marvellously, one of the Missouri variety being over 8 feet in height, and bearing twenty-four fully expanded leaves. The plants are very strong and vigorous, and of a healthy green colour."

— MR. R. LOWE, Sleaford, writes to the *Times*:—"Owing to the unusually backward spring, the SWALLOWS on their arrival found so little food that quite two-thirds of their number died of famine. The survivors were so emaciated that it was late before they commenced to

build their nests, bringing one brood only. To their diminished numbers is chiefly owing, I think, the present pest of flies. 'But for the swallows the air would soon be so filled with flies that we should be unable to see or breathe, and vegetation would be destroyed,' writes some competent authority. This, I take it, would be an excellent opportunity for impressing upon the minds of your readers the absolute necessity for protecting the nests of these birds in all seasons for the future, upon railway stations, public buildings and private dwelling houses. That it was want of food more than the lowness of the temperature that caused the great loss in these birds is proved by the fact that all that were brought to me were wasted to mere skeletons. Thirty would not weigh a pound."

— MR. HY. BALDERSON, Cormer Hall, Hemel Hempstead, sends the following note:—"RASPBERRIES IN HERTFORDSHIRE.—In taking my morning walk through the kitchen garden with my gardener this morning, we came in view of a magnificent lot of Raspberries quite in perfection for the table, and several of them measuring 3 inches in circumference. These were from a bed planted in the autumn of last year, and bearing fruit now for the first time. If this worthy of record please insert it; the canes were purchased of Messrs. Wood & Ingram of Huntingdon."

— MR. JOSEPH MALLENDER sends the following SUMMARY OF METEOROLOGICAL OBSERVATIONS AT HODSOCK PRIORY, WORKSOP, NOTTS, for September:—Mean temperature of month, 55.9°. Maximum on the 4th, 73.5°; minimum on the 16th, 34.8°. Maximum in sun on the 5th, 124.3°; minimum on the grass on the 16th, 30.4°. Mean temperature of air at 9 A.M., 57.6; mean temperature of soil 1 foot deep, 58.0°. The temperature fell below 32° on two nights on the grass. Total duration of sunshine, ninety-one hours, or 24 per cent. of possible duration. Total rainfall 1.01 inch. Maximum fall in twenty-four hours on the 9th, 0.37 inch. Rain fell on fifteen days. Average velocity of wind 9.6 miles per hour. Velocity exceeded 400 miles on four days, and fell short of 100 miles on three days. Approximate averages for September:—Mean temperature, 55.8°. Rainfall, 2.51 inches. Sunshine (five years) 114. A dull month, of average temperature and low rainfall. The harvest was finished here generally by the 18th.

— GARDENING APPOINTMENT.—Mr. T. Tebby, for the last four years foreman at Aberaman House, Aberdare, has been appointed head gardener to E. D. Thomas, Esq., Welfield, Bulth, Radnorshire.

— A DINNER, to celebrate the success of the first Exhibition of the DARLSTON HORTICULTURAL SOCIETY, took place recently at the Green Dragon Hotel, Darlston. Mr. William Winn, the President of the Society, was to have presided, but as he was suffering from indisposition, and from that cause was unable to attend, Mr. G. A. Wilkes, the Chairman of the Committee, presided, and Mr. Joseph Yates took the vice-chair. After the usual loyal toasts, Mr. W. Dean of Walsall, one of the Judges at the late Exhibition, proposed "Continued success to the Darlston Horticultural Society," and spoke of the good work these Black Country societies were doing in fostering a love for gardening amongst the working classes, and of the very great success attending the Bilston, Willenhall, and Darlston Exhibitions, coupling with the toast the name of Mr. George A. Wilkes, the promoter of the Society, and to whose exertions so much of the success was due. Mr. Wilkes, in responding, acknowledged the valuable help he had received from the Hon. Secretaries and the Committee, and felt that they had done their part in promoting a love for gardening in the township, and that in the future they should continue to promote the interests of the Society. Mr. John Griffin, in submitting the toast of "Success to the neighbouring Horticultural Societies of Bilston, Willenhall, Walsall, and district," remarked that he yielded to none in a love for floriculture, and it gave him much pleasure to see the pursuit engaged in in the Black Country with so much success. In a brief but practical speech Mr. Griffin alluded to the benefits of these societies, and coupled with the toast the name of Mr. Joseph Lowe, one of the Hon. Secretaries of the Willenhall Horticultural Society. Mr. Lowe, in an able speech, alluded to the time when he should have scouted the idea that Bilston, Darlston, or Willenhall would have set an example to the rest of the Black Country in horticulture. In Willenhall they had in two years made a profit of £107 towards providing an illuminated clock for the Board schools. They should now go on with a profit on this year's Exhibition of quite £30, and he wished Darlston also every success.

— THE seventh annual CRYPTOGRAMIC AND BOTANICAL MEETING OF THE ESSEX FIELD CLUB will be held on Friday and Saturday, Oct.

15th and 16th, 1886, in the northern section of Epping Forest (Epping Lower Forest, Chingford, High Beach, Monk Woods, Buckhurst Hill, &c.). Headquarters for the meeting, "The Roebuck Hotel," Buckhurst Hill, Epping Forest. The following botanists, among many others, have kindly promised their valuable aid as referees and directors at the meeting:—For Fungi—Dr. M. C. Cooke, M.A., F.L.S., Rev. Canon Du Port, M.A., Mr. James English, Worthington G. Smith, Esq., F.L.S., M.A.I., Dr. H. T. Wharton, M.A., F.Z.S., &c., Arthur Lister, Esq., J.P., F.L.S. For Mosses, Lichens, Algæ, and Phanerogams—Professor Boulger, F.L.S., F.G.S., Rev. J. M. Crombie, M.A., F.L.S., F.G.S., J. T. Powell, Esq., Henry Groves, Esq., Charles A. Wright, Esq., F.L.S., F.Z.S., F. J. Hanbury, Esq., F.L.S., E. M. Holmes, Esq., F.L.S., David Houston Esq., F.L.S., F.R.M.S., W. W. Reeves, Esq., F.R.M.S., A. Vaughan Jennings, Esq. An exhibition of specimens will be held in the large ball-room attached to the "Roebuck Inn," Buckhurst Hill. Exhibitions of fresh and dried botanical specimens, microscopes, and microscopical objects, diagrams, drawings, &c., will be very welcome. The exhibition will be confined to subjects from the vegetable kingdom, but not necessarily to the Cryptogamia, although that division will hold a very important place. Intending exhibitors (especially of micro-slides) will greatly aid by sending in their specimens to the Hon. Secretary at the headquarters, 8, Knighton Villas, Buckhurst Hill, a few days before the meeting. Fresh specimens of fungi and other plants should be sent to the "Roebuck Inn," on the Friday or the Saturday morning. Fungi will travel safely in hampers or boxes if care is taken to wrap each specimen separately in pieces of tissue paper or soft newspaper. Gatherings from various parts of Essex will be much esteemed, and localities should in all cases be given. Specimens of fungi intended for the named and arranged series must be in Dr. Cooke's hand by twelve o'clock on Saturday, October 16th; separate tables will be provided for collections arriving after that hour. The Friday's assembly is intended to be a student's and collector's day in the woods, the evening being devoted to the naming and arrangement of specimens. Those wishing to take part in it should send word to Mr. B. G. Cole, who will then forward particulars of place of meeting, trains, &c. Saturday morning and early afternoon will be similarly occupied, and Saturday evening's meeting will be of the nature of a conversation. Ample time will thus be afforded for careful examination of the specimens by the visitors present, and all possible facilities will be given to exhibitors. On Saturday evening Dr. Cooke's Report on "Recent Epping Forest Fungi," Prof. Boulger's "Remarks on the Progress of the New Edition of the 'Flora of Essex,'" and probably some other short papers and addresses will be read.

— IN certain districts of the United States of North America STRAWBERRY CULTURE is carried out on a very extensive scale. Especially is this the case in Ohio, where a Mr. Crawford has contributed greatly to the increased and improved cultivation of this fruit. "The Barnesville district is very remarkable for the crops raised, but its products are eclipsed by a belt of territory lying along the Illinois Central Railroad, over which special express fruit trains have been run for thirteen seasons, until it now consists of thirty refrigerator carloads per day, twenty-two of which go to the commission men of Chicago, whose 800,000 inhabitants consume 435,600 quarts per day, at a cost of 15,000 dollars for each trainload, or about 350,000 dollars for the three weeks' season. This represents only a small part of the traffic in the fruits of this country, which is constantly increasing. The ease and certainty with which they may be grown is the reason why it should be done."

§§— TO the CULTURE OF HORSE RADISH considerable space is devoted in some of the North American States. One writer in New Jersey describes his system as follows:—"I planted on moist soil, in banks 3 feet apart, 18 inches apart in the row. The average weight in eight years was 2 lbs. each, the average price during the same time was eight cents a pound, or 1600 dollars to the acre; but I must say we used from 350 to 400 dollars' worth of manure from a slaughter-house at 1 dollar 50 cents per ton to each acre. The ploughing, planting, cultivating, trimming, &c., was worth 200 to 300 dollars, according to the season, leaving a profit of 900 to 1150 dollars per acre. I raised Horseradish alone, but it can be raised together with Cabbage, Beets, or Lettuce. If done in this way the roots are not as strong or thick as they are when planted alone."

— SINCE 1834 Prof. Schnetzler has been making some experiments in the CULTIVATION OF THE RAMIE OR CHINA GRASS PLANT (*BOMBERIA NIVEA*) on the Champ-de-l'Air at Lausanne. This plant, a native of China and Sumatra, has been grown in the south of the United

States and of France for thirty years. Recently it has been introduced into Algeria. There is, of course, a striking difference in the conditions of temperature between Lausanne and the places in Asia where Ramie is grown. While the latitude of the latter is from 15° to 35°, that of Lausanne is 46° 31'. The mean temperature at Lausanne is 9.5° C. Last winter the plants underwent long periods of great cold; in one case, the temperature being below zero for 124 hours, with a minimum on the ground for 5.21°.—C.

— **PLANTING IN THE ISLE OF MAN.**—It is interesting to know that the contracts now being entered into by the Commissioners of Woods and Forests for trees for the Isle of Man are not the first of the kind. Already, we are informed, very extensive planting operations have taken place on the Crown lands in that interesting island. In 1882 contracts were entrusted to Messrs. Little & Ballantine, Carlisle, which involved the planting of three millions and a half of trees on mountain land; and it is the success of these extensive operations which has led the Commissioners to go further into this important matter and extend the number of trees annually. A competent forester from the Carlisle Nurseries is in charge of the plantations and superintending the planting under the Department, which is now done as far as possible by native labour. Half of the trees which are to be planted this year have been again ordered from Knowe-field.

— **"ENTOMOLOGIST"** states that—"The LILACS in several of the metropolitan squares have suffered severely this season, first from the attacks of the larvæ of the small moth, *Gracillaria syringilla*, the ravages of which were almost immediately followed by those of the grub of a small fly, *Anthomyia* species (?), in consequence of which during August many bushes were leafless and apparently dying off. It shows, however, the strong vitality of this plant, that with somewhat cooler weather in September, and slight rains, most of the affected Lilacs rallied and put forth a fresh crop of leaves."

— **AT the Indian and Colonial Exhibition, South Kensington, a DISPLAY OF CANADIAN APPLES AND VEGETABLES**, with other produce, is provided in the Conservatory, illustrating the principal varieties grown in the Dominion. The vegetables were the least satisfactory, the samples of Potato, Carrots, Parsnips, Onions, Mangolds, and Swedes being rather coarse. Some very large fruits of the Egg Plant, 9 inches high and as much diameter, were shown, together with Squashes and Vegetable Marrows, most of these exhibits being from Mr. Wm. Rennie Ontario. The Apples comprised sixty dishes from the Toronto Industria, Exhibition, besides a number from the Montreal, Missisquoi, Brome, and Huntingdon Horticultural and Agricultural Societies, seventy dishes of Apples being also contributed from Nova Scotia. There was considerable difference in the size and colouring of the specimens, those from Montreal being remarkable for their rich tints, especially such as Water Core, Fameuse, Foundling, Montreal Waxen, Johnston, and Peach of Montreal, in several of which the rich red hues were contrasted with a delicate white, wax-like skin. The Nova Scotian Apples were not so remarkable for colour, but were large and clean samples. In other collections the varieties Emperor Alexander, King of Tomkins County, Baldwin, Blue Pearmain, Wealthy, a bright red-streaked Apple, Sherwood Favourite, Rhode Island Greening, Kentish Fillbasket, and King of the Pippins were the best shown. From the Pelee Island Vineyards, Lake Erie, Canada, were sent some samples of outdoor Grapes, comprising such varieties as Delaware, Clinton, Catawba, and Prentiss, chiefly forms of the Fox Grape. Pears were small, but Plums such as Reine Claude and Pond's Seedling were fine.

— **THE Manna Ash, FRAXINUS ORNUS**, looks fresh and green now in contrast with many deciduous trees, which are fast losing their leaves. One variety named *Theophrasti* is especially notable for its dark green colour, but some others like *roundifolia* are changing slightly, assuming a purplish tint. An interesting variety of the common Ash, *Fraxinus excelsior* var. *simplicifolia*, in which the pinnate character of the leaves is lost, one broad oval leaflet taking their place, is also remarkably fresh, still with not a sign of October hues. The white Ash, *Fraxinus americana*, which is reputed to be so carefully avoided by the rattlesnakes in the United States, is not quite so fresh; some of its leaves are fast changing colour, and will soon be falling.

— **SEVERAL pretty NERINES** flowering at the present time are most attractive in the greenhouse or any cool structure. *N. Fothergilli* major is the best in brilliancy of colour—a rich scarlet—and size of

flowers; it is also very free. *N. amabilis* has flowers of good size, the petals broad and of a bright rose tint. *N. humilis* major has similar flowers, but of a dark rose shade. *N. humilis cœrulea* has a curious mixture of rose and purplish lilac in the flowers. *N. O'Brieni* lilacina has blooms like *N. amabilis*, but tinged with a bluish lilac colour; *N. excellens* being somewhat of the same style, but not quite so large.

GARDENS ABOUT PRESTON.

LANCASHIRE is generally associated with tall chimneys, factories, chemical works, coal pits, and such evidences of human industry. The county has a bleak and barren appearance in the vicinity of the two latter, for all vegetation that renders a landscape beautiful is totally destroyed. But the whole of Lancashire is not in this deplorable condition, for there are lovely spots and as charming landscape views as can be found in any other part of the country. Cotton mills are everywhere visible in the neighbourhood of Preston, and it would be impossible to conceive that they could be situated with such lovely surroundings. The smoke that issues from these mills does not destroy vegetation or render gardening in general so difficult as is experienced in many other localities. Vegetation is luxuriant in this district, and the gardens, parks, and woods are well furnished with flourishing timber trees, shrubs, and Conifers. This is not to be wondered at when we consider the soil in the vicinity of Preston is of a very fertile nature. Market garden produce is largely grown, the soil being well adapted for the growth of vegetables. If one crop predominates more than another it is Celery, and perhaps nowhere in the country is it grown better or on a more extensive scale. A portion of nearly every field is devoted to this vegetable; in short, everybody that is in possession of a piece of ground grows it, and they certainly excel in its cultivation.

The gardens about Preston are not so extensive as are to be found in the immediate vicinity of many towns, and with one or two exceptions they are of moderate size only. Gardening, however, in its various branches is "well done," as can be observed by anyone visiting the Preston and Fulwood Horticultural Society's Show in the spring of the year. Some of the most striking features of a few of the gardens about Preston will be referred to, detailed accounts not being attempted.

FARINGTON HOUSE.

This is the home of J. Eccles, Esq., and is about twenty minutes' walk from Leyland station on the London and North-Western Railway, and about four miles from Preston. The residence and gardens are reached by two drives, which wind through a thickly wooded plantation of fair size. The trees are not large or well furnished, because they have been left too long without being thinned. This state of things is to be found in many plantations, and it is a pity, for the grass beneath is totally destroyed, while Rhododendrons and other underwood are smothered, or partly so. The Rhododendrons that skirt the drive will be destroyed in a few years unless measures are speedily taken for clearing away the front rows of trees or liberally thinning the others, so that light and air can pass freely through them to the evergreens. Mr. Eccles has certainly improved the place by the number of trees felled last year, but others yet need removal, for they overshadow the dwelling and some of the plant and fruit houses. The front of the wood through which the drives pass that border the lawns are freely dotted with Conifers and evergreens, and have a very effective appearance from the dwelling. A good stretch of well kept lawns surround the mansion, and a neat little flower garden to the left of one of the drives.

The main features of these gardens, however, are the glass houses. Some five fair-sized houses are devoted to Vines—in fact, four of them may be termed large, which are lean-to, or possess a small hip roof. The principal range is a good one, and, in addition to three vineries, is concluded by a large early Peach house, the fruit having been gathered from this structure early in the season; but the trees are healthy, and very promising for another year. The early house of Grapes has been cut, while another house of Black Hamburgs has been recently freed from fruit-bearing. Part of this house is overshadowed by a large tree, and the Vines cannot be expected to produce very satisfactory fruit until it has been removed. A large amount of light, which is so essential to the production of firm, well matured wood, is prevented from reaching the Vines. The Muscat house, the one of Lady Downe's and Alicante, and a third with Madresfield Court and Black Hamburgs, planted alternately, are carrying enormous crops of fruit. The Grapes are good in every respect, being fair in size of bunch, colour, and berry; in fact, they are remarkably good when the enormous crop they are carrying is taken into consideration. The Vines are healthy and the foliage clean, but it is evident that high feeding has to be practised, or they would fail to carry the crop annually imposed upon them. The wood and foliage of the Vines, in fact their general appearance, strikes one that the borders are too rich in nitrogenous matter; if more mineral constituents were employed, and less manure for a season or two, the wood would possess greater solidity, and the bunches would be of a compacter nature, with berries of a larger size than they even now attain.

One little house is filled with *Eucharis amazonica*, the very picture of health, and the opposite side with Orchids, which are doing well. The remaining division of this range is occupied with stove, flowering, and foliage plants, principally the latter for room decoration. Conspicuous in this structure is a large plant of *Adiantum farleyense* 3 to 4 feet through. Another structure is devoted to Azaleas and other greenhouse

plants for cut flowers and the conservatory. Very noticeable was a large batch of Primulas, which Mr. A. Waters, the able gardener, grows exceedingly well. Some of the finest plants we have seen for years were staged by him at Preston last spring. The method of culture Mr. Waters has detailed, and therefore need not be touched upon in these notes. There is also a house for standard Peach trees, which are being removed except in the centre, and trees are trained to wires round the sides. The conservatory contained some good samples of the old double white Primula, with a general assortment of other flowering and foliage plants.

The fernery is a very beautiful little house, being very tastefully arranged with fountains, rockwork, and arches formed of *Selaginella* 6 or 7 feet high with a winding walk passing through. The top of the house is furnished by a variety of Tree Ferns, and the rocks with those of a dwarf nature, and a few Begonias of the Rex type. A house of Camellias in pots completes the glass arrangements. The Camellias are healthy, clean, and full of flower buds. It is surprising what improvement has been effected in the condition of these plants during the short space of time Mr. Waters has had charge of them.

The same marked improvement is visible in every department, the grounds, houses, hardy fruit trees, as well as the well-stocked kitchen garden. The gardens had been dreadfully neglected by some previous gardeners, but the work of renovation and improvement commenced by Mr. Campbell, the gardener previous to Mr. Waters, has been ably carried on by the latter. I was very pleased to find that such a great change for the better had been effected in the condition of these gardens in such a short space of time.

WORDEN HALL.

This, the residence of the Misses Farington, is situated on the opposite side of Leyland. The mansion and gardens are reached by traversing a lengthy drive that winds through a well-wooded extensive park. The entrance to the drive is of an imposing nature, and the same may be said of the one on the opposite side of the park. The trees throughout the park are of large size and well developed. From below the pleasure grounds a winding walk runs very tastefully through a large but narrow strip of well timbered land. This is rendered the more beautiful by the silent rippling stream that winds its course through the wood, to be crossed here and there in following the walk to which reference has been made. This walk appears to be of such a nature that it is as no starting or ending place, for it brings you through large luxuriant groups of *Rhododendron ponticum* and into an old but fruitful orchard, the Damson trees being particularly heavily laden with fruit, and then into other walks in the pleasure grounds.

The walls are covered with various fruit trees, which must have been planted many years ago, many of them having lost their lower branches; in fact, are fast falling into decay. It is a pity that these walls are not recovered with young trees or portions of them at a time, so that there would be no lack of fruit until the young ones were established. This has been done, however, on the wall devoted to Peaches, which were bearing excellent crops of large well coloured fruit, some of the fruits of Barrington Peach weighing over 7 ozs. The kitchen garden is fairly extensive, and was well cropped with a general assortment of vegetables.

Close to the kitchen garden is one of those old but charming gardens that should find a place in every establishment. The Misses Farington take a great interest in this garden; and well they may, for it contains a little of everything. For instance, beds of the common Moss Rose pegged down, bulbs of every description for flowering in the spring, alpine Phloxes, and a general collection of alpine and herbaceous plants. This garden is bounded on one side by a hedge of *Rhododendron ponticum* and a row of climbing plants trained to pillars and festooned gracefully from one to the other. Even Hops are not dispensed with for this purpose, and remarkably well they look amongst other things after the Hops are produced.

The flower gardens is situated close to the mansion, which is a geometrical design, laid out in Box and various coloured gravels, the work of Mr. Nesfield. The garden is sunk below the surrounding lawns, and would undoubtedly be very effective from the mansion. This garden was very gay, and the surrounding lawns in good condition. Below the flower garden, and stretching for some distance towards the park, are large squares of grass, not closely cut, that must be worth seeing in spring, for they are full of Narcissus; and below these again are large masses of *Scilla siberica*. It is when massed together in quantity that these bulbous plants are most effective.

The glass houses are not extensive. Vines occupy one house only. Melons and Cucumbers are grown in one small house and in frames. Pines are grown in pits, and the plants were sturdy and producing fine fruit; these houses are in the kitchen garden, the remainder being in the pleasure grounds. A large house intended for a fernery, with a quantity of rockwork, in progress of erection, will undoubtedly be interesting and effective when completed, the arrangement of which Miss Farington directs herself. Another house is devoted to Nymphæas, which cannot fail to be very interesting from time to time, when the different varieties are in bloom. Those that have not gone to rest are healthy and flowering freely. The remainder of the houses are devoted to Ferns and decorative plants in variety. Many very old plants that are seldom found in gardens nowadays are cherished at Worden Hall. The whole of the houses are heavily draped with a good variety of climbers, the back walls being also covered with a variety of flowering plants. The climbers add to these houses a very natural appearance, for they are not tightly tied together, but from a distance have the appearance of covering the entire roof. Such, however, is not the case, for they are only trained under the rafters. The houses are old, and consequently rather dark, and with the

aid of the climbers a large amount of light is hidden from the plants below. Mr. R. Frisby, the able gardener, deserves congratulation for the condition of the gardens generally.

FERN BANK.

This is situated on the opposite side of Preston, and is about two miles distant. It is the home of Mr. John Atherton, Hon. Secretary of the Preston and Fulwood Horticultural Society. This Society owes much to the exertions of Mr. Atherton, who has worked hard in order to render it a success. No better or more able person could be found for the position. He is an enthusiastic amateur, with plenty of time on hand, which he freely devotes to the Society, and in addition is well known to the *élite* of Preston. The gardens at Fern Bank are not large, and principally consist of an orchard of various fruit trees, two glass houses, a small lawn, and a few flower beds. Fern Bank is referred to because amateurs may gather two or three useful hints from what I noted as particularly conspicuous. The first subject that took my attention was two flower beds of the old *Sedum spectabile* with its enormous heads of rose-coloured flowers. Two finer beds it would be impossible to have, and all desirous of having effective and telling beds without having to raise plants annually should make a note of this. One of the houses were filled with *Vallota purpurea* and various Lilies; the other, a large span-roofed structure, contains a good assortment of succulents, about fifty varieties, some of the plants being good specimens. *Eucomis regia* was in bloom with fine spikes of its sweet-scented flowers. This is a plant that deserves to be more generally grown. The remainder of the house was filled with a general assortment of plants. Fuchsias—the old Rose of Castile—were strikingly beautiful; they were growing from beneath the stage by the side of the walk, and very full of bloom. The objectionable part of many houses might be rendered effective by this method.—W. B.

FRUITS FOR NORTH WALLS.

IN many instances we see north walls clothed with Ivy, those in charge of them being of opinion that nothing of a more profitable character will grow on them; but this is a mistake, as there are some fruits which succeed as well on a north wall as on any other aspect, and those in this position have advantages which others in earlier situations do not possess. Morello Cherries do exceedingly well on a north wall. They grow freely, and soon furnish it with plenty of wood and foliage. They begin fruiting early, and bear a crop when they are three or four years old. Their late position is in their favour in two ways. In spring they are later in coming into bloom than those in sunny positions, and this is greatly in their favour, as the weather is better as a rule towards the end of April than in March, and they very rarely miss a crop. Again, in the autumn the north aspect is all in favour of the fruit being late in ripening and hanging long. Our first Morellos in a west aspect ripened early in August, but those on a north wall were not coloured until the very end of that month, and now those that were in the last week in September we have still perfectly fresh fruit hanging on the north wall trees. It will be late in October before they fall, and I think all will admit that this is very late for Cherries in a district not generally late.

The next fruits I recommend for this position are Red and White Currants. Some years ago we had a shed, the wall of which faces due north. It was quite bare and rather unsightly, and with the object of improving its appearance, in summer at least, a narrow opening was taken out along the bottom of the wall where there is a pathway, and this was filled with good soil. One-year-old Red and White Currant bushes were planted, and the branches trained upright to reach the top of the wall as soon as possible, but in addition to their covering the wall they soon began to bear heavy crops of splendid fruit, and for five or six years past the finest Red and White Currants in the garden have been produced on those north wall plants. They never fail to produce a full crop, the bunches and berries being very large, and they hang quite fresh until long after the bushes in the open quarters are destitute of fruit.

The Keswick Codlin Apple also bears very well on a north aspect, and some Pears, particularly Beurré d'Amanlis, produce much good fruit facing the north; and as the planting season is again at hand, I would advise all who have north walls now occupied unprofitably or bare to plant them with those named above.—J. MUIR.

ROSE THE BRIDE.

SEVERAL correspondents have requested us to furnish them with some particulars concerning this new white Tea Rose, which has appeared at several exhibitions this year and attracted much attention. At a meeting of the Royal Horticultural Society in August Messrs. Wm. Paul and Son showed a number of blooms and buds that were very charming and extremely fragrant. It was noted approvingly by one of our correspondents last week, and again in the present issue (page 334). As a free, late-flowering variety it is likely to be very useful.

Writing in reference to this variety Mr. William Paul, Waltham Cross (to whom we are indebted for the loan of the woodcut, fig. 52) remarks as follows:—

“Your correspondent, ‘Wild Rose,’ tells us (page 314) that this Rose ‘originated in the garden of Mr. Bancroft, the historian.’ I think he will find that it originated with Mr. John May of Summit, New Jersey

one of the largest and most enterprising of the American market growers. It was a sport from Catherine Mermet, and has been exhibited by us several times this season, and always attracted attention, receiving the commendations of many of our best judges of Roses. It has bloomed abundantly here from June onwards, and is wonderfully free both in growth and flowering. The habit is good, the flowers holding

AMERICAN BLACKBERRIES.

I WROTE you in the spring about the Wilson Junior variety, and now that the fruit is ripening I report further. I may repeat that the plants, twelve in number, were obtained in April or thereabouts of last year, and consisted each of one shoot, except one, which had two of about 15 inches in length and of the thickness of a quill pen. Of the six plants retained for myself two died and one does not appear to be the true variety. The



FIG. 52.—ROSE THE BRIDE.

themselves upright on stiff flower stalks. The introducer of it (Mr. May) describes it as a white Catherine Mermet, and it seems to bear out this description. I believe it will prove a grand white Rose, especially valuable for forcing for cut blooms."

other three at the time I wrote you were of the size of small Gooseberry bushes. The tallest is now more than 6 feet high, the stem is over 2 inches in circumference at the base, and there are several branches, one between 5 and 6 feet in length. The second tree was the height of this two months ago, but the top was broken off in a gale of wind. The stem

of this is 2½ inches in circumference at the base. The third consists of two strong stems bearing several branches. The trees are planted 6 feet apart. This is too close, 10 feet would be better. As the fruit is borne on the old wood, and as the old wood is but little more than that referred to at the beginning of this letter, there is naturally not much in the way of a crop. Indeed, there is very little, but what there is is very promising. The berries are not very large, but the drupes (the small berries composing the whole berry) are large, and give promise of a larger fruit when the plants are thoroughly established. The fruit is sweet and like jelly in the mouth, and indeed is eatable some time before it is fully ripe. As far as my experience goes at present I believe the Wilson Junior to be a valuable introduction.

I have no personal knowledge of the introducers, and no commercial interest whatever in the introduction.—W. R.

MUSTARD AND CRESS FOR MARKET.

[THE following article originally appeared in this Journal, March 16th, 1882. It was subsequently reprinted, and both issues being exhausted it is again reprinted in response to several applications.]

IN most English gardens attention is given to providing a supply of Mustard and Cress for salads; and being easily and quickly grown, and further possessing very wholesome qualities, they are within the reach of all, even of those with most limited means or accommodation for plant or vegetable growing. Still, very few residents at a distance from London have any idea of the extremely large quantities of this small salading grown to supply the demands of the metropolitan markets. It is only by visiting the gardens where its culture is made a speciality, or by an early morning journey to Covent Garden Market, that anyone unacquainted with the facts would be able to form the slightest conception of the extent of the trade in such apparently insignificant productions. One reason for this is that Mustard and Cress require to be quickly grown, quickly sold, and quickly conveyed to the consumer, as it soon becomes tough and tasteless after cutting; and the consequence is that outside the markets large quantities are seldom seen, as the retailers purchase only what is ordered, or as much as they consider will meet the demand for the day. The supply is thus very generally distributed; and though few shops have more than a dozen punnets, there is scarcely one in a respectable neighbourhood that does not require some daily. But for this fact it would seem almost incredible that so large a quantity as some growers raise could be consumed while fresh.

The chief season for Mustard and Cress is during the spring months, at which time a thousand dozen punnets are brought to Covent Garden Market daily by the chief growers, and one alone sends from a thousand to fifteen hundred dozen punnets per week. The supply is maintained in a varying degree throughout the year, reaching its lowest in November, December, and January, especially in severe or very wet seasons. It is, however, a constant crop, and one grower informs me that his supply would average five hundred dozen punnets per week throughout the year; and judging by the space he devotes to its culture the quantity does not seem to be exaggerated, though the results are somewhat astonishing when we consider the money value that is realised.

The price per dozen punnets varies from 1s. to 2s.; but as less than the first-named price has sometimes to be taken the average might be fairly considered to be 1s. the dozen. Thus five hundred dozen per week would give a total annual amount of £1300; and taking the profits at the very low estimate of 10 per cent. we have a yearly income of £130 for Mustard and Cress alone. From what I have seen and can judge of the labour and expense incurred in the production I should, however, think the profits would be nearer 20 than 10 per cent. The result appears almost incredible, and considering that even those market gardeners who grow the largest quantity of small salad also have several other crops, especial attention being paid to Mushrooms, this form of market gardening seems to be a rather satisfactory one. It must be remembered that these particulars only refer to those who grow the largest quantities, and less than half a dozen almost entirely supply the demands of Covent Garden. In small quantities it would probably not pay for carriage, and most of those mentioned as making a speciality of small salading have waggons which convey that and other produce to London and return laden with manure. The grower must be conveniently situated as regards distance from the chief markets, or the expense would be considerably increased and the quality of the salad greatly deteriorated if it remained closely packed for too long a time.

It may be of interest to some readers to know the methods of growing this salad adopted by market gardeners around London; and as I have recently had an opportunity of visiting several of these establishments a few observations upon the subject will give an idea to those who are desirous of commencing the culture on a large scale. It may be premised that though some of the best gardening in the kingdom is to be seen in market growers' establishments, yet there is generally so much trade rivalry and jealousy that a reluctance to communicate any details of culture very generally prevails. Some who have been successful imagine they possess a secret essential to the satisfactory production of any particular crop; yet after all they only act upon general principles, and in half a dozen different establishments as many different systems may be seen in operation, with results that vary but very slightly, and are in a pecuniary point of view equally satisfactory. So it is with the crop now under consideration. One man who has been very successful in the culture of Mustard and Cress, and who sends a very large quantity to market, considers that his progress is due to certain cultural details which he would not communicate on any consideration, and he is under the impression

that other growers are continually endeavouring to ascertain these, even going so far as to offer some of his men very high wages to obtain their services; yet this does not appear necessary, for all growers I have seen have equally good crops.

One highly important matter is to obtain good seed, as unless this is done the crops will come irregularly, and it will be difficult to obtain a constant reliable supply. It may be here mentioned that very little of the true Mustard (*Sinapis alba*) is grown, the substitute employed being Rape (*Brassica Rapa*), which is preferred chiefly because it has a milder flavour and the young stems blanch very readily, being also free from the small hairs which the stems of Mustard bear. Cress (*Lepidium sativum*) is grown in less quantity than the Rape, as it is less in demand, and, further, it is rather more trouble to raise than the other, as most gardeners know. The wholesale prices per bushel average about 12s. for Rape and Mustard, and 16s. for Cress, though samples of superior quality realise higher prices. Another point that especially needs attention is sowing the seed very thickly (in the case of the Rape the seeds are placed as closely as possible), as that not only insures the blanching of the stems, which adds greatly to the value of the crop, but it also simplifies the packing, as when the stems are so close together they are cut and placed in the punnets quickly and evenly. A light soil or compost is invariably employed, but the best results appear to have been produced by old Mushroom-bed manure not too much decomposed, which is sifted or screened and placed in beds 3 or 4 inches deep quite level, moderately firmly, and if at all dry it is thoroughly watered before sowing the seed. Almost any kind of light soil is suitable, and old tan was used at one time very largely for the purpose; indeed, there was one grower at Vauxhall some years ago who employed that entirely. It is also said that the sawdust which is now used in some stables is well adapted for Mustard and Cress; but it is too "strong" when first received from the stables, and requires storing for a time or to be drenched with water to remove some of the ammoniacal compounds with which it is saturated. An important object is to obtain salad free from grit, and on this account the old Mushroom-bed manure seems to be especially useful, as it forms a moist nourishing medium, in which the rootlets can readily extend. The seed not being covered with soil also aids in securing a clean crop, and the surface being rendered as fine and even as possible, the produce is obtained of equal height, which also adds considerably to the value of the crop, and facilitates the cutting and packing in punnets.

These particulars especially apply to the winter and early spring supply, which has to be raised in heated houses or frames. In the summer beds are prepared outside. Where the early supply receives much attention small span-roof houses or lean-to frames are devoted entirely to the purpose, as are the inside borders of late vineries. In the former case the houses are about 9 feet wide and 6 feet high, and vary in length from 30 to 60 feet, but of course the length is of little importance. They are heated with 2-inch or 2½-inch pipes, one row extending round near the sides. The beds are 4 feet wide, thus leaving a space of a foot for a path down the centre, which are edged with narrow boards 3 or 4 inches deep on each side, and next to the pipes also. The frames are about 5 feet wide, with a pipe along the front. In the case of the vineries the prepared soil is simply spread on the surface of the border to the required depth, and the seed is sown, sometimes being pressed slightly into the soil with a flat piece of wood or something similar. A good supply of water is then given, and the seed is covered with ordinary garden mats. These are only removed when it is necessary to supply water; and this must be carefully attended to, as little is given after germination is well advanced, or decay is likely to result. The mats are kept on during the day until the young plants have grown an inch or two, when they are removed to permit the seed leaves to acquire a bright green colour—a point of some importance in combination with well-blanching stems.

In from eight to twelve days the crop is ready for cutting—i.e., when the stems are about 4 inches high, and to effect this a peculiar but simple knife is used. This has a straight flat blade like an ordinary dinner knife, but not rounded at the end, about an inch broad and a foot long. Near the handle is a crank turned upwards at right angles to the blade like a bricklayer's trowel, and the end is again turned at right angles, but parallel with and away from the blade; this is inserted in the handle just like the trowel. With this instrument the salad is cut much in the same style as mowing with a scythe, the blade being flat on the ground. One sweep of the knife cuts enough or more for a punnet, and is taken up with the hands and placed in evenly, so that it appears almost as if had grown in it. Some practice is required to effect this satisfactorily, and skilful experienced cutters can gather and pack over a thousand punnets a day. The punnets are then packed in boxes and conveyed to market in vans. The chief labour is removing the old material from the beds, which has to be done after every crop; this is stored away in a heap for several months and then incorporated with fresh material. Where the compost is purchased this is a rather expensive item, and one grower, I am informed, pays 2s. 6d. a load for old Mushroom-bed manure. In the best-managed establishments, however, Mushrooms are grown in addition, and that outlay is thus to some extent reduced. It should further be added that both houses and frames are constructed in the most economical manner possible, utility and cheapness being the chief objects.

As to the space required, some idea may be gathered from the fact that the punnets are about 6 inches in diameter, and I should think at a safe estimate a square foot of a good crop would fill two punnets of Rape, a little more Cress being required. Thus a heated frame 60 feet long with a bed 5 feet wide would yield about fifty dozen every fourteen days throughout the year, as the lights could be removed and the heat discontinued as the season advanced. Taking twenty-five crops in the year at

the rate of 1s. per dozen would give a yearly total from one frame of £62 10s.; or to put it in another way, the yearly return per square yard of ground occupied would be over £1 10s., a quarter of an acre so cropped giving £1815 per annum.

Although Mustard and Cress seed differ in cost to the extent of 4s. per bushel, there is not much difference in the results to the grower. For instance, a bushel of Mustard or Rape is sufficient to sow 256 square feet of bed, the same quantity of Cress being sufficient for 384 square feet; but for the same cost as the Cress 340 feet can be sown with Mustard. The ultimate results thus vary slightly, for though a somewhat higher price is obtained for the Cress, yet smaller quantities are required, and there is more uncertainty regarding the crop. As a guide to those intending to grow this salading it may be stated that a pint of Mustard seed is required for each 4 square feet, and the same amount of Cress for each 6 feet. From about 25 to 30 per cent. should be deducted from the estimated returns for the cost of the seed. Thus, to provide the five hundred dozen per week mentioned above between six and seven hundred bushels of seed are used yearly, at a cost of something over £400, or about one-third of the returns. The punnets are very cheap, but even for them, where such large quantities are grown, £2 or £3 per week is said to be the average outlay. It should be stated that some growers soak the Rape seed in water before sowing to hasten the germination.

Such are a few particulars concerning a very simple crop, which, if judiciously managed, can evidently be made more profitable than some others apparently of far more importance. The prices and quantities have been chiefly furnished by reliable market salesmen, and the information obtained from several different sources agrees in the main facts. Farther, to avoid misleading statements as much as possible, the lowest figures have been given in each case.—L. CASTLE.

TRENCHED v. UNTRENCHED SOIL.

It appears there are some quite ready to hear more about the subject of trenching, and perhaps another controversy at this seasonable date will not be out of place in our good old Journal. At any rate, what "A Kentish Gardener" has to say upon the matter will be very well received, and I am rather glad I did not effectually "crack his nut" when I first attempted it.

When I read how simple the work of improving all soils proves to such as "J. L. B." and "A. L. G.," it occurred to me that either I am singularly unskilful, or most unfortunate in that I meet with land that is so exceptionally difficult to cultivate profitably. It may be that the garden here might be much improved by a thoroughly new system of draining, but that at present is quite out of the question, and if ever it is done I hope someone else will have charge of the place, for I have a very vivid recollection of the effects of having to take a stokehole drain through it. That was done four years ago, and the surface affected has not yet been placed into good working order. After all, if draining and deep cultivation would be so very beneficial here, we ought to be able to detect some marked improvement in the neighbourhood of this drain, but we cannot, not even where it is only 2 feet deep, so that I may yet have to retract my first admission. At the same time, a thorough and intelligent drainage does effect a remarkable improvement in heavy stagnant localities such as ours, but our 100-year-old garden, besides being intersected with choked drains has also a bad outlet. It is by no means singular in this respect, for I have practised in one large garden, almost on a level with a river, and very frequently water was standing in the subsoil, it being quite a common occurrence for the boiler fires to be extinguished by water. Would any of my opponents recommend deep culture for this garden, and at least three others that I could name almost as badly situated?

"A Kentish Gardener" need not hesitate to introduce according to his ideas any commendable practice adopted by farmers, although, perhaps, they as a body have more to learn from us than we from them. I really wanted someone to mention something about steam power and its capability of unearthing riches that had for centuries lain locked up a foot or so lower, as it was the baneful effects of the steam plough that tended to strengthen my ideas that the value of trenching is very much overestimated. Here let me protest against the insinuation that I have jumped too quickly at conclusions on this subject; on the contrary, the first garden I was connected with was ruined by injudicious, I may say reckless, trenching, and this has always been well remembered, and the whole tendency of my remarks upon trenching has been to warn others of the risks they may run. For the last fourteen years I have been taking note of various experiments on farms, market gardens, and in private places, some being confirmatory, and some being condemnatory of my recently expressed opinion. I have watched steam ploughs at work on large tracts of land, and at one time was delighted with the way in which they "unearthed the riches," but latterly I began to have my doubts about these miniature gold mines, especially when some of the votaries of the steam plough figured conspicuously in the bankruptcy courts, the machinery being principally blamed for the breakdown. By machinery I mean the actual costs of its purchase and subsequent contingent expenses, and also the results of going too deep. The scarifier on many soils is better than the subsoiler, and that those who have brought up the clays to the surface found to their cost. No matter how deep and good the soil may be, if the surface is unworkable, failures, or partial failures, must result. Not only is trenching in any form most expensive work, but the subsequent surface culture is more laborious, and requires more judgment than ordinary digging.

My opponents ought to quote correctly and not in a garbled fashion to suit their arguments. For instance, I have distinctly stated that deep alluvial soil may sometimes be trenched with advantage, yet "A Kentish Gardener" asserts I encourage trenching only in the case of light gravelly soil. Another correspondent has gone the length of asserting that it is only quite recently that I have admitted any good at all could be done by trenching under conditions, and which he must know to be erroneous.

I may be asked what I would term judicious trenching, and will reply in anticipation, and will leave it to my readers to decide if I am far wrong in describing this as rather expensive work and not likely to be generally adopted in these times of great reduction in manual labour. A friend of mine selected a good square of ground for Onions, and made up his mind that he would have some good ones or much superior to any that might be grown in the "orchard." He could command nearly 2 feet of good soil, and this was bastard trenched early in the autumn, abundance of good solid manure being worked into each spit. After the ground had settled somewhat the surface was forked over, this being repeated at intervals during the winter, a dressing of soot being given each time. At sowing time he had a good depth of firm ground in excellent condition, and a wonderful crop eventually resulted. The following winter only the surface was dug and well worked and more soot given, Onions being again sown, and such Onions as are now ready in great quantities for exhibition I have never seen surpassed. In the rectory garden near here a good breadth of ground has been trenched, only the "shovellings" of clayey subsoil reaching the surface. As much manure was mixed in as could well be done, and when I saw the ground some of this had reached the surface during the process of forking over. A few repetitions of this forking the surface will bring it into good working order, and the Peas, for which it is prepared, will do well from the commencement, and probably be benefited, especially if the season is very dry, by the deep root run. This is doing the work well, very different indeed from the way it is usually done, and I shall watch the result closely. Unless I am much mistaken, however, if we could expend half as much time and half as much manure on our ground our crops would be fully equal to those at the Rectory. As it is our Peas usually grow too tall, and trenching either increases this tendency to produce too much haulm, or, if the season is wet and cold, it renders the ground totally unfit for Peas.

"A Kentish Gardener" advances several good reasons why surface culture should be of the highest order, yet, in actual practice, favours the very methods of treating the ground that is bound to induce deep root action. As he easily proves, various plants thrive best on ridges where they receive the full benefit of the sun's rays and the humid ammonia-charged atmosphere, and why will he insist upon trenching, and thereby lose all the benefits he so ably points out as being derived by the Beans and Lettuces on the ridges? One important reason he omitted to mention. I am strongly of opinion that the firmness of the soil has much to do with the Lettuces and Beans doing so well on Celery ridges. I am surprised to find that even "A Thinker" has insinuated that it is owing principally to a greater depth of soil they receive the benefit of, forgetting that these ridges are only a trifle above the ordinary ground level, the soil thrown out being a comparatively thin addition to the surface of the wide spaces between the trenches. Then we are told they have long tap-roots, and are also enabled to find a "double dose" of food. That reads prettily, Mr. Thinker, but I must point out that we largely plant out the Beans, and at least one-half of the Lettuces, and the tap-roots are not often preserved in the operation, or at any rate are diverted from their natural course. It is the valuable surface soil that Nature is constantly improving that vegetable life naturally thrives best in, and this our deep trenchers would muddle up with wretched clay and other abominations. I am so much in favour of surface culture that for the future the hulk of our Potatoes will be planted on the surface and moulded over. This season we had a breadth of heavy ground, 67 feet by 46 feet, planted on the surface with Veitch's Ashleaf Potatoes in rows 3 feet apart. Between these Brussels Sprouts were planted. We lifted 8½ sacks, or 34 bushels of good Potatoes, and at the same time moulded up the Sprouts. The latter now completely cover the ground, and are producing abundance of hard knobs; a better breadth being almost impossible to find. I should add the ground was manured and roughly dug early in the winter previous, and a sprinkling of superphosphate of lime was added at planting time. If we had trenched that piece of ground, in all probability the Potatoes would have formed too much haulm, and even if we had been able to plant the Sprouts they would have grown lanky and gone too much to leaves to be profitable. Which forms the best growth when Broccoli or any member of the Brassica tribe planted out before they have long stems, or those which have of necessity to be dibbled in deeply? The former root almost wholly near the surface, the roots of the latter never reach the surface, and a sappy delicate top-growth is the result. With us Asparagus absolutely refuses to grow unless planted on the surface and encouraged to root in the top spit. Directly the roots of fruit trees leave the surface soil the crops are poorer in every way, and lifting has to be resorted to, this even in houses where the drainage is perfect. The colour of the foliage of Peach trees especially intimates where the roots are, and this season we have partially or wholly lifted several. Mulching is comparatively a simple matter, and any gardener in the country can easily avail himself of some kind of material more or less suitable. Only this week I have acted as doctor in the case of deeply rooting Vines. Those roots formed near the surface, induced by mulching and good surface treatment, had abundance of fibre, whereas those 18 inches deep were

comparatively fibreless, neither fruit trees nor vegetables forming much fibre when far below the surface.—W. IGGULDEN.

REVIEW OF GRAPES.

MR. J. MCINDOE, writing under this heading at page 321, in reference to the two bunches of Grapes staged by Mr. W. Taylor at the Crystal Palace and Kensington Shows early in September last under the name of Gros Maroc, says, "I with two well-known Grape exhibitors carefully examined them. At first sight they appeared to be as dissimilar as it is possible for two bunches of one variety to be." The largest one, Mr. McIndoe says, appears to have been taken from the leading shoot of a strong young Vine, the wood of which appears to have been thoroughly ripened last year. The other bunch had evidently been cut from a weak lateral that had not been well ripened last year, hence, says Mr. McIndoe, the difference in length of footstalk and general appearance. He further says, "Upon looking over several other stands of Gros Maroc, we could discern as great or greater differences between different samples as in that of Mr. Taylor's two bunches." I have quoted Mr. McIndoe's remarks on this subject, so as to present his somewhat strange conclusions and my criticism thereon together in the same article before your readers, so that they may see at a glance the grounds upon which Mr. McIndoe based his remarks, and judge for themselves whether they are such as to justify the conclusion at which he arrived.

I, like Mr. McIndoe, was an exhibitor of Grapes at the Crystal Palace and South Kensington Shows early in September last, and, in conjunction with several skilled gardeners, examined and admired Mr. Taylor's Grapes at the Palace Show; but, unlike your correspondent, at first sight we thought the larger and more symmetrical bunch of the two shown as Gros Maroc was Gros Colman, and the more closely we examined the two bunches in question, which curiously enough were alternated with Black Alicante on the stands, the more fully were we convinced that they were two varieties—Gros Colman and Gros Maroc. The general character of the bunch referred to—size, shape, colour, and bloom of berries, with one exception, were unmistakeably those of Gros Colman. In short, the two bunches were strikingly dissimilar in every respect. And in support of this opinion, expressed at the time the said bunch was being examined by several competent judges, I suggested a comparison with the several stands of Gros Maroc staged in the class for that unmistakeable Grape a few yards from Mr. Taylor's excellent collection, not one bunch of which resembled that gentleman's small Gros Maroc bunch, though they all more or less resembled the large one. I am aware that there were observable differences in a few of the samples of Gros Maroc shown in that class, the berries in some bunches being less oval than those in others, but they were all unmistakeably Gros Maroc. But I am taking up more space than I had intended doing, as I had only intended asking Mr. McIndoe to kindly show in what way the "leading shoot of a strong young Vine, the wood of which appeared to him to have been thoroughly ripened last year, and the weak lateral that appeared not to have been well ripened last year," could contribute to the production of a bunch composed of globular berries having the colour and bloom of a Gros Colman Grape in one case, and that of one having oval berries and the colour and bloom of Gros Maroc in the other. I am well aware that the ripeness or unripeness of the wood has a good deal to do with the production of compact or loose bunches, but I have yet to learn that properly ripened wood is instrumental in the production of round-berried Grapes instead of oval-shaped ones, and *vice versa*.—EXHIBITOR.

CULTURE OF THE MELON.

[A paper read by Mr. J. A. Mann, gardener to D. B. Kendall, Esq., M.P., Heath House, near Wakefield, to the Wakefield Paxton Society, 18th September, 1886.]

THE Melon is a tender annual, producing one of the richest fruits brought to the dessert table, and has been cultivated in England since 1570; but the precise time of its introduction and native country are unknown. It was originally brought here from the tropics, and was till the time of Miller called the Musk Melon. To grow the fruit to perfection the aid of artificial heat and glass are required throughout every stage of its culture, and even in the warmest months it cannot be brought to perfection in Britain without the protection of glass. Ripe fruit may be had at any season with the exception of midwinter; but the main crop of fruits for general demand are seldom cut at the earliest before the middle of May, and the last succession mostly ceases to yield fruit after October. To ripen the largest and best fruit with the best flavour as great an atmospheric and bottom heat is required as is sufficient to ripen the Pine Apple in this country; but as the Melon is produced from an annual plant, the seed of which must be sown every year, it requires a different mode of culture.

Different methods of treatment and various kinds of earths and of manures have been recommended and used successfully in Melon culture, but the great thing after planting the young seedlings is to give them plenty of atmospherical heat and a sufficiency of air. The Melon will succeed in any unexhausted loam if it be rich in vegetable matter with a mixture of sand, but not too light. The following is a good compost:—Two-thirds of the top spit from a sheep pasture, adding sharp sand if the earth contains little or none till half is sand; add one-sixth of vegetable mould and one-sixth of well-decayed manure; or if the earth is not obtained from a pasture sheep dung may be substituted for the last. The ingredients should be well incorporated and pulverised, drying the compost, and before it is used warm it in the frame. The Melon will grow

and produce fruit of a good flavour if it be planted in any kind of earth not of too light a texture, whether it be taken from the kitchen garden or from a cornfield mixed with good decayed dung; but soil of a loamy nature is the best, because it retains moisture longer than light soil. Earth dug from the surface of a common where sheep and cattle have long been pastured is excellent for the Melon, but it should be well broken to pieces about the size of an Apple, and lie five months before it be used, and if it be exposed to a winter's frost it will do it good. Unless the soil used is very strong I make it a practice when the Melon beds are earthed up to tread the surface, which makes the earth retain its moisture longer than if it were left loose.

Ripe fruits may be cut in about fifteen weeks from the time of sowing the seed as an average period; when many short and wintry days fall in the course it may last eighteen weeks, but when the forcing is not commenced till the days are nearly twelve hours long and continuously lengthening ripe fruit are sometimes cut in ten weeks. Little time is gained by beginning to force Melons in December, seed for the early crop is, as a rule, sown from the middle of January to the first week of February, and the succession crop at the beginning of March, and the late crops intended to fruit at the end of the summer in the middle of April. The plants may be raised in a Cucumber bed, and this is the general practice; but I prefer a separate bed with a higher temperature than the Cucumber requires at the same period of the year. A one or two-light frame may be used, according to the number of plants required. As soon as the plants appear admit air cautiously, protecting the frame or pit with matting at night and on frosty days. At favourable opportunities give a little air, which will get rid of the condensed steam from the glass. When the seed leaves are about half an inch long transfer the seedlings into small pots about 4 inches in diameter. Give a gentle watering to the roots, then plunge the pots in the bed again and keep them close for a few days. The young plants will then have formed roots, when more air can be given on favourable occasions, which will help to strengthen them. When air is admitted it should be given at the upper end of the lights, which should be raised about an inch or two, according to the amount of sun.

Close early and damp the house, but if they are in a dung pit damping is not required. Water occasionally when the earth appears dry. As the plants advance in growth the first runner bud should be stopped by cutting or pinching the top off close to the first or second joint. This strengthens the plants and promotes fruitful growth. When the first growths are three or four joints in length, if no fruits be shown stop them at the third joint in order that they may produce fruitful laterals, and as the runners extend train them over the surface of the bed with neat pegs. Many shoots, as the plants proceed, will show fruit, but many barren ones are produced, and hence it becomes necessary to regulate them. Cut out the superfluous unfruitful or evidently useless shoots, especially the very weak and the most luxuriant, for the medium-sized shoots are the most fertile. As the blooms expand assist the setting by fertilising them. The Melon, however, will also set naturally and produce fertile buds if the time of fructification fall at a season when the house can be left almost constantly open. I have proved by experience that unfertilised Melons will not swell such fine and handsome fruits as fertilised ones, and therefore I consider it more necessary to attend to this operation in Melons than in Cucumbers.

When planting the Melon be careful to see the soil is properly warmed. From 75° to 80° is a suitable temperature, although I believe that the Melon will stand any amount of heat if there be plenty of moisture, and the plants be in a healthy condition. When the plants have leaves about 3 inches long, and about two or three leaves on each plant, they are quite ready for planting out, but never allow one to get too much root-bound, or it will injure it in its after growth. A young plant never should receive any check before it is placed out. Turn the plants out of the pots carefully, not disturbing the roots if possible. After planting give a gentle watering over the bed and round the roots. Take care not to wet the stems, shut the frames close until the heat and steam arise, then give a little air. Place a mat, or any other material, to shade them at mid-day until the roots have formed, which will be in three or four days after planting. Choose a warm morning for watering before the middle of May, and in summer the afternoon or evening according to the aspect of the pits. This operation should be done with great care, and let as little as possible fall on the newly set young fruits, or near the main head of the plant. As the fruit becomes nearly ripe lessen the quantity of water given, just keeping the foliage from flagging, and withhold water entirely when the fruit begins to turn colour.

In varieties almost every gardener has his special favourites, but it does not follow that those are the best for all purposes, one reason for this, among several, being that so much depends upon the conveniences of the cultivator, as well as the taste of those for whom the fruits are grown. At the same time a few remarks on the various sorts that have come under my notice may be of service to intending cultivators who may yet be undecided as to what variety to select. There are many varieties of Melons before the public at present, and it would be almost impossible to choose the best. I should advise anyone that has a good sort to save the seed, and not to get it crossed with any other. I have found the following varieties very good, and can recommend them to anyone that has a convenient place to grow Melons in. I shall only name four, which I think are enough for any gardener to grow—namely, Hero of Lockinge, scarlet fleshed; William Tillery, green fleshed; Herc of Bath, scarlet fleshed; and Dr. Kendall, scarlet fleshed. The last is a seedling raised by myself. It is a very handsome Melon, beautifully netted, and when quite ripe it has a splendid golden colour. I exhibited a fruit two

years ago at the Leeds Horticultural Show, and the Judges awarded it a first-class certificate and the first prize for the best Melon in the show. It has been exhibited at several shows since, and has always gained first honours.

WINTERING ALPINE PLANTS.

It is at this season of the year that lovers of alpine plants generally will be considering the best methods for the safe keeping of their pets during the winter months. Not because they are tender, not because the climates of England and their varied mountain habitats are so widely different—at home they naturally exist during winter, snowbound perhaps for several months, while here they are exposed to incessant changes. They may be frozen hard during the night, with a rapid thaw in early morn, to be again succeeded by a biting frost at night. Compare this incessant change with the conditions under which they exist in their mountain home, where they remain snug beneath a deep bed of dry snow, uninfluenced by external conditions and changes, and who will wonder at the collapse of many a choice plant? Still, it must not be regarded as an indispensable condition in their cultivation, and indeed it is fortunate it is not so, otherwise many who now enjoy a sight of alpinists would be debarred from it. It is, however, so to speak, indispensable to a few, while it cannot be well imitated at home. Those plants which seem to suffer most away from their mountainous home are such as form dense cushions of soft silken or downy leaves, of which several of the Swiss, Pyrenean, and Himalayan Androsaces are fitting illustrations. Many of these often puzzle the most experienced cultivator of alpinists, and those who, like myself, have had to contend with London smoke and London fogs, know something of the disappointment experienced at the sudden damping off of some choice plant which had made a presentable specimen. Such plants as *Houstonia cærulea*, *Eritrichium nanum*, *Sibthorpia europea* fol. var., and others of like character have this peculiarity.

For all alpinists of a doubtful character which are kept in pots a light airy frame forms the best receptacle, but having had occasion year after year to winter large quantities of choice plants I have not omitted to notice the results, and I can only say had the choice been mine I should never have placed them in the only frames then at my disposal, and in which numbers of plants succumbed annually from damp alone; indeed, the greatest difficulty was to get the plants dry, especially if they happened to be placed in frames at a wet time. I am convinced that the majority of alpinists are better with no frames at all, unless they can be accommodated with abundance of ventilation all the winter. I am strongly opposed to covering frames containing alpinists with mats, even in the most severe winters, but rather to keep them freely ventilated the whole time. The number of deaths attributable to frost as compared with that of damp are very few; indeed, frost will seldom harm even our choicest alpinists provided the foliage is dry and the soil is moderately dry at the roots. In the long severe winter of 1878 and 1879 I had a very choice collection of alpinists in frames, among which were *Houstonia*, *Androsaces*, *Himalayan Poppies*, most of which were established in their pots, beside a late autumn consignment from Zurich, only recently potted. Of these I had little fear, but with them under precisely the same treatment I wintered several hundreds of *Leucophyton Browni*, a plant then in demand for bedding purposes. I had some little difficulty in getting permission for the last-named to remain, but I succeeded, and I think there was something like a score of dead ones when the winter had passed, and these could not have been killed by frost, as most of them were healthy and vigorous, much more so than a few which had found their way into a heated house, whence they came sickly and weak. The secret of my success I regard as this: the whole of the plants were always freely ventilated, not only by the lights being tilted sideways, but around the frame. In each light I had removed a brick at the back and front; this guaranteed a free current and constant circulation of air passing amongst the plants. Therefore, if a frame be employed for wintering alpinists let it be similarly ventilated. In such a frame alpinists are benefited, but in the majority of frames they are invariably ruined. There are several ways by which frames for choice alpinists may be freely and continuously ventilated without extra expense. In the construction of such a frame let the position face south, and let it be from 2 feet to 2 feet 4 inches deep in front and an additional depth of 9 inches at the back. Fill in to a depth of 12 or 18 inches with brickbats, clinkers, or any material which will ensure a perfect drainage, adding fine ashes to stand the pots upon; this will bring the plants near the glass. Instead of bricking the frame in the ordinary way, the space of half a brick or less should be left; or if there be many cats about use perforated bricks placed at such a height that the plants may get the full benefit of the air, either placed in one continuous course throughout the frame or inserted at intervals. The lights may also be raised by screwing wooden rests about 3 inches high to the wall plate back and front, each light requiring four of these—one at each corner. The lights being thus bodily raised ensures all that is requisite in this respect—viz., a free ventilation, and which must be had to winter rare alpinists in frames.

These remarks so far have only referred to pot plants and frames, so that we have now to consider choice plants on the rockery. There is only one way, and this is within the reach of all, this is by placing pieces of glass slightly sloping over the plants to throw off the rain; this makes an excellent protection, and is easily and readily applied. In this way all choice plants, such as *Opuntias*, *Indian Meconopsis*, *Androsaces*, *Houstonias*, *Epigæa repens*, which is benefited by temporarily covering it during its flowering period, *Agave utahensis*, and *Eritrichium*, *Grenovia dodrantale*, and *Edelweiss*, will be safe. *Primula obconica* may also be so treated till thoroughly established, and among *Saxifragas* few

will take any harm, all of the crustaceans and mossy types being thoroughly hardy. In the first named group, however, there are some which, provided the plants are small, may be similarly treated; these are *S. Rudolphiana*, *S. calyciflora*, *S. squarrosa*, *S. aretioides* and *primulina*, with *S. coriophylla*, and *S. lutea viridis*. These are all lovely plants, and all remarkably slow growers, hence the desirability of taking some extra precautions. The *Saxifragas* which suffer most is the *Megasea* group, of which ciliata is the most tender. These are invaluable for spring gardening, and unless the situation be highly favourable for them a slight protection will not only hasten the flowering period, but will assist in retaining the foliage. Even at favoured and sheltered Belvoir Mr. Ingram deems it prudent to protect with handlights all the most valuable of the *Megasea* group. *Armeria juncea* and *Campanula Raineri* may be covered with glass; *Lewisia rediviva*, *Onosmas*, *Cyananthus*, *Drabas*, *Gentianas*, and *Phyteumas* will be safe if in well drained positions on the rockery; the same may be said of the major portion of *Primulas*, *verticillata* and *erosa* being about the only two species which are permanently injured by frost, the best place for the former being the cool greenhouse. *Soldanellas* should be in the frame, and take special note of *Hypericum ægyptiacum* and *balearicum*. A wet and frosty winter will kill these. *Primula capitata*, a species I had almost forgotten, must be protected.

From the foregoing remarks some idea may be formed of what plants require protection. It is next to impossible to give a complete list, since so much depends on the season alone, so that amateurs while taking the foregoing remarks as a rough guide will do well to lean a little on their own experience, at the same time carefully considering their own peculiar circumstances.—E. JENKINS.

ROYAL HORTICULTURAL SOCIETY.

OCTOBER 12TH AND 13TH.

THE series of exhibitions provided at South Kensington this year is nearly completed, some most varied and successful displays having resulted from the liberal prizes contributed for the purpose. There has been a succession of shows devoted to the favourite flowers in season; vegetables have been amply represented, and the later exhibitions have been appropriated to fruit and *Chrysanthemums*. At the preceding gathering Grapes formed the principal feature; at that held on Tuesday and Wednesday last Apples and Pears were specially provided for; and at the next, and concluding show, *Chrysanthemums* are to take the leading place. The exhibition of the present week must, however, be recorded as one of the most successful and satisfactory of the season, and the grand array of Apples must have afforded a surprise to many horticulturists who know too well how short is the crop of those fruits. Pears also were represented by some fine specimens, though taken generally they were more irregular in quality than the Apples. Then there were plentiful exhibits of Dahlias, Roses, and hardy flowers to vary the display, a capital competition with vegetables and a remarkable show of Tomatoes all contributing to the interest of the exhibition, every available portion of space in the conservatory being occupied, and some non-competing exhibits had to be very reluctantly refused.

FRUIT COMMITTEE.—Present: T. Francis Rivers, Esq., in the chair; and Messrs. J. Burnett, C. Ross, T. J. Saltmarsh, W. Denning, G. Norman, J. Ellam, G. Bunyard, A. W. Sutton, Harry J. Veitch, F. Rutland, Wm. Paul, W. Warren, R. O. Blackmore, P. Crawley, S. Ford, T. B. Haywood, G. Goldsmith, G. T. Miles, and J. Woodbridge.

Mr. T. Laxton, Bedford, contributed a collection of seedling Potatoes raised by himself, fruits of Apple September Beauty, which has been certificated; the Dartmouth Crab, of beautiful colour and with a bloom like a Plum; autumn fruits of Laxton's Noble Strawberry, open-air Tomatoes, and a new Pear, a seedling from Autumn Bergamot, which is noted in another column. Mr. J. Phillips, Tudor Road, Norbiton, was awarded a vote of thanks for an Apple named Princess Royal, which somewhat resembled *Mère de Ménage* and *Scarlet Nonpareil* in good condition. Mr. Chalkwick, Ealing, showed some well-coloured Peaches from trees out of doors on a wall, for which a vote of thanks was adjudged, a similar recognition being accorded to Messrs. T. Rivers & Son, Sawbridgeworth, for fine samples of the large purple Monarch Plum; October Yellow and Grand Duke also being fine, from the same firm. Mr. Pionchon, Marine Hotel, Shanklin, Isle of Wight, had a large Pumpkin weighing 90 lbs., with a collection of Gourds, Beet, Apples, &c. Mr. A. J. Harwood, Colchester, sent some branches of the black Bullace loaded with fruits (vote of thanks); and Mr. G. T. Miles, Wycombe Abbey Gardens, showed a magnificent fruit of Pine Apple Lord Carrington, 9 inches deep and 6 inches in diameter at the base, the cultural commendation awarded being well deserved.

From Mr. R. Dean, Ealing, came fruits of the Nanny Apple from a tree on the Crab stock, grafted eighteen years, the grafts being from a large tree in Hampshire, supposed to be 100 years old (vote of thanks). Good fruits of Ribston Pippin, weighing 8 ozs., were also shown, said to be from a tree formerly dying of canker, but which was "beheaded," and has now a healthy, fruitful top. Mr. Anton Horvath, Hungary, sent a collection of outdoor Grapes, chiefly Frontignans, forms of Chasselas and Muscat Hamburg. Mr. A. J. Oxford, Alderley Park, Chelford, Cheshire, sent a Vegetable Marrow of nearly globular form, and described as "a good summer and winter vegetable." Mr. C. Springham, Penylan, Llandogo, Monmouthshire, showed a seedling Nut raised ten years ago from Cosford Cob; it was of good size, short, and round. Mr. Howe, Benham Park Gardens, Newbury, exhibited a Melon a cross between Blenheim Park and Hero of Lockinge, which the Committee wish to see earlier in another season. Messrs. Saltmarsh & Son, Chelmsford, had a collection of Plums, comprising Coe's Golden Drop, Jefferson, Coe's late Red, Wyedale, and Belle de Septembre; samples of the Queen Apple, the Dartmouth and Scarlet Siberian Crabs were also shown. Mr. S. Ford, Leonardslee Gardens, had fruits of a pretty, red-streaked, medium-sized conical Apple, named Ford's Seedling, which the Committee desire to see again in May. Mr. H. Deverill, Banbury, had several varieties of Beet, Celery, Carrots, and Beans; Neal's Ne Plus Ultra Runner Bean with some of the others being referred to Chiswick for trial. A cultural commendation and a silver medal were awarded him for an

extremely fine collection of Onions of the varieties Anglo White Spanish, Rousham Park Hero, and Improved Wroton.

FLORAL COMMITTEE.—Present—G. F. Wilson, Esq., F.R.S., in the chair, and Messrs. H. Cannell, H. Herbst, H. Bennett, G. Duffield, J. Hudson, T. Baines, J. Walker, W. Wilks, Shirley Hibberd, Amos Perry, W. Holmes, R. Dean, G. Paul, H. Ballantine, J. Dominy, H. M. Pollett, A. J. Lendy, J. O'Brien, E. Hill, H. Turner, and J. Douglas.

Messrs. H. Cannell & Sons, Swanley, had a beautiful collection of double Tuberous Begonias and Cactus Dahlias, several of which were honoured with certificates. Of the former notable varieties, in addition to those described under that head, were Madame Arnoult, pink; Goliath, scarlet; Pavilion Janne, yellow; Rosetta, pink; Virginalis, white, and Felix Crousse, scarlet. Amongst the Cactus Dahlias were Charming Bride, rose and white; Lady E. Dyke, yellow; Mrs. G. Reid, mauve; and Lady Kerrison, red and yellow. Messrs. Veitch & Sons had two new Rhododendrons (both certificated), the distinct and handsome Amasonia punicea, and several new Japanese Chrysanthemums, such as Bouquet Estival with fluted florets, purplish, and Charlotte de Montcabrier, of similar style, bluish tinted, nearly white, and some fine Celosias (vote of thanks.) Mr. E. Penford, gardener to Mrs. Halton, Barufield, Weston, showed a plant of *Pteris serrulata westonensis*, a variety with deeply cut or lacerated and crested fronds. Mr. B. Searing, gardener to C. J. Partington, Esq., Cheshunt, was awarded a cultural commendation for flowers of *Cattleya Gaskelliana alba*, pure white, with a golden throat, and of *Vanda cœrulea*, very large and of a fine blue tint. Messrs. J. Laing & Co., Forest Hill, showed a pretty single Dahlia, named Pink Paragon, pink, edged with white. Messrs. F. Sanders & Co., St. Albans, exhibited their pretty and fragrant *Odontoglossum Sanderianum* (vote of thanks), and a variety of *Cypripedium Spicerianum* named magnificent, with large well-coloured flowers. Mr. G. Stevens, Putney, had several new Japanese Chrysanthemums, one of which, William Holmes, was certificated; the others were Mrs. Stevens, mauve; Martha Harding, golden yellow; and Thomas Stevens, mauve. Mr. Robert Marnock sent branches of *Hippophaë rhamnoides* crowded with its bright yellow berries. Several remarkably large and handsome heads of Carter's New Empress Cockscomb were exhibited that had been grown at Compton House, Shrivenham; they were 20 inches over from tip to tip of the "combs" and about 7 inches in diameter, of a rich crimson colour.

CERTIFICATED PLANTS.

Begonia Mrs. Plunkett (H. Cannell & Sons).—A beautiful double variety, white faintly tinted with salmon; of charming form.

Begonia M. Paul de Vicq (H. Cannell & Sons).—Another fine double of similar style, but bright rose, and beautifully formed.

Dahlia Annie Harvey (H. Cannell & Sons).—One of the "Cactus" Dahlia group, of a fine maroon shade; very rich and excellent.

Rhododendron amabile (J. Veitch & Sons).—A hybrid with large symmetrically formed bluish tinted flowers, the lobes rounded; very handsome, and a fine addition to the greenhouse hybrids already in cultivation.

Rhododendron luteo-roseum (J. Veitch & Sons).—A hybrid of the same group as the preceding, with pale rose beautiful flowers of fine shape.

Adiantum imbricatum (Mr. G. Masters, gardener to Col. H. Cornwall Legh, High Legh Hall, Knutsford).—A variety raised from spores, and something of the farleyense style, but with rather smaller deeply cut pinnules and more compact fronds; very graceful, and apparently of good habit.

Dahlia R. T. Rawlings (Rawlings Bros.).—A show variety of great merit, the blooms deep and well formed, bright yellow in colour.

Certificates were also awarded for Dahlia Eleanor (Cheal & Sons), and single Dahlia Zephyr (Turner, Slough).

Chrysanthemum William Holmes (H. Cannell & Sons, and G. Stevens).—Some doubt was expressed whether this should be termed a Japanese or a reflexed variety; it is rather too small for the former, and would be a fine addition to the latter class. The florets are flat or slightly fluted, deep red, yellowish bronze on the under surface, giving the bloom the appearance of a bronze centre. It is of good substance and bright colour.

THE FRUIT SHOW.

APPLES.—So extensive was the display of Apples, and so remarkably fine were a large proportion of the fruits, that the Show in these respects has not been surpassed. In addition to the sixteen classes devoted to Apples, in which the competition was very keen in most cases, there were large collections not entered in the classes, besides those from Canada, which are referred to in another column, affording a representative exhibition of some hundreds of varieties.

Five classes were devoted to the collections, the first being for fifty varieties, six fruits each, which brought seven competitors, Messrs. G. Bunyard & Co., Maidstone, repeating their success at the Crystal Palace recently, and gaining the premier prize. These fruits were exceedingly fine and richly coloured, their appearance being still further improved by arranging them on leaves in the dishes. The most noteworthy varieties were Stirling Castle, Emperor Alexander, Worcester Pearmain, Lord Derby, King of the Pippins, Lord Suffield, Lady Henniker, Grenadier, Loddington, Schoolmaster, Cox's Orange Pippin, Cellini, Hawthornden, Warner's King, Melon Apple, Ribston Pippin, Cox's Pomona, Old English Codlin, The Queen, Washington, Wealthy, Golden Noble, Queen Caroline, Gloria Mundi, Ecklinville, Beauty of Kent, Potts' Seedling, and Peasgood's Nonesuch. Mr. C. Slater, Heavitree Bridge, Exeter, secured the second place, his fruits being large clean samples, but not quite so bright and well coloured as the first. Especially fine were Catshead, Lewis's Incomparable, Beauty of Wilts, Peasgood's Nonesuch, Dumelow's Seedling, Ecklinville, Golden Noble, and Cox's Pomona. Mr. J. Watkins, Pomona Farm, Withington, Hereford, was third, showing Duchess of Oldenburg, Worcester Pearmain, Catshead, Green Costard, Lord Suffield, Cox's Pomona, Warner's King, Emperor Alexander, and King of the Pippins, in capital condition, amongst many others.

Eight exhibitors entered with twelve culinary varieties, the leading place being accorded to Mr. J. McKenzie, Linton Gardens, Maidstone, who had extremely large and handsome fruits of Warner's King, Gloria Mundi, Frogmore Prolific, Peasgood's Nonesuch, nearly 6 inches in diameter, Ecklinville, Emperor Alexander, Waltham Abbey, Lady Henniker, Loddington, Winter Hawthornden, Mère de Ménage and Stirling Castle. J. Hargreaves, Esq., Maiden Erleigh (gardener Mr. T. Turton), was a close second, his fruit being very clean and of good size, some highly coloured Cellini, and large Peas-

good's Nonesuch, Mère de Ménage, and Emperor Alexander, attracting attention. Mr. C. Ross, Welford Park Gardens, Newbury, took the third position, Mère de Ménage wonderfully large and of capital colour, Brabant Bellefleur large, Dutch Codlin, and Stirling Castle being his best dishes. For six culinary varieties Mr. A. Smith, Warren Hill Gardens, Loughton, Essex, was first amongst thirteen exhibitors, with large clean beautiful samples of Emperor Alexander, Gloria Mundi, Ecklinville, Peasgood's Nonesuch, Alfriston, and Annie Elizabeth. R. Norton, Esq., M.P., Down House, Yalding (gardener Mr. Threadgold), and J. T. Friend, Esq., Northdown, Margate (gardener Mr. F. Miller), were second and third.

Competition was very keen in the class for twelve dishes of dessert Apples, the ten good collections entered requiring very careful judging. Mr. C. Ross took the lead with beautiful even fruits of Baumann's Reinette, Gravenstein, Lady Alice Eyre, a seedling from Golden Reinette raised in 1875; Blenheim Pippin, Orange Pippin, Adam's Pearmain, Cornish Aromatic, Worcester Pearmain, Ribston Pippin, Cockle Pippin, Court Pendu Plat, and Evargil. Mr. J. McKenzie followed, his Worcester Pearmain, Jefferson, King of the Pippins, Mahbot's Pearmain, Ribston Pippin, and Ingestre being of great merit, while in Mr. C. Slater's third-prize collection were King of the Pippins, Cornish Aromatic, and Worcester Pearmain in excellent condition. Still more numerous were the contributors with six dessert varieties, no less than sixteen competing. C. A. Hoare, Esq., Kelsey Manor, Beckenham (gardener, Mr. C. J. Goldsmith), won first honours with excellent bright handsome fruits of Nanny, Ribston Pippin, King of the Pippins, Fearn's Pippin, Worcester Pearmain, and Cox's Orange Pippin. Mr. Wm. Jacobs, Petworth, was second, also with highly coloured fruits, Nanny, Worcester Pearmain, Ribston Pippin, and King of the Pippins again being most prominent. Mr. F. H. Virgo, Somerset, was third, showing Blenheim Pippin, King of the Pippins, and Ribston Pippin, very fine.

The succeeding classes were devoted to special varieties, and were very interesting as indicating the relative popularity of the respective sorts. The prizes were offered in each case for single dishes of six fruits. Blenheim Pippin came first with seventeen exhibitors, Mr. S. Haines, Coleshill House Gardens, Highworth, securing first honours for beautiful fruits, large, clean, and bright. Mr. W. Jacobs and Mr. J. S. Hodgson, Lythe Hall, Haslemere, followed, each showing well, as did also nearly all the others in the class. Of Cox's Orange Pippin twenty-one dishes were shown, T. T. Drake, Esq., Shardeloes, Amersham (gardener, Mr. T. Bailey), leading with superb fruits from an orchard house. Messrs. G. Bunyard & Co. were second, and Mr. S. H. Goodwin, Mereworth, Kent, third, this class also being a very good one in the general quality of the fruit. The same number of Ribston Pippins were staged, T. F. Halsey, Esq., M.P., Gaddesden Place, Kent, having the best, fine clean-cut well-grown fruits. Mr. C. J. Goldsmith and J. Abernethy, Esq., Whiteness, Margate (gardener, Mr. R. Silk), were second and third in the order named with fruits very few points behind the first.

The most numerous competitors in any class, however, entered with King of the Pippins, and a very beautiful display the twenty-six dishes of these formed. They were very even in size and general qualities, and the Judges did not have an easy task in selecting the winners. Mr. G. Thompson, Croxby House Gardens, Hounslow, was placed first, closely followed by Messrs. G. Bunyard & Co. and Mr. Chadwick, Hanger Hill House Gardens, Ealing. Nine dishes of Dumelow's Seedling were shown, F. R. Brougham, Esq., Wallington Bridge, Carshalton (gardener, Mr. W. Jones), Mr. D. C. Powell, Powderham, Keaton, Exeter, and Mr. Chadwick were the prizetakers with fair-sized specimens. Only four dishes of Mère de Ménage were entered, but the premier fruits from Mr. C. Ross were of extraordinary size and most richly coloured; Mr. G. H. Richards, Somerley Gardens, Ringwood, being second also with large but not such deeply coloured samples, Mr. Powell taking the third place. Golden Noble was well represented by eleven exhibitors, Messrs. Powell, Bolton, and Slater gaining the prizes for highly coloured clean fruits. Warner's King was shown by a dozen competitors, all the samples being large, but especially those from Messrs. Turton, Bunyard, & Co., and J. Fincham, Nacton, Ipswich, who won the honours. Gloria Mundi was not largely represented, only four dishes being contributed, Messrs. Threadgold, Powell, and Bunyard & Co. securing the prizes. Peasgood's Nonesuch, though included in so many collections, was only entered in its special class by seven growers, but these were all of great merit, both large and of fine colour. Mr. W. Edwards, Kinghill, Withington, Hereford, was first with wonderful specimens; Mr. Turton second for smaller but more highly coloured fruits; and Mr. W. Bannister, Westbury-on-Trym, third. Of the half-dozen dishes of Lane's Prince Albert, those from Messrs. Ross, Bunyard, and Bailey were much the best, even, fresh, and pretty fruits.

PEARS.—Some handsome specimens of the principal Pears in cultivation were contributed in the various classes, the Kentish samples coming out remarkably well in most instances. The fine collections of fifty varieties constituted a grand display, but those from Mr. Butler were far ahead of the others in size, form, and colour, the majority of the other collections being greatly deficient in the last named quality. The leading varieties were Pitmaston Duchess, Doyenné Boussoch, Beurré Van Geert, Beurré Clairgeau, Doyenné du Comice, Catillac, Uvedale's St. Germain, Fertility, Beurré d'Amans, Louise Bonne of Jersey, Beurré Diel, Beurré Hardy, and Vicar of Winkfield. Mr. C. Davies, Mote Park Gardens, Maidstone, was placed second, showing Doyenné Boussoch, Beurré Hardy, Durondeau, General Toddleben, Pitmaston Duchess, Triomphe de Vienne, Souvenir du Congrès, and Grosse Calebasse. Messrs. G. Bunyard & Co. were third, their finest examples being Beurré Capiaumont, Souvenir du Congrès, Princess, Beurré Diel, Beurré Clairgeau, Doyenné Boussoch, Durondeau, and Colmar d'Été.

The class for twelve dessert Pears was a very large one, and the fourteen collections occupied considerable space. Mr. Butler was again first with handsome fruits of Pitmaston Duchess, Doyenné du Comice, Beurré Hardy, Beurré Diel, Madame Trevey, Louise Bonne of Jersey, Duchesse d'Angoulême, Maréchal de Cour, Beurré Superfin, General Toddleben, Doyenné Boussoch, and Durondeau. Lord Suffield, Gunton Park, Norwich (gardener, Mr. W. Allan), secured the second award with greener but good fruits, Pitmaston Duchess, Beurré Diel, Durondeau, and Fondante d'Antoine being his leading varieties. H. A. Brassey, Esq., Preston Hall, Aylesford (gardener, Mr. A. Waterman) being third. Mr. G. Ware, Tunbridge Wells, had the best six dessert Pears, good representative fruits of Pitmaston Duchess, Doyenné du Comice, Beurré Rachelier, Duchesse d'Angoulême, Gansel's

Bergamot, and Beurré d'Anjou. Mr. A. Smith and Lady Fletcher, Kenward Yalding, Maidstone, were second and third amongst eighteen exhibitors.

The first of the classes devoted to single varieties was that for Doyenné du Comice, of which a dozen good dishes were entered, the prizes going to Messrs. G. Ware, Threadgold, and C. Ross. There was the same number of Beurré Superfin, Messrs. Powell, W. Jones, and Turton, these securing the honours. Seven dishes of Maréchal de Cour were shown, Messrs. R. Silk, R. Allen, Hungerford, and Hoare, being placed in the order named with large samples. Marie Louise was strongly exhibited, twenty-four dishes being staged, all very even in quality. Mr. R. Smith was first, his fruits being of a fine colour; Messrs. Powell and Hunter, Lambton Gardens, following. There were only six of Glou Morceau, Messrs. R. Smith, C. Ross, and W. Allen winning the honours with green fruits. In the Beurré Rance class there were twelve entries, Mr. R. Smith leading with fine samples, followed by Messrs. Threadgold and Bannister. Beurré Diel was also well represented by seventeen competitors, most of whom had fine examples, Messrs. Butler, W. Allan, and Hunter being adjudged the awards. Of the fifteen dishes of Pitmaston Duchess Mr. Butler's grand fruits were much the best, Mr. C. Howe, Benham Park Gardens, Newbury, and Mr. C. Ross following. Fondante d'Automne was staged by six exhibitors, Mr. R. Smith, C. B. Bingley, Esq., Stanhope Park, Greenford, and Mr. Turton winning the prizes in the order named with neat and well-ripened fruits. Seventeen dishes of Louise Bonne of Jersey represented this popular variety faithfully, Mr. Butler leading with large and well coloured fruits, Mr. Folks and Mr. Hargreaves being second and third.

VEGETABLES.

Special prizes for vegetables were offered by two seed firms, and an excellent display was afforded in response, the competition being very keen. Messrs. Sutton & Sons' prizes for a collection of nine kinds of vegetables brought ten competitors into the exhibition, and these were as clean and beautiful in all respects as we have seen this season. Mr. G. T. Miles, Wycombe Abbey Gardens, was first with a superb collection, including Vicar of Laleham Potatoes, Sutton's New Intermediate Carrots, Trophy Tomatoes, Leicester Red Celery, Veitch's Autumn Giant Cauliflowers, Finest Imported Brussels Sprouts, and very handsome Lyon Leeks. The other prizes were accorded to Mr. S. Haines; Mr. W. Meads, Beckett Park Gardens, Shrivenham; Mr. C. J. Waite, and Mr. William Pope, Highclere Gardens, Newbury. For three varieties of Onions Mr. S. Haines was first with Sutton's Silver Globe, Golden Globe, and Crimson Globe; followed by Messrs. G. Allen and R. Phillips. For twelve specimens of Sutton's Improved Reading Onion, Mr. G. Goldsmith, Floore Gardens, Weedon, won first honours with fine samples, Messrs. Miller and Bunnery being second and third.

Messrs. F. Carter and Co. offered prizes for their Tennis Ball Onion, which brought many competitors. Mr. R. Phillips Meopham, F. Miller, and W. A. Beard winning the prizes in that order. Eleven dishes of Carter's Champion Runner Beans were entered Messrs. Waite, Bolton, and Beckett taking the awards with capital samples. There were also five exhibitors of Carter's Mont Blanc Cauliflowers, Messrs. Waite and Marriott securing the chief prizes.

MISCELLANEOUS.

The non-competing exhibits were so numerous that they can only be very briefly noted. Messrs. Sutton & Sons, Reading, exhibited an extensive and interesting display of Tomatoes, all of open ground cultivation and ripened out of doors, indicating what can be done by careful management. The display occupied 50 feet in length, and was divided into three sections. I. Plants in their fruiting condition taken up from the Reading experimental grounds. II. Bunches or clusters showing the productiveness of the varieties. III. Heaps of separate fruit. The varieties which seemed to us to be best worthy of notice were the varieties introduced by Messrs. Sutton—viz., Earliest of All, Chiswick Red, Reading Perfection, Maincrop, and Abundance; while of others, Criterion, Acme, Excelsior, Victoria, and Green Gage seemed conspicuous for the excellent quality of the fruit and cropping properties. Altogether the collection was one of the best exhibits of Tomatoes ever seen at the Society's exhibitions, and a silver-gilt medal was awarded in recognition of its merits. Silver medals were awarded to the following:—Messrs. Wm. Paul & Son, Waltham Cross, for a fine collection of Roses and 112 dishes of Apples and Pears; Messrs. J. Cheal and Sons, Crawley, for extensive collections of Dahlias and Apples; Messrs. Paul and Son, Cheshunt, for collection of Dahlias, hardy flowers, Roses, and seventy-eight dishes of Apples; and Mr. Turner, Slough, for groups of Dahlias and Carnations. Bronze medals were awarded to Messrs. Rawlings Bros., Romford, for collection of Dahlias; and to Mr. G. Jacobs for a Pumpkin weighing 187 lbs. Messrs. J. Veitch & Sons, Chelsea, also had about 170 dishes of Apples and Pears; Messrs. C. Lee & Sons, Hammer-smith, sixty dishes; Mr. T. S. Ware, Tottenham, a large group of hardy flowers; Messrs. H. Lane & Son, Great Berkhamstead, had seventy-one dishes of Apples; Messrs. Keynes, Williams & Co., Salisbury, a beautiful collection of Dahlias; and Mr. Butler some fine Pears and samples of the St. Christopher Apple, a new dessert variety.

Orange Pippin Apple, a Grosse Mignonne Peach, a Pitmaston Orange Nectarine, a Brown Turkey Fig, a Moorpark Apricot, a Nottingham Medlar, a Pearson's Prolific Nut, Red Warrington Gooseberry, Prince of Wales Raspberry, Victoria Currant, and President Strawberry. Taking these prime favourites as a nucleus, we may add four or five sorts of well-proved excellence of each kind of fruit to make up a choice little selection. Of Plums, Coe's Golden Drop and Blue Imperatrice would with Green Gage form a useful trio for dessert; and for cooking Rivers' Early Prolific, Denyer's Victoria, and Belle de Septembre afford a successful supply. Of Cherries we would add Governor Wood, Transparent, Black Bigarreau, Belle Magnifique, and Morello. It may be well to explain that Belle Magnifique has with us long ago taken the place of both Kentish and Flemish for all culinary purposes, above all for making most delicious Cherry jam. With Pears it is difficult to confine our selection to half a dozen, but we take five more of the best for a succession of ripe fruit—Williams' Bon Chrétien, Fondante d'Automne, Doyenné du Comice, Knight's Monarch, and Glou Morceau. Of Apples we may add Margil and Sturmer Pippin for the dessert, and for cooking Keswick Codlin, Warner's King, and Tower of Glamis. To complete our half dozen of Peaches add Alexander, Dr. Hogg, Noblesse, Barrington, and Walburton Admirable; and of Nectarines Lord Napier, Stanwick Elruge, Rivers' White, Balgown, and Pine Apple. It is only in southern counties that we would plant other Figs beside Brown Turkey, but where it will answer Brunswick well repays our care with magnificent fruit of most delicious flavour. White Marseilles yields abundant crops of rich-flavoured fruit if grown against a south wall, and if a snug sheltered sunny corner facing the south-west can be found for Grizzly Bourjassotte we may safely reckon upon an annual treat of its delicious fruit of about the same size as a Brown Turkey, which is accurately described in the "Fruit Manual"—"Skin of a chocolate colour, covered with a very thin bloom, neck very short, eye open, flesh of a deep dark blood-red colour, with a thick syrupy juice and very richly flavoured. A delicious Fig." We may add that the fruit of Brunswick attains perfection when the skin cracks and we obtain a glimpse of the luscious interior, but the fruit of Grizzly Bourjassotte does not crack, it shrivels, and when this begins the fruit is at its best. We may add Kaisha and Orange Apricots to our selection, and a few choice Gooseberries selected of excellence of flavour—Early Sulphur, Pitmaston Green Gage, Keens' Seedling, Red Champagne, and Ironmonger. For general utility there is none like Red Warrington. The fruit is above medium size, it comes early into use for cooking as green fruit, hangs late upon the bush when ripe, and is of delicious flavour. As mention was made of President Strawberry, we may add to it now Marguerite, Sir Joseph Paxton, James Veitch, Dr. Hogg, and Loxford Hall Seedling. We have found the few sorts of each kind of fruit mentioned to combine in a high degree sure and abundant crops with excellence of size, flavour, and appearance.

SELECT SORTS OF FRUIT FOR A LARGE GARDEN.—Pears.—Summer Doyenné, Citron des Carmes, Jargonelle, Williams' Bon Chrétien, Colmar d'Été, Desiré Cornelia, Souvenir du Congrès, Beurré de l'Assomption, Fondante d'Automne, Duchesse d'Orléans, Comte de Lamy, Madame Treyve, Louise Bonne of Jersey, Marie Louise, Fondante de Charneau, Marie Louise d'Uccle, Doyenné du Comice, Knight's Monarch, Seckle, Urbaniste, Maréchal de Cour, Beurré d'Anjou, General Todtleben, Lucy Grieve, Dana's Hovey, Comte de Flandre, Thompson's, Forelle, Josephine de Malines, Jewess, Zephirin Grégoire, Besi Vaet, Winter Nelis, Beurré Superfin, Huyshe's Victoria, Huyshe's Prince of Wales, Millot de Nancy, Nouvelle Fulvie, Glou Morceau, Easter Beurré, Olivier de Serres, Madame Millet.

Dessert Apples.—Margaret, Joaneting, Mr. Gladstone, Kerry Pippin, Worcester Pearmain, Yellow Ingestrie, King of the Pippins, Margil, Hubbard's Pearmain, Pine Golden Pippin, Cox's Orange Pippin, Pine Apple Russet, Golden Russet, Melon Apple, Cockle's Pippin, Peasgood's Nonesuch, Court Pendu Plat, Reinette Van Mons, Cornish Gilliflower, Lord Burghley, Sturmer Pippin.

Kitchen Apples.—Duchess of Oldenburgh, Keswick Codlin, Lord Suffield, Manks Codlin, Warner's King, Wormsley Pippin, Cellini, Nelson's Codlin, Prince Albert, Lord Derby, Stirling Castle, Ecklinville Seedling, Small's Admirable, Golden Noble, Gloria Mundi, Cox's Pomona, New Hawthornden, Tower of Glamis, Mère de Méoage, Cobham, Northern Greening, Striped Beefing, Dumelow's Seedling, Hanwell Souring.

Dessert Plums.—Green Gage, Purple Gage, McLaughlin's Gage, Transparent Gage, Reine Claude de Bavay, Washington, Bryanston Gage, Denniston's Superb, Jefferson, Coe's Golden Drop, Kirk's, Blue Imperatrice.

Cooking Plums.—Rivers' Early Prolific, Early Orleans, Czar, Victoria, Prince of Wales, Lafayette, Prince Englebert, Diamond, Autumn Compôte, Belle de Septembre, Cluster Damson.

Cherries.—Early Purple Gean, Early Rivers, Belle d'Orléans, Empress Eugénie, May Duke, Black Tartarian, Governor Wood, Archduke, Reine Hortense, Transparent, Bohémien, Black Bigarreau, Bigarreau, Belle Magnifique, Elton, Late Duke, Morello.

Peaches.—Alexander, Early Beatrice, Early Albert, Rivers' Early York, Dr. Hogg, Grosse Mignonne, Royal George, Noblesse, Belle Baucé, Barrington, Walburton Admirable.

Nectarines.—Advance, Lord Napier, Stanwick Elruge, Downton, Violette Hâtive, Balgown, Humboldt, Rivers' White, Pitmaston Orange, Pine Apple.

FRUIT FORCING.

PINES.—*Plants Showing Fruit.*—These will be valuable when fruit is scarce and dear, therefore such plants should be afforded the best



HARDY FRUIT GARDEN.

AGAIN has the time come round to us for making a selection of good varieties of fruit for gardens large and small. Before giving full lists for general guidance it may be well to consider the wants of those of our readers requiring only a few of the best. Every garden should contain a Green Gage Plum, a May Duke Cherry, a Marie Louise Pear, a Cox's

position in the fruiting department. Maintain a temperature of 70° at night, 75° artificially by day, up to 85° to 90° with sun, closing at 85°, sprinkling the pathways when their surfaces have become dry, occasionally sprinkling the plants on fine afternoons. Keep the bottom heat steady at 85° to 90°. Examine the plants once a week for watering, and if any require it afford a copious supply of clear liquid at about the same temperature as the beds. Care must be taken not to over-water the fruiters, as that has a tendency to cause the fruit, when cut, to be black at the centre.

Plants to Fruit Early.—Queens are the best for this purpose, but there is not always a certainty of their doing so unless they are given a period of comparative rest after making good growth. Plants intended to show fruit early in the year should be kept in a temperature about 65° in the daytime by artificial means, 60° at night, ventilating at 70°, closing at 70°, allowing the bottom heat to fall to 70°. Water the plants only when necessary, but do not let them become so dry as to cause limpness of the foliage.

Young Plants.—All young plants should now be arranged so as to obtain the fullest benefit of light and air. As the sun heat diminishes, a corresponding diminution of temperature must take place at night until it reaches the winter standard of 55° to 60° at night, and 65° in the daytime. Ventilate freely whenever conditions are favourable, paying particular attention to watering. Make an inspection of the plants about once a week, and whenever a plant needs water give it copiously at about the same temperature as the bed.

PEACHES AND NECTARINES.—Earliest House.—Prune the trees at rest, and put the house in order for a fresh start. The wood having been grown thinly, and care taken to equalise the growth, there will be little need of the knife. Any weak wood may be cut out, and any leading growths shortened, so as to originate the requisite growths for furnishing the trees. Where too crowded they may be thinned. Unloose the trees from the trellis, cleanse the house thoroughly, and dress the trees with an insecticide before again securing them to the trellis. There should not be any attempt at tight tying, but plenty of space must be left for the swelling of the branches. Remove the surface soil down to the roots, and supply fresh turfy loam, adding a tenth of lime rubbish, a fifteenth part of half-inch bones, and a similar proportion of wood ashes, making firm and following with a good watering. The outside border also should be surface dressed in a similar manner, and if in a thoroughly moist state, protect with a covering of litter or bracken, as cold rains and snow reduce the temperature of the soil considerably, but allow the soil to be thoroughly moistened before covering. The lights, if removed, may remain off until bad weather sets in.

Second Early House.—The trees will have most of the foliage down. It may be assisted by lightly brushing them with a broom. It is best to prune, dress the trees, and top-dress as soon as all the leaves have fallen, and destroy all insects before they have time to find secure winter quarters. In properly managed trees there will be little wood to cut out. It will be confined to removing any useless parts having escaped the knife at thinning after the fruit is gathered, and these should now be removed. Any shoots considered too long may be cut back to a wood or triple bud, making sure that the centre one is a wood bud, which is not always the case, and to leave sufficient wood with fruit buds for insuring a crop. Shoots of 8 to 12 inches length must not be shortened, nor need those that are very much longer, as all shoots have a few wood buds at the base and one at the extremity, and others amid the fruit buds, especially in the case of strong shoots, but the intermediate buds on short shoots are generally fruiting ones only. It is a great mistake, however, to retain much wood, which weakens the trees in flowering, and there is not space for training-in the necessary growths for future bearing to insure their thorough exposure to light and air. Allow plenty of air at all times, but the lights being off, do not replace them until severe weather comes, but allow the borders to become well moistened by the autumn rains. If the lights are fixed, avoid permitting the borders to become too dry, which is more pernicious than a wet soil at any time.

Midseason Houses.—The foliage in these will be approaching maturity. The lights should be kept open day and night, and, the wood ripe, the roof lights may be removed. There is no rain like that of the clouds for ensuring an even and thorough moistening of the soil. Any lifting or root-pruning should be attended to so soon as the wood becomes firm and the buds are developed, and before the leaves have fallen, so that fresh roots may be formed—a process that is more certain when the trees have foliage than when it is deferred until the trees are leafless.

Late Houses.—Late Peaches are as valuable as early ones, and we have now some excellent varieties. We have in Alexander and Waterloo varieties that ripen in April with no more forcing than is necessary to have Royal George ripe in June, and there are others, as Early Beatrice, Early Alfred, Hale's Early, Dr. Hogg, and Condor, that precede our old forcing varieties by weeks in the same temperature. In late varieties those of the greatest value are found. They have size and appearance, and under glass they ripen in the worst seasons. Barrington and Late Admirable were our best late Peaches, the Salwey seldom ripening, and under glass was very mealy. Now we have, thanks to the late Mr. Thos. Rivers, very fine sorts. They are sometimes dry and mealy—that arises from the trees not having due supplies of water and nutriment when the fruit is swelling, also when the fruit is taking its last swelling for ripening. The fruit is large and requires good support. Princess of Wales is beautiful; Lady Palmerston is very handsome; Sea Eagle large and good; Golden Eagle, and gold it is (of the Australian tint), Gladstone very large and good; and Comet, yellow or golden with a crimson cheek. All are first-rate. By ventilating freely through the summer, in

fact taking off the lights in "broiling" weather, they can be had as late as when grown outside, and the fruit can be insured ripening, which is more than can always be effected outside. Keep the wood thin and get it ripe. The useless wood should be cut out so soon as the fruit is gathered, and trees growing too luxuriantly and late should have a trench taken out at such distance from the stem as will check their vigour and cause the buds to become plump.

CUCUMBERS.—Autumn Fruiters.—Examine these regularly, not less frequently than once a week, removing any had leaves and exhausted growths, training in young growths, pinching out the points of the shoots a joint or two beyond the fruit, avoiding overcrowding and overcropping, and remove all male blossoms, as well as a super-abundant show of fruit. Keep a night temperature of 70°, 75° by day, advancing to 80° to 85° with sun heat, closing early so as to rise 5° to 10°, advantage being taken of favourable opportunities to admit a little air, yet avoid drying currents and cold air. The evaporation troughs may be charged with liquid manure, or the floors occasionally damped with it. The floors should be sprinkled with water at about 8 A.M. and 4 P.M. respectively, dispensing with the syringe over the plants. Reduce the supply of water at the roots, but not to cause flagging. Plant out at once on ridges or hillocks the plants for fruiting in winter and train with one stem to the trellis, taking out the point of the lead at the second or third wire of the trellis. Good supplies of fruit may be had by growing plants in pots or boxes in a house sufficiently heated, as that of a Pine stove.

PLANT HOUSES.

Deutzias.—When necessary to increase the stock of these for another year's forcing, strong plants may be lifted from outside borders and potted at once. Many lift these plants and force them the same season, but this is a mistake, for they should be established in their pots for one year before forcing them into bloom. If placed at once in 6 to 8-inch pots, according to their size, they will become partially established before the foliage falls, and will make splendid plants for another year. They can stand outside until the approach of severe frost, when they should be pruned and the pots plunged in a cold frame. If allowed to start into growth and are encouraged in cold frames until June they will be ripened early, and in a fit state for forcing into bloom early in the season. It is a good plan to lift a few plants annually from the outside for potting, and then the stock of these plants can be kept in admirable condition. Plants that have been weakened by forcing may now be turned out of their pots and have their roots reduced by one-half and repotted in fresh soil. These if given cold frame treatment will thoroughly recruit themselves in a season, and be in the best condition for forcing. A portion of our stock is subjected to this treatment annually, and by this simple method the whole of the plants are kept in good condition. Plants that die or do not start freely into growth are replaced by new stock from the borders. The plants for this purpose are raised by striking cuttings in heat in spring, placing them singly in boxes 2 inches apart, and afterwards planting them out. Deutzias do well in good friary loam, one-seventh of manure, and a little sand.

Viburnum Opulus (Guelder Rose).—To have these in good condition for forcing in pots they should be established in them for one year. Plants that were cuttings two years ago may be lifted for this purpose, and will require 6 or 7-inch pots. These plants should be potted in the compost advised for Deutzias and then plunged outside, covering the surface of the soil and rim of the pots. They should be plunged where they can grow next year—that is, in a sunny open position. They will give no further trouble during the winter, and in spring should be pruned back closely. This will induce the formation of clean growths, which will be about 18 inches in length by the end of the year. No trouble will be given in watering during the summer if the pots are plunged nearly one inch below the surface.

Roses.—A good number of Hybrid Perpetuals, and the old common Moss should be lifted and potted at once where it is necessary to increase the stock of these plants. If strong plants are lifted, or the ordinary trade size relied upon, they should be placed in 7 or 8-inch pots in a compost of friary loam of a moderately heavy nature, one-seventh of decayed manure, and one 6-inch potful of half-inch bones, and the same quantity of soot to each harrowful of soil. If lifted while the foliage is upon them they will make a good quantity of roots before winter, and the result next season will be strong growth and large blooms. The plants should be plunged outside, covering the rim of the pots with ashes until severe weather sets in, when the protection of a cold frame should be given them. If plunged they will need no water, but it may be necessary to syringe them occasionally if dry weather and dry winds prevail.

Laurustinus.—Any plants of the common English variety that have set their flower buds may be lifted and placed into pots at once, varying in size according to the size of the plants. Those that have not set their buds are often destroyed by frost in the northern parts of the country, and if these can be given protection for the winter, and planted out again in spring, all the better. If the stock of these plants are deficient buy in at once some small bushy plants, and pot them and place at the approach of severe frost in a cold frame. In spring they should be plunged outside, covering the pots with soil, and the majority will set plenty of flower buds. The Belgian variety has been largely used for forcing during late years, but it very frequently fails to set buds unless the plants are prepared under glass. Such accommodation cannot be afforded them, and therefore the old form alluded to above, which opens white when subjected to forcing, must be relied upon unless the stock required is purchased annually.

THE BEE-KEEPER.

MODIFIED INCREASE.

IN a previous article I have pointed out what has appeared to me to be the surest method of obtaining super honey in the most suitable form; but as it is quite possible that some may regard the absolute prevention of swarming as not altogether desirable, either because they desire an increase in the number of their stocks or because they fear their ability through press of work to give proper attention to the wants of the apiary at the time when the greatest care is required, it may be useful to give an alternative plan, or rather a modification of the non-swarming system, which, if not giving such sure and great results as the non-swarming one, must at least take the next place in order of merit, and as such was recognised by the late Alexander Pettigrew even in preference to the prevention-of-swarming system of management to which he was always opposed. To those who require a moderate increase it offers great facilities for getting swarms early in the season, and a fair amount of super honey, the more especially if there is Heather in the vicinity, when it quite possibly may be a superior system to the one absolutely suppressing swarms. As in every other method so in this, strong stocks early in the season are an absolute necessity, and if these cannot be had failure will result. A strong stock ought to be ready in the first week in May to take a super, and a small one may be given, and when this is completed it may be removed and an artificial swarm taken from the stock, all casts or after swarms being prevented, and the stock itself supered, and the swarm also as soon as it has filled or nearly so its hive with comb. This was Mr. Pettigrew's plan if I remember it rightly, and the one I prefer to follow is very slightly different; for instead of placing a super as soon as the stock is ready, I would take an artificial swarm when the stock was strong enough to yield one, thus sacrificing the first small super, or the possibility of one, for the sake of getting the stock and swarm strong enough to take advantage of all the honey flow which occurs in the early days of June from the Sycamore and Clover. If June and July are fine two lots of bees, the old stock and swarm, both working in supers, will gather a great weight of honey, in some seasons in excess of the amount that can be taken from a stock not allowed to swarm at all; but if part of those months are wet the latter will have the advantage, and as years are very rare when the whole season is fine, therefore the plan which makes it almost a certainty to be able to take immediate advantage of fine honey weather is the one likely to be most useful in a climate so uncertain as that of Great Britain.

Another feature of this moderate increase plan is that in the autumn there will be a strong swarm of bees to add to each stock which it is intended to keep for another season; and if these bees are, as in the prevention-of-increase plan, not available, and have to be purchased, a deduction to the extent of the cost of the bees added must be made from the profit gained from a stock not giving a swarm to obviate the necessity for purchasing. Young queens are also hatched under the swarming impulse, and are under such conditions very valuable indeed, and far preferable to those born and bred in a nucleus hive. The pity is that so many valuable queens are wasted when hundreds of bee-keepers would be thankful to purchase them at a reasonable price, instead of being put to the trouble and loss of profit occasioned by being compelled either to purchase them from a dealer or use the best stock in the apiary for a queen nursery.

I have endeavoured to state the case fairly, so that bee-keepers may judge for themselves which plan has the greatest advantages when applied to the circumstances of individual cases. My preference is for the absolute prevention of increase; it suits me best, and year by year gives the largest profit. In a bad season some honey in supers may be had when stocks allowed to swarm give none, while in a good

season a stock prevented from giving increase will give surprising results in super honey. There is only one circumstance that might make a change in my management, and upon this point I refrain from attempting to advise because I have no practical experience, and this is most essential in anyone who desires to show others the way to be enabled to say that he has himself traversed it and found it safe. This circumstance is that as there is no Heather in the neighbourhood of my stocks, and I have no time or opportunity to transport them to the moors, the honey season is a short one, and often ends by the middle of July, and sometimes even earlier, though occasionally lasting until the end of the month. Thus even early swarms are no sooner, in many seasons, at work in supers than the honey flow is ended. Of one thing I am convinced by the experience of those who have been at the expense and trouble to remove stocks to the moors, and that is the absolute necessity of having them very strong in numbers. Three seasons out of four the value of the honey gained does not pay the expenses of transport, the apparent reason being that the stocks are not sufficiently strong in numbers to withstand the constant and terrific loss of bee life constantly going on owing to wind and rain and other causes. The day may come when bee-keepers will recognise that it is better to have one really strong stock than half a dozen weak ones. It is unnecessary to add, except for guarding against any mistake, that no cast or second swarm must be taken from any stock managed upon the modified increase system. If such a cast were allowed to issue the old stock would very possibly not work at all in supers that season, so greatly would it be depopulated by thus giving an increase greater than it was well able to sustain without detriment; while the cast itself would not, unless in exceptional seasons, yield any super honey, and this is what we are endeavouring to obtain, and may reasonably expect to succeed in obtaining if we give sufficient care and exercise a wise judgment in all matters connected with our management.—FELIX.

VARIETIES OF BEES AND THEIR MANAGEMENT.

As promised, I will now give the results of different hives of bees at the Heather and within a quarter of a mile of each other. It will be understood that while there is much goodwill and kindly feeling amongst bee-keepers, there is also much rivalry as to who will have the best and heaviest hives. Some bee-keepers, to achieve that, work their hives in a scientific manner, and spare no pains to accomplish success. The lines they pursue I have frequently stated in these columns, so need not repeat them at the present beyond stating that roomy hives, teeming with bees and brood, are essential. Other bee-keepers, quite as desirous of success as their more successful neighbours, do not use the means to have their hives in proper order, but appear rather to place all confidence in first swarms only, believing that no management will secure better results than to allow Nature to work its way. It is well known that I advocate strong hives having young queens at their head, yet only a week or two since a number of bee-keepers visiting me were surprised to hear me say that having young queens is the key to successful bee-keeping. They had always been taught that young queens were, comparatively speaking, useless the first year, and they had read in the "British Bee Journal" that when an increase of honey gathering was desired the breeding queen should be removed. But they were still more surprised when I gave them ocular demonstration of three hives—one a non-swarmed one, the other a stock and first swarm of Cyprian blood that since their introduction, nine years ago, had received no artificial feeding. The weight of the contents of these swarms (minus the wooden hives) was nearly 400 lbs. Had the season been a good one I doubt not but they would have weighed as much more.

When bees or hives have to be made they should be tested side by side, and the management on the same terms. Your readers will remember that in a previous article a stone dyke was all that separated my hives from another lot placed there one day before mine—an advantage, as the day was a fine one. Neither of our hives was so near the Heather by a quarter of a mile as others, but I am unprepared to say whether that distance nearer is any advantage. Many bee-keepers know that the weather during the time the Heather was in bloom was very unpropitious. I may state that the hives standing side by side, or on both sides of the dyke, were very much the same—stocks, swarms, and two or three unswarmed ones in each, the difference being form of hive and management. Those of my neigh-

bours looked due south, while mine looked due north. The highest make of the former was 10 lbs., while some of them had risen nothing. The lowest make of my ones was 25 lbs., and the highest at the end of seven weeks 50 lbs., the latter were the crossed Cyprians. One late first swarm of Syrians at the end of seven weeks weighed 40 lbs.; being in a Stewarton hive it filled two supers with comb, the nett contents of which is 16 lbs., the rest having been stored in the body of the hive required for its sustenance during winter. I leave your readers to solve the reason of the great difference of weight made by the respective hives. One thing, however, those who maintain that the hive which suits one district will not suit that of another have much to learn. There is another erroneous impression—namely, that bees build drone comb as store ones. If that was the case the moment a glut of honey came, drone would be built to the ultimate detriment of the internal economy of the hive; but that not being the case, and drone combs being built only in queenless hives, or where an aged queen or a young defective one is reigning, or after some obstruction takes place, so that the queen cannot continue egg-laying; then only are drone combs built in supers or other vacant places accessible to the bees. We may safely set down that the theory of store combs is another of the many errors in bee husbandry.

If there was the slightest truth in the store-comb theory, why is it that in all my supers filled by bees having a young prolific queen at their head have nothing but worker comb? That bees have a desire to widen their store combs either in one continuous cell often to a great width, or to first seal, then build upon and extend upon the sealed we all know, but that bees the moment they find abundance of honey start drone comb is an error worth refuting.

Not a single mishap occurred to any of our hives neither on the outward nor return journey, which I attribute wholly to our method of conveying and ventilating them. Only a mile distant from where mine stand are some with not a sound hive amongst them, all of them heated, and I doubt not but by this time foul brood will be prevalent, which will be mischievous alike to the proprietor and his neighbours' bees. Midway between that and my own stand about thirty hives all straw, with ekes *à la* Pettigrew except one. All of these have been well cared for and as well managed, yet making from 7 to 10 lbs. less than my own. This I attribute to the fact that my hives were a little stronger, and imbued with the Cyprian and Syrian blood; but I think had my hives been so situated they would have been much heavier. Others equidistant in another direction have much the same results; but strange to say in the midst of the Heather stands some from Carluke, Mr. Pettigrew's birthplace, where we should have expected to see the Pettigrew system carried out to the letter, as in the case of those already mentioned coming from an opposite quarter; but not so, the hives are small, and so far as I can learn the making is nil.

The foregoing is a true account of the state and making of the different hives under as fair a trial as if it had been made under the supervision of the most experienced bee-keepers. But more good will accrue from it, as the parties concerned have had ocular demonstration of the superiority both of breeds of bees and different hives, and as experience is gained will be convinced that the hive that is good for one district will be good for every district, as has been the experience of—A LANARKSHIRE BEE-KEEPER.



TO CORRESPONDENTS

* * All correspondence should be directed either to "THE EDITOR" or to "THE PUBLISHER." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

NAMING FRUITS.—In consequence of the absence of our fruit referee from London fruits cannot be named by him during the month of October.

Tuberous Begonia (*H. G.*).—The flower is not nearly so large as many we have seen, though it is of good shape and colour.

Pear Culture (*Pear*).—There is no work published on the culture of

special varieties of Pears, and those you name require exactly the same cultural treatment as others. Given the same climate and aspect, the most healthy trees produce the finest fruit, provided they are not over-cropped, whether they are trained on the cordon, fan, or any other system, or grown as pyramids or bushes in the open.

Beetle Trap (*D. R.*).—Your letter will be sent to the manufacturer's. It is no part of our duty to advertise the articles of vendors; we do our share by pointing out things that may be of service to our readers.

National Chrysanthemum Society's Catalogue (*J. F.*).—Write to the Hon. Sec., Mr. W. Holmes, Frampton Park Nurseries, Hackney.

Root-pruning Fruit Trees (*H. Piggot*).—We are not able to answer your question as to Mr. Beattie. Possibly the Editor of the work in question may be able to do so if you write him on the subject. Mr. Moore's address is Botanic Gardens, Chelsea.

Wireworms in Vine Borders (*A. B. C.*).—These are injurious and cannot be destroyed by any applications to the soil. They may be caught by burying Potatoes, Carrots, and squares of fresh turves in the border, marking their positions with sticks and withdrawing the "baits" from time to time for extracting the pests. Woodlice may be caught by placing dry rough partially decayed dirty old boards face to face so that they can find their way between them, to be disposed of as you may think fit. The young Vine canes if strong and well ripened may bear two or three bunches each next year.

Erica Lambertiana rosea (*W. W. R.*).—The Heath to which you refer is a good one for winter flowering, and it is useful for cutting. It is of com-



Fig. 53.—*Erica Lambertiana rosea*.

compact habit when well grown and makes a pretty specimen in a pot. You will be able to form some idea from the cut, fig. 53, the flowers being white, suffused with bright rose.

Auriculas (*N. B.*).—You can have no better list of Auriculas than that published on pages 5, 6, of vol. 2, the issue of July 2nd 1885, for varieties are there arranged in order of merit as determined by the number of votes each received by the florists who made the selections. Mr. Horner and most other leading florists took part in that election. The results of the election of Alpines appear on page 18 of the same volume. A lecture on the Auricula by Mr. Horner also appears on pages 381, 398, 418 of the volume in question.

Cobaea scandens.—**Violet Ivy** (*A. B.*).—In Mexico where this plant was first discovered it bears the name of Yedra morada, or Violet Ivy, but it is scarcely known in Britain under any other name than Cobaea. The first European plants were raised from seeds in the Madrid Botanic Garden, and it was named in honour of the Jesuit, Father Cobo, who resided in America for forty years and wrote a "Natural History of the New World," but which, we believe, was never published.

Petroleum Mixture (*F. J.*).—The method of preparing petroleum so that it mixes with or remains suspended in water you will find on page 216 of the present volume, the issue of September 2nd, 1886. It is good for applying to the stems of fruit trees and Vines after pruning, but for that purpose twice the quantity of softsoap and petroleum may be used, rubbing the mixture well into every crevice with a brush. We scarcely know what you mean by your second question. Wood buds elongate and develop leaves. Sometimes more than two leaves issue from wood at the base of fruit buds, and sometimes not one.

Fruit Trees for Wall (*J. O.*).—The wall—i.e., between the piers, would answer for either Pears or Plums, and for so high a wall we should have the Plums fan-trained. Pears would be most suitable for the piers, having the branches trained upright. If you leave Pears between the piers they may be horizontally trained; but the space would be more quickly covered by planting cordons about 20 inches apart, on Pear stocks or double grafted. It is matter of taste as to which is selected. We name a dozen of each.

Pears:—Jargonelle, Beurré d'Amanlis, Beurré Superfin, Louise Bonne of Jersey, Marie Louise, Maréchal de Cour, Pitmaston Duchess, Doyenné du Comice, Durondeau, General Todleben, Beurré Bachelier, Marie Benoist. **Plums:**—Dessert: Belgian Purple, Coe's Golden Drop, Green Gage or Transparent Gage, Jefferson, Kirke's, and Early Favorite. Kitchen: Early Rivers or Prolific, Czar, Prince Englehart, Pond's Seedling, Victoria, and Yellow Magnum Bonum.

Grapes Withering (J. F.).—What you describe is a rather common occurrence this season, and points to the Vines being checked or retarded in the early stages of growth through inclement weather, or the Vines may not have been supplied with proper nutriment during the swelling and ripening period. We presume, however, your Vines are in good condition, and there is nothing constitutionally to account for the withering. It is on such that shrivelled berries often appear, and is on that account the more disappointing. The fact is the Grapes are not ripe—there has not been sufficient continuance of the requisite heat and light for the conversion of the juices into the saccharine matter which constitutes their keeping qualities, and is more prevalent with Grapes of high quality, such as the Muscats; others, such as Gros Colman and Gros Guillaume, being less liable to shrivel even when unripe. The only remedy is to allow no check to occur during the growing or ripening process, either from lack of moisture or a fluctuating temperature, which has a tendency to hasten the maturity of the foliage and causes premature rest in the Vines.

Preventing Vines Scorching—Grapes Shrivelling (Merchant).—We do not wonder at the Vine leaves scorching, as the foliage must be very thin from the house being kept so close. The house should be more freely ventilated in the early stages of the Vines developing the foliage, and until the leaves have assumed a thick leathery texture, and by attending to this and ventilating early and not closing too soon, the foliage would be able to bear the sun's rays without scorching or the necessity of shading. The ventilation will of course lower the temperature if it is not judiciously given, but upon sound principles it ought not to do so, but should be applied as a means of preventing the temperature rising too high. Not knowing the temperature at which the Vines have been kept, we are not able to say whether less might not be safe, but if you follow the temperatures as given in the "Work for the Week," under the heading of Vines, you will not be acting wrong, and if you ask our advice at the time of starting the house we shall be happy to give you every information in our power. There ought to be sufficient piping in the house to prevent the necessity of very hard firing at any time, very highly heated surfaces invariably inviting attacks of red spider, besides involving the use of much more fuel than would be requisite with the pipe-heating surface considerably increased. The cause of the Grapes shrivelling is not through want of thinning, but from want of needful supplies of nutriment during swelling and want of proper ripening. See answer to "J. F.," which is equally applicable to your case.

Gardenia Buds Falling (C. B. B.).—The cause of the buds falling is probably too high a temperature, especially at night, and not allowing the plants rest. The moisture, too, is perhaps excessive, so that the plants push growth instead of maturing the wood and developing the flowers. A temperature of 60° to 65° is sufficient at night, and 70° to 75° in the day-time by artificial means, and in this the plants ought to develop the buds perfectly, they being duly supplied with water at the roots. They ought never to be allowed to become dry, but water should not be given until they require it, then a thorough supply. We should say the plants are not in a satisfactory condition at the roots, though the healthy appearance of the foliage would point to their being all right in that respect. We have known a whole crop of buds lost by allowing the plants to become dry at the roots, which, giving a check, caused them to fall; and a sudden change of the temperature, if only for a short time, proves very disastrous. Indeed, there are many causes of the buds falling, but it is mostly attributable to undue excitement or a sudden check, whether from a high to a low temperature, from a moist close atmosphere to a dry and airy one, or from a wet state of the soil to a dry condition. With the roots in a healthy state and the temperature as above indicated we have not experienced any loss of buds.

Grub Infesting Grapes (An Amateur).—Your Vines are attacked by a very destructive Tortrix, with which we are well acquainted—namely, *T. angustiorana*. It is figured in Barron's "Vine Culture," an excellent work that all Grape-growing amateurs should possess. We cite from the work in question the reference to and description of this Vine pest. "This moth seems to have existed in America for some few years, but it is only lately that its appearance has been noticed in this country. The caterpillars are found gnawing the skin of ripe Grapes, eating a little of the pulp, and fastening them together by a web, thus destroying much fruit. They are about 1 inch in length, of a dirty greenish grey colour, with a dark line down the middle of the back. The head is pale buff, very glossy, and nearly square, the eyes black. We have captured several of the caterpillars of this moth in the great vinery at Chiswick, where they were found preying on the ripe fruit. They appear to feed on one berry, which decays and rots the adjoining ones, so that four or five berries are often found to be destroyed; consequently, they prove to be very destructive. They may easily be found, and when disturbed, like all these insects, they drop suddenly from their quarters, suspended by a small web." There is no remedy beyond disturbing and destroying the larvæ, also every moth that emerges and is seen in the house.

Ferns in Vinery (Somerset).—Ferns may be well grown in a pit the top of which is 5 feet from the glass; in a vinery, because the temperature required by the Vines is equally suitable for many Ferns, while the shade from the roof in summer is conducive to the freshness of those plants. But the plan suggested of planting them out and digging them up and potting as required for room decoration is quite impracticable. No plants suffer from root-disturbance more than Ferns, and for continuing fresh in rooms it is essential that they be thoroughly established in pots. We should fill the pit with leaves as usual and grow the plants in pots, these being stood on or partially sunk in the leaves; but as slugs might be troublesome the pit might be filled with stones or rubble thickly surfaced with ashes or fine gravel, and this if kept moist in summer would be of benefit both to the plants and Vines. The Ferns could be grown in varying sizes to suit the decorative requirements of the rooms, while they might be so arranged

in the house as to have an agreeable appearance. An Aponogeton would grow in a tub of water in the vinery, fresh water being added from time to time. Three plants would suffice for your tub, but we suspect the space might be more usefully occupied with Ferns. This, however, is a question of taste. The spray pump is useful, and with fair usage we do not think it liable to get out of repair.

Names of Fruits.—The names and addresses of senders of fruit to be named must in all cases be enclosed with the specimens, whether letters referring to the fruit are sent by post or not. The names are not necessarily required for publication, initials sufficing for that. Only six specimens can be named at once, and surplus fruits beyond that number cannot be preserved (*A. Robinson*).—As has many times, and quite recently stated, Plums cannot be named without stalks attached to the fruit and specimens of the young wood of each variety sent for identification. (*J. W.*).—The Apple is Ecklinville Seedling, the Pear Williams' Bon Chrétien. (*T. J.*).—1, Winter Peach; 2, Not known, and not good; 3, Beurré Hardy; 4, Beurré Superfin; 5, Beurré Clairgeau (small). (*A. Constant Reader*).—1, Beurré Gris d'Hiver Nouveau; 2, Easter Beurré; 3, Doyenné d'Alençon; 4, General Todleben; 5, Beurré Sterckmans. The Apple is Pine Apple Russet. (*G. S., Kent*).—1, Beurré d'Amanlis; 2, Beurré Hardy; 3, Louise Bonne of Jersey; 4, Marie Louise; 5, Henri Capron; 6, Triomphe de Jodoigne. (*Somerset*).—The Pear is quite worthless, and cannot be named. Why not engraft the tree with a good variety.

Names of Plants.—We only undertake to name species of plants, not varieties that have originated from seed and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in firm boxes. Slightly damp moss or soft green leaves form the best packing, dry cotton wool the worst. Not more than six specimens can be named at once. (*H. C.*).—1, *Pteris cretica alho-lineata*; 2, *Blechnum Spicant*; 3, *Adiantum hispidulum*; 4, *Davallia Tyermanni*; 5, *Asplenium bulbiferum*; 6, *Onychium japonicum*. (*An Old Subscriber*).—*Nerine undulata*. (*G. W.*).—*Fuchsia corallina*. (*B. J.*).—*Oncidium Kramerii*.

COVENT GARDEN MARKET.—OCTOBER 13TH.

TRADE quiet, prices remaining the same. Good samples of Pines in fair demand.

FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples	½ sieve	1 6 to 4 0	Melon	each	1 0 to 2 0
Cherries	½ sieve	0 0 0 0	Oranges	100	6 0 12 0
Cobs	100 lb.	50 0 55 0	Peaches	per doz.	4 0 8 0
Currants, Black ..	½ sieve	0 0 0 0	Pears	dozen	1 0 1 6
" Red	½ sieve	0 0 0 0	Pine Apples English ..	lb.	2 0 2 6
Figs	dozen	0 6 0 9	Plums	½ sieve	1 0 2 0
Grapes	lb.	0 6 3 9	St. Michael Pines ..	each	4 0 6 0
Lemons	case	10 0 15 0	Strawberries	per lb.	0 0 0 0

VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Artichokes	dozen	1 0 to 0 0	Lettuce	dozen	1 0 to 1 6
Asparagus	bundle	0 0 0 0	Mushrooms	punnet	0 6 1 0
Beans, Kidney ..	per bushel	2 0 3 0	Mustard and Cress ..	punnet	0 2 0 0
Beet, Red	dozen	1 0 2 0	Onions	bunch	0 3 0 0
Broccoli	bundle	0 0 0 0	Parsley	dozen bunches	2 0 3 0
Brussels Sprouts ..	½ sieve	0 0 0 0	Parsnips	dozen	1 0 2 0
Cabbage	dozen	1 6 0 0	Potatoes	cwt.	4 0 5 0
Capicums	100	1 6 2 0	" Kidney	cwt.	4 0 5 0
Carrots	bunch	0 4 0 0	Rhubarb	bundle	0 2 0 6
Cauliflowers	dozen	3 0 4 0	Salsify	bundle	1 0 1 0
Celery	bundle	1 6 2 0	Scorzonera	bundle	1 6 0 0
Coleworts	doz. bunches	2 0 4 0	Seakale	per basket	0 0 0 0
Cucumbers	each	0 3 0 4	Shallots	lb.	0 3 0 6
Endive	dozen	1 0 2 0	Spinach	bushel	3 0 4 4
Herbs	bunch	0 2 0 0	Tomatoes	lb.	0 2 0 6
Leeks	bunch	0 3 0 4	Turnips	bunch	0 4 0 0

PLANTS IN POTS.

	s. d.	s. d.		s. d.	s. d.
Aralia Sieboldi ..	dozen	9 0 to 18 0	Ficus elastica ..	each	1 6 to 7 0
Arbor vitæ (golden)	dozen	6 0 9 0	Fuchsia	per dozen	2 6 6 0
" (common) ..	dozen	6 0 12 0	Foliage Plants, var.	each	2 0 10 0
Asters	per dozen	3 0 6 0	Heliotrope	per dozen	0 9 0 0
Bedding Plants, var.	doz.	0 0 0 0	Hydrangea	per dozen	0 0 0 0
Begonias	dozen	4 0 9 0	Ivy Geraniums ..	per dozen	0 0 0 0
Chrysanthemum ..	dozen	6 0 12 0	Lilium auratum ..	per doz.	12 0 30 0
Cockscombs	per dozen	8 0 4 0	" lancifolium ..	per doz.	0 0 0 0
Cyperus	dozen	4 0 12 0	" longiflorum ..	per doz.	0 0 0 0
Dracena terminalis,	dozen	30 0 60 0	Lobelia	per dozen	0 0 0 0
" viridis	dozen	12 0 24 0	Marguerite Daisy ..	dozen	6 0 9 0
Erica, various ..	dozen	9 0 12 0	Mignonette	per dozen	3 0 6 0
" hyemalis ..	per dozen	18 0 24 0	Musk	per dozen	0 0 0 0
" gracilis ..	per dozen	9 0 12 0	Myrtles	dozen	6 0 12 0
Euonymus, in var.	dozen	6 0 18 0	Palms, in var. ..	each	2 6 21 0
Evergreens, in var.	dozen	6 0 24 0	Pelargoniums, scarlet,	doz.	3 0 6 0
Ferns, in variety ..	dozen	4 0 18 0	Pelargoniums ..	per dozen	0 0 0 0

CUT FLOWERS.

		s. d.	s. d.			s. d.	s. d.
Abutilons	.. 12 bunches	2 0	to 4 0	Lily of the Valley, 12	sprays	0 0	to 0 0
Ageratum	.. 13 bunches	2 0	3 0	Marguerites	.. 12 bunches	2 0	6 0
Arm Lilies	.. 12 blooms	4 0	6 0	Mignonette	.. 12 bunches	1 0	3 0
Asters	.. 12 bunches	0 3	0 6	Myosotis	.. 12 bunches	1 6	3 0
Bouvardias	.. per bunch	0 6	1 0	Pelargoniums, per 12	trusses	0 9	1 0
Camellias	.. 12 blooms	4 0	8 0	" scarlet, 12	trusses	0 3	0 6
Carnations	.. 12 blooms	1 0	3 0	Roses	.. 12 bunches	2 0	9 0
"	.. 12 bunches	4 0	9 0	" (indoor), per	dozen	0 6	2 0
Chrysanthemums	12 bches.	3 0	6 0	" Tea..	.. dozen	0 9	1 0
"	12 blooms	1 0	0 6	" red	.. dozen	0 8	1 0
Coreopsis	.. 12 bunches	0 0	0 0	" Moss	.. 12 bunches	0 0	0 0
Cornflower	.. 12 bunches	0 0	0 0	Parma Violets (French)		5 0	6 0
Dablias	.. 12 bunches	2 0	4 0	Pyretbrum	.. 12 bunches	3 0	6 0
Epiphyllum	.. doz. blooms	0 6	0 0	Stephanotis	.. 12 sprays	4 0	6 0
Eucharis	.. per dozen	3 0	6 0	Stocks, various	12 bunches	3 0	5 0
Gardenias	.. 12 blooms	2 0	4 0	Sunflowers	.. .. ..	0 6	1 0
Gladioli	.. 12 bunches	9 0	12 0	Sweet Peas	.. 12 bunches	2 0	4 0
Hyacinths, Roman, 12	sprays	0 0	0 0	Sweet Sultan	12 bunches	0 0	0 0
Lapageria, white, 12	bunches	2 0	4 0	Tropeolum	.. 12 bunches	1 6	2 0
Lapageria, red ..	12 blooms	1 0	2 0	Tuberose	.. 12 blooms	0 4	1 0
" longiflorum, 12 blms.		3 0	6 0	Violets	.. 12 bunches	1 0	0 0



MICHAELMAS PLANS.

ANOTHER year's work ended, another year's work begun, for Michaelmas is here once more, and with it comes the end and beginning of the farmer's year. Results and prospects are carefully considered, plans made for the future, the crops for another year being decided upon, and the cultivation of the entire farm passed under critical review to see what has been right, what wrong in the past, and what improvement in practice is possible in the future. Well indeed will it be if we are able now to see why failure or success has crowned or marred our efforts, why this crop was inferior, that crop abundant. If all farmers could do this we should not hear of so many applications for a reduction of rent just now. On the day of writing this article a tenant farmer came to our market stand to complain of short crops and to demand a further reduction of rent upon that conceded to him last Michaelmas. Thirty-two bushels of Oats per acre, and about 28 bushels of Wheat, was all that the land would yield under his system of culture. We were bound in reply to point to land brought from an almost barren condition to yield this year eighty bushels of Oats per acre, to Wheat and Barley crops equally satisfactory. But it was all in vain, and we have pretty well come to the conclusion that land would be dear to such a tenant at any price. No thought had he of improvement in his own practice; if the land would not yield profitable crops under the system of culture handed down to him by his forefathers, why the landlord must reduce the rent again and yet again. In common fairness to the landlord we were bound to inquire if the tenant was prepared to adopt a more economical method of culture which we had found to answer upon a farm we have in hand within a mile of his. We also suggested chemical manures instead of farmyard manure, offering to afford him proof of the superiority of the chemicals, to show him how to procure, mix, and use them. No! he could not or would not acknowledge that he was wrong. It will, therefore, be our duty to see that the landlord shall not suffer for his obstinate stupidity. It is precisely such men who "go under" now and make way for better farmers. We must effect all possible improvement in the land, and such improvements receive due attention always, but they have a specially prominent position in our Michaelmas plans.

Wheat, Barley, Winter and Spring Oats, Winter Beans, Peas, White Turnips, Swedes, Kohl Rabi, Mangolds, Potatoes, Carrots, Rye, Winter Tares, and permanent pasture all claim attention in our Michaelmas plans. Farmers generally condemn Wheat as an unprofitable crop, yet there are still sharp shrewd men who contrive to make it answer. One of them had a sample of White Wheat at market a day or two ago which he sold at 34s. a quarter for the grain, and for the straw he obtained 45s. a ton. Now he had five quarters per acre of this Wheat exclusive of tail corn, and between two and three tons of straw. The grain, therefore, realised £8 10s., and the straw upwards of £4 10s., or a total of £13 per acre. Assuredly that man will not give up Wheat-growing, yet why should he make it answer while his neighbour fails to obtain 4 quarters an acre, and has a thin meagre growth of straw? The reason is this: the successful man has his land in a high state of cultivation—dry, clean, and fertile; he takes care to sow pure carefully selected seed, and to use pure chemical manures, so that the soil is kept well stored with nutriment. He avoids altogether the costly manufacture of farmyard manure for his corn land, and his profitable Wheat culture is comparatively inexpensive in comparison with that of the unsuccessful man who clings

to the muck heap and manure cart, and will have nothing to do with artificial manure.

To Barley, Oats, and other crops the remarks about Wheat apply with equal force. Repeatedly have we shown that no crop affords so clear an indication of the condition of the land as Oats, and we can assure our readers that it answers to apply manure to the land both for Oats and Barley just as much as it does for Wheat. We still say let the proportion of each crop be well balanced, and do not lightly discard any crop that has answered, or which can be made to answer under high culture. By high culture we do not mean an extravagant experimental process, but the best culture possible, having due regard to the combination of economy with efficiency. If only we have learnt how to do this, and are on the alert to turn every opportunity of improvement to best account as it occurs, we may still work on hopefully, patiently, and have no fear but that success will crown our efforts. But there must be no carelessness, no easy-going haphazard practice; every stroke must tell, and we must be deeply impressed with a sense of the dignity and importance of our calling. This is not a time to be above our work, and we may rest assured that the man who by dint of downright earnest effort battles successfully with the difficulties which now beset the farmer's work, will command the involuntary respect of all whose respect is worth having.

WORK ON THE HOME FARM.

The collection and storage of root crops now goes briskly on. We have begun with the Mangolds, and have reason to be fully satisfied with the crop, for although the recent drought checked the growth it improved the quality of the roots, and it may be taken for granted that they contain more saccharine matter than usual. Nor can we complain of the quantity of the crop, for it is unusually abundant, and the supply is so bountiful that the question arises, How shall we turn the whole of it to best account? At one of our off farms we have already taken action by the purchase of some bullocks. We have done this both for the winter consumption of roots, and also the consumption of several stacks of Barley straw. There is the food; we have no market for it at hand, and therefore there is a special reason for having forty or fifty beasts in the yards next winter. We shall not have to spend a single shilling on food for them, and it will be optional next spring to sell or keep them over for fattening. We mention this as an instance of adapting ourselves to circumstances as they arise, and of the wisdom of avoiding fixed rules in practice. Our old sheep are fast improving in condition, but we shall not press them upon the market, for it is precisely when they fill out and begin to fatten quickly that it answers best to feed well, and to keep them till they are in really "blooming condition."

The ploughs have been at work daily since our last note was written, and we have not only got most of our land ready for winter corn but some of it is sown. This was done in mixed soils, but on the heavy land farms we had to wait for rain to soften the hard clods before the drills could be used. Full advantage has been taken to get as much land as possible clean, ploughing, harrowing, and couch-burning going on daily without hindrance of any kind. Late second crops of Clover have been saved well, but there are general complaints about barrenness in much of the seed Clover. In some instances Clover intended for seed has been made into stover—somewhat hard and coarse in texture, it is true, but it will answer well if cut into chaff and mixed with other food for horses. Young layers are so strong and forward in growth that they afford food now for grazing, but care must be taken not to have them eaten off too closely.

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude, 111 feet.

DATE.		9 A.M.					IN THE DAY.				Rain
1886. October.		Barometer at 32° and Sea Level	Hygrometer.		Direction of Wind.	Temp. of Soil at 1 foot.	Shade Temperature.		Radiation Temperature.		
			Dry.	Wet.			Max.	Min.	In sun.	On grass.	
		Inches.	deg.	deg.		deg.	deg.	deg.	deg.	deg.	In.
Sunday	3	30.052	53.3	51.9	E.	55.9	66.9	45.2	87.6	37.5	—
Monday	4	29.913	62.1	60.9	E.	56.3	78.3	54.1	112.2	47.0	—
Tuesday	5	29.825	61.6	60.3	S.E.	57.2	77.0	54.9	103.4	47.3	0.068
Wednesday	6	29.813	56.3	55.4	S.E.	57.8	63.8	55.1	95.7	54.3	0.193
Thursday	7	29.835	57.1	56.3	E.	57.2	61.4	51.7	70.8	44.6	0.153
Friday	8	29.929	55.2	54.6	E.	56.8	59.3	53.3	66.4	48.2	—
Saturday	9	29.877	52.9	52.7	S.E.	56.3	62.5	61.2	83.7	44.5	0.259
		29.899	56.9	56.0		56.8	67.1	52.2	88.5	46.2	0.673

REMARKS.

3rd.—A fine bright day.

4th.—A very bright warm day.

5th.—Another delightful summer-like day.

6th.—A wet morning; fine afternoon and evening.

7th.—Wet and dismal throughout.


8th.—A very dull foggy day, brightening slightly in early afternoon.

9th.—Fog, clearing towards noon; fine afternoon and early evening; very wet at night.

The early part of the week was most delightful; the closing part very autumnal.

Temperature 7° above the average, and somewhat above that of the preceding week.

—G. J. SYMONS.



COMING EVENTS

21	TH	Apple and Pear Show at Exeter (two days).
22	F	
23	S	
24	SUN	18TH SUNDAY AFTER TRINITY.
25	M	
26	TU	Royal Horticultural Society, Committees and Show (two days).
27	W	National Chrysanthemum Society, Floral Committee.

FINE APPLES AND PEARS.

APPLES and Pears always come prominently under discussion at this period of the year; and it is right that they should, for is not the former the most serviceable of all fruits of temperate climes, and the latter the most valuable of hardy delicacies for dessert purposes? There cannot possibly be a more opportune time for recording observations on the character of some of the varieties than the present, first because a great majority are in condition to be judged actually "by their fruits," which is better than trusting to memory, however retentive, or compiling from books however good and generally reliable; and secondly because the time for ordering trees has arrived and the period for planting is closely approaching.

A little skirmishing has already been indulged in in the Journal in the form of the tossing of a few kinds to and fro between correspondents, as if they were somewhat more intent at hitting each other than of conveying information to interested readers, more particularly those who lack experience in growing or have not the best opportunities for examining most of the leading varieties. There is one consolation, however—nothing bad has been recommended, but, on the contrary, scarcely a variety has been brought to the front during the past two months but what is good for some purpose or other, and notably are those enumerated on page 349 worthy of consideration by intending planters. As nowhere are such facilities afforded for forming a comparative estimate of the merits of fruit as at a great show, and as the greatest and best display of Apples and Pears of the season was that held at South Kensington last week; and as, moreover, probably not one reader of the Journal out of a thousand could inspect that Show; and as reports, however full and good, can only be generally descriptive, I propose referring to some of the prominent dishes individually, taking no account of the exhibitors, but only of the fruit. This will be done in a manner in which growers of the varieties mentioned can compare their own produce and form an opinion as to how much it is above or how far it is below the standard of excellence represented, and at the same time enable those persons who do not know the varieties that will be named to form a better idea of their size than can be gathered from catalogues.

Culinary Apples being the most generally useful, primary attention will be devoted to them. The August Apples were necessarily not visible, and it must suffice to say that perhaps the best of these is the Early Julyan; tree a small grower, and great bearer of medium sized fruit; profitable for market. Nor were the early Codlins represented except by a few dishes of Lord Suffield. The finest Apple of this type was the Nelson Codlin, the fruits being 4 inches deep and $3\frac{1}{4}$ wide. This is an Apple of great usefulness, the tree being a good grower and great bearer. Duchess of Oldenburgh was shown $3\frac{1}{2}$ inches wide and $2\frac{1}{4}$ inches high, handsomely striped, a variety combining beauty with utility; the tree a sturdy

grower, bearing well. Cellini was $3\frac{1}{2}$ inches wide and 3 inches high, symmetrical and richly coloured; a free, early bearing, October Apple, and one of the most constant. Yorkshire Beauty was $3\frac{1}{2}$ inches wide near the base and $3\frac{1}{4}$ inches high, tapering somewhat acutely, skin clear creamy yellow, showing the clear red cheek to advantage; in outline and general character somewhat resembling Emperor Alexander. This is commended especially to one of your correspondents with a mental pseudonym, who does not appear to be acquainted with this Apple. Possibly if he were to grow it he would in a few years' time advise others to do likewise, but the "others" had perhaps better not wait.

Emperor Alexander was splendid in many dishes; fruits $4\frac{1}{2}$ inches wide and $3\frac{1}{2}$ inches high, richly coloured, and one of the most handsome. The tree makes a fine standard, not a compact bush. Winter Hawthornden, $4\frac{1}{2}$ inches in diameter and $3\frac{1}{2}$ inches high; good in every dish, and there were many. This is one of the best Apples, resembling Warner's King, the tree growing well and bearing early and freely. Stirling Castle, handsome, smooth, and symmetrical, fruits 4 inches wide and $3\frac{1}{2}$ inches high; one of the best of all for bushes and small gardens. Ecklinville, fruits $4\frac{1}{4}$ inches wide and 3 inches high, a first-rate Apple; tree prolific both as a bush on the Paradise and standard on the Crab. Gloria Mundi, perhaps the heaviest dishes in the Show were of this variety, fruits $4\frac{1}{2}$ inches wide and $3\frac{1}{2}$ inches high; the tree is a good upright grower, but the branches are not "roped" with fruit. Warner's King would run the preceding closely as regards weight; fruits $4\frac{1}{4}$ inches wide and $3\frac{1}{2}$ inches high, uniformly fine throughout; the tree is a healthy grower and fruitful. Loddington, fruits large, taller and more angular than usual, $3\frac{3}{4}$ inches high and the same in width; the tree is of compact, sometimes of scrubby habit, and bears heavily: not a good grower, and, as your mental man says, is liable to canker in some soils and districts. Peasgood's Nonesuch, the most handsome Apple of all, combining a uniformly smooth outline and bright and pleasing colour: fruits $4\frac{1}{2}$ inches wide and the same or nearly so in height: the tree grows and bears well, and this noble variety should not be overlooked in orders to nurserymen. Mère de Ménage, the finest of the very dark Apples, deep, dull red, fruits $4\frac{1}{4}$ inches wide and 3 high; a good grower and bearer. Brabant Bellefleur, of the same type as the preceding, but though taller not quite so large and deep in colour: a moderate grower and excellent bearer. Lord Derby, not so large as usual, $3\frac{1}{4}$ inches high and 3 inches wide: a very fine Apple, the tree growing well and bearing freely. Annie Elizabeth, $3\frac{1}{2}$ inches high and 3 inches wide, prevailing colour brownish red: an excellent Apple, and tree a sturdy healthy grower and free bearer. Lane's Prince Albert, $3\frac{1}{2}$ inches high and 3 inches wide: an attractive and excellent Apple, and one of the best and most reliable of bearers, not making a large spreading tree. Alfriston, $3\frac{1}{2}$ inches high and $3\frac{1}{4}$ inches wide: a fine firm Apple, making a fine standard, but not good for dwarf culture. Small's Admirable, 3 inches high and about the same in width: a first-rate Apple, and one of the most abundant bearers in a dwarf state. Golden Noble, $3\frac{1}{2}$ inches wide and $3\frac{1}{4}$ inches high, symmetrical golden fruits: tree a free grower and makes a fine standard, not a good dwarf. Lady Heniker, fruit angular, $3\frac{1}{2}$ inches wide and $3\frac{1}{4}$ inches high, of excellent quality, and tree a good grower and free bearer. Striped Beefing, 4 inches wide and $3\frac{1}{2}$ inches deep: handsome, and one of the hardiest and best of late culinary varieties. Dumelow's Seedling, $3\frac{1}{4}$ inches wide and 3 inches deep: a well-known brisk late culinary Apple, the tree bearing abundantly. Blenheim Pippin, not so large as usual, $3\frac{1}{2}$ inches wide and $2\frac{1}{2}$ inches high, well known for its excellence; but if a person wants good crops in a few years let him plant trees on the Paradise stock, if fine standards for his grandchildren plant trees on the Crab.

Twenty-six varieties are named, not in the order of merit or of ripening, but just as they were observed, as among the

most prominent dishes in the show. No doubt others of value are omitted, but perhaps it would not be easy to choose an equal number of first class culinary Apples similarly imposing in appearance and good in quality with those named excluded from the selection; and judged, therefore, by that test, those briefly described may be regarded as worthy of cultivation.

It is not necessary to refer in detail and with equal precision to the dessert varieties; but as an indication of the size of well-grown examples three familiar kinds may be adduced—namely, Cox's Orange Pippin, fruits $3\frac{1}{4}$ inches wide and $2\frac{3}{4}$ inches deep; Ribston Pippin, $3\frac{1}{2}$ inches wide and $3\frac{3}{4}$ inches deep; and King of the Pippins, 3 inches wide and $2\frac{3}{4}$ inches deep. Growers who do not exhibit, yet have fruits equalling or exceeding these dimensions, may conclude that they are good; but do not let anyone think that a question of half an inch in the height and diameter of an Apple is of small moment on the question of size, for it is of great moment, making all the difference between a medium and full-sized fruit, or between winning a third prize instead of a first in competition.

A crumb of comfort is derivable from a comparison of the Canadian Apples with our home-grown produce. The transatlantic specimens were clearer in the skins and brighter as a rule in colouring; but as regards size, freshness, and general good appearance the English fruit as a whole was markedly superior. With the exception of Kentish Fillbasket from Nova Scotia, and Emperor Alexander from Montreal, there was nothing strikingly meritorious; and, broadly speaking the market value of the English fruit decidedly exceeded that of the Canadian produce. It is evident that with a judicious selection of varieties and good culture English markets can be supplied with home-grown Apples as good as those that can be brought from elsewhere, and it ought to be soon enough to avail ourselves of the produce of orchards 3000 miles away when the frosts of spring nip the blossoms in our own, and prevent a golden harvest.

Now turn to Pears, of which many splendid dishes were staged at the Show in question. A few of the finer will be noticed, and the size of the fruits indicated in the same informal manner as with the Apples. The finest Pear in the Exhibition was Pitmaston Duchess, the largest being 5 inches long and $3\frac{1}{4}$ inches wide, but the majority were half an inch shorter, and large enough then, as they would weigh nearly or quite a pound each. This is a noble Pear, and the tree grows and bears well as pyramids in the open, espaliers and on walls. It ripens in October and early November, and is very juicy, with a delicate acid taste that is refreshing to some palates. Louise Bonne, $4\frac{1}{2}$ inches long and 3 inches wide, beautifully coloured, and well known as one of the best varieties. Durondeau, $4\frac{1}{2}$ inches long and 3 inches wide, bright and handsome fruit, and the quality generally very good, but somewhat variable according to soils and seasons; a fine late autumn Pear. Marie Louise d'Ucele, fruit $4\frac{1}{2}$ inches long and $3\frac{1}{2}$ inches wide (very fine); a valuable hardy good bearing Pear of excellent quality. It bears no resemblance to the old favourite Marie Louise, but is not less worthy of cultivation. British Queen, unusually large, 5 inches long and $3\frac{1}{2}$ inches wide. The fruit when in its best form is of high quality, but occasionally decays at the core sooner than is pleasant to the owner. This and the preceding are October and November Pears, the time of ripening being as influenced by soils, seasons, and districts. Fondante de Cuerne, $4\frac{1}{4}$ inches long and 3 inches wide (very fine), a large and good early autumn Pear not commonly grown. Triomphe de Vienne, $4\frac{1}{2}$ inches long and $3\frac{1}{4}$ wide, an imposing fruit, rich, sugary, and melting; a comparatively new Pear not in general cultivation, but worthy of a trial in all large collections. Beurre Diel, not extra large; fruit $4\frac{1}{4}$ inches long and $3\frac{1}{4}$ inches wide; a well known large and prolific Pear, of excellent quality when its aroma is developed, otherwise not superior. It is greatly improved by finishing the fruit in a temperature of 80° or 90°,

and the same remark applies to many, if not most, other Pears that are not quite so good as is desired. Beurré d'Amanlis, 4 inches long by $3\frac{1}{4}$ inches wide; a hardy free growing and good bearing autumn Pear, but not always of the first quality, yet usually satisfactory, and extensively grown. Doyenné Boussoch, $3\frac{1}{2}$ inches long and the same in diameter, one of the handsomest Pears grown, very refreshing and enjoyable when "caught right;" but its best properties quickly depart, and decay spreads rapidly. Maréchal de Cour, $4\frac{1}{2}$ inches long and 3 inches wide; a splendid Pear both in appearance and quality, and should have a place in even small collections; usually ripe in November. Beurré Bosc, 4 inches long and 3 inches wide, sharply tapering to the stalk; an attractive and excellent Pear, and tree a free bearer. Doyenné du Comice, $4\frac{1}{2}$ inches long and $3\frac{1}{2}$ inches wide; a splendid Pear of superior quality, ranking amongst the finest and best in cultivation, usually in use during November. Beurré Superfin, $3\frac{1}{2}$ inches long and 3 inches wide, a fine looking and most delicious Pear, and the tree healthy and fertile; all growers should plant it if not already in their gardens. Marie Louise, $4\frac{1}{2}$ inches long and $2\frac{3}{4}$ inches wide, fine, and a well known variety, growing best on the Pear stock. Glou Morceau, $3\frac{1}{2}$ inches long and $3\frac{1}{4}$ inches wide, quite one of the best of midwinter Pears, and the tree tree hardy and a great bearer, good as an orchard standard in favourable positions. Fondante d'Automne, 3 inches long and $2\frac{1}{2}$ inches wide, an attractive and most delicious Pear, and the tree a free bearer as a bush, standard, or against a wall, should be included in all orders when purchasing trees, if not already in possession. Beurré Rance, $4\frac{1}{2}$ inches long and $3\frac{1}{4}$ inches wide, fine; a very late Pear of superior quality, but does not always ripen well in northern districts, but when it succeeds it is valued.

Those are a few of the "fine" Pears that attracted attention in the conservatory of the Royal Horticultural Society, and all of them, except Triomphe de Vienne, are familiar to the writer in a growing state. There are many smaller Pears that are not less worthy of culture, but all varieties cannot be brought under review at once. The measurements given are actual, exclusive of stalk; they are above the average of the varieties as usually grown, but it is well to see what is accomplished by good management, as cultivators generally then know what they have to do to excel in the production of the most useful of culinary and most esteemed of dessert fruits—Apples and Pears.—EXPERIENTIA DOCT.

SPRING BEDDING.

THE taste for flowers in every form has so much increased of late that the old-fashioned plan of allowing the flower beds to remain empty after the removal of the summer occupants is being discontinued, as the beds can be made to look well in the spring with very small outlay. As the season for removing the summer bedding plants to their winter quarters is now at hand, refilling the beds with the spring plants should be commenced. It is an advantage to plant early, particularly where the soil is heavy, as if we have much rain and frost before the planting is completed the soil loses its warmth, and the roots of the plants do not take kindly to their fresh quarters. I propose to offer a few notes on the plants which I have found suitable for spring flowering in the beds, and the best methods of preparing them, with a few notes as to their arrangement in the beds.

WALLFLOWERS.—On account of the ease with which they can be provided, their adaptability to almost any situation, and their delicious perfume places them at the head of the list. Veitch's Dwarf Dark is the best variety I have tried. It is dwarf and compact in habit of growth, which is a consideration of no small importance when it is used for massing in a bed or border. The flower spikes are stout; the flowers, too, are large, of a rich dark glossy colour, and its perfume is very pleasing. Harbinger grows too tall, the spikes of bloom are not so self-supporting, after the lower flowers fade the spikes elongate too much, which renders them weak, while the colour is not so rich as the former variety. Belvoir Castle is the best yellow I have seen. It is dwarf, but branches freely, producing a number of bright yellow spikes of bloom, which are very fragrant. A great advantage is gained by

using varieties which branch freely, as an extra number of flower spikes are obtained, which is an acquisition; but in this much depends upon the way in which the plants are grown preparatory to planting finally into the beds. Of doubles the German variety is very fine in flower when grown from a good strain, but they are not suitable for massing in beds, as they grow so unevenly. The best position for them is a single row in front of the shrubbery or herbaceous borders, where uniformity of height is not of so much consequence.

The time of sowing the seed of all the sections should be varied according to the soil in which they are to be grown. For a heavy soil the seed should be sown from the middle to the end of May, as the plants should be grown almost to their full size prior to planting in the beds, for the reason, owing to the retentive character of the soil, the plants do not grow freely after the autumn rains have chilled the soil. On light sandy soil from the beginning to the middle of June is early enough to sow the seeds, as the rains do not affect plants in the same manner when growing in sandy soil. Previous to sowing the seed, if the ground be at all dry, thoroughly soak the beds, which should be in size according to the requirements of the place. Sow broadcast thinly, and lightly cover with fine soil; attend carefully in giving water, thoroughly soaking the soil when the plants are well above ground. The Turnip fly seems partial to the tender leaves of the Wallflowers, and should be checked by the application of soot over the leaves. An east or a west border suits them admirably, the former being preferred. When the seedlings are about 2 inches high they should be transplanted into rows 1 foot wide and 10 inches apart in the rows; in such a manner they will grow freely and preserve a stocky habit, which is much preferred to that tall weakly growth which is produced when the plants are allowed to remain in the seed beds till wanted for final planting. Some light manure, such as the materials from spent Mushroom beds, is best for the heavy soils. This should be dug into the beds just previous to planting. It is better if the digging and the planting can be done in the same day, as the soil at this time of the year works so much better when freshly dug than when it becomes wet. Lift the plants with as much earth to each as possible, place them as near together that the leaves touch each other. This is the best guide I can give, as so much depends upon the size of the plants.

MYOSOTIS DISSITIFLORA.—This is the best variety of the blue Forget-me-not. It is dwarfer in habit, blooms more freely, and of excellent colour. From a good strain carefully selected plants should be grown annually from cuttings, which are more to be depended upon than those raised from seed every year, which vary in height considerably. The best way to procure a stock of cuttings is the following:—When the old plants are taken from the beds after blooming, the flower spikes should be cut off and the plants laid in in rows in a west border or in an orchard among the fruit trees. Suckers will soon commence growing from the bottom of each plant. These should be taken off early in August and inserted in a cold frame in sandy soil under a north wall. In this position shading is dispensed with; or under handlights they will succeed equally well as in the cold frame. If well watered when inserted the cuttings will require very little more until they are rooted, which they soon will be if the frames are kept close, admitting no air until roots are formed; then some should be given, increasing it until the lights can be taken off altogether. This prevents the plants becoming drawn weakly. When well supplied with roots the plants should be placed in rows on any open piece of ground, first forking in some well-decayed manure or decayed leaves with refuse soil from the potting bench, from which material they lift so much better than they do from ordinary soil. They will have made strong bushy plants by the time they are required for the beds, in which they should be planted so that the leaves touch one another, as if the winter is at all severe many of the largest leaves will be spoilt, and require removal before the young growth starts in the early spring.

POLYANTHUSES.—Showy free-flowering plants when well grown, A large number of plants can be procured from seed for a start selecting a good strain. The first year the best should be separated from those not so good. These latter will be useful to plant in the front of the herbaceous or shrubbery borders, while the more choice varieties should be reserved for the annual display in the beds, and from which the future stock shall come. To commence, then, sow the seed about the end of March in a gentle hotbed, removing them to cooler quarters as soon as the seedlings appear; transplant them thinly into boxes or, what is better, into a cold frame, and when they have become well established plant out on a west border, and by early in October they will be strong plants ready to be placed in the beds, and will make a good display the first year, after which when blooming is over they should be removed from the beds, cutting off the flower spikes, dividing the plants into as many

pieces as have roots. Plant them on a west border, pointing in some manure. Attend to them with water if the weather be dry until they commence to grow, when no more will be required except it be a very dry season. By the time they are required in the autumn they will be strong plants furnished with plenty of roots, and can be planted without any check. Place them in the beds at such distances that the leaves just touch each other. A better effect is produced when the plants are placed in a mass in one bed; the contrast in the colours is better, and, what is more important, they bloom simultaneously.

DOUBLE PRIMROSES.—The lavender, white, and yellow varieties, with the purple *P. acaulis platypetala plena*, are the best, and are showy favourite spring-flowering plants; but they are not well suited for associating with other plants in the beds, as they bloom earlier than those generally employed for the decoration of the spring garden. If all the beds are not expected to be all gay at the same time they may be used, but otherwise they should be planted by themselves—for instance, along the fronts of the herbaceous borders. The treatment required to provide a supply of plants is the same as for *Polyanthus*.

SINGLE PRIMROSES.—These assist much in the embellishment of the flower garden in the early spring. The front of a shrubbery or herbaceous border, or even on rockeries, they flourish and make a good show, now that they are so readily raised from seed, and of such improved colours. Dean's strain is the one I like best. The plants are dwarf, and bloom profusely. In order to have plants ready to place in the beds in October it is necessary to sow seeds of them early in June in a cold frame under a north wall. In such a position the seeds germinate freely, and when the young plants are large enough to handle prick them out in sandy soil liberally enriched with leaf mould. Keep the frame over them until they begin growing freely, when the lights may be dispensed with altogether. In hot weather water them freely. They, too, are more effective when planted in masses.

DOUBLE DAISIES.—Where spring bedding is done these are indispensable, so useful are they for planting either in designs, edgings, or masses. They are easily increased and grown to a suitable size; they are quite hardy and bloom profusely that they may be classed as everybody's plant. Red, white, and pink are the principal varieties. A newer variety is Rob Roy, but not quite so hardy as the others. It is admired for the rich colour of its flowers, contrasting well with the white variety; it is dwarf in habit of growth. The best method of increasing the stock of plants is as follows:—In May, when the beds are cleared to make room for the summer occupants, the plants should be divided. If a large number is desired every piece that has roots will grow, but if the stock required is not large then they need not be so severely cut. Prepare any open piece of ground by digging it and adding some well-decayed manure. Plant in rows 10 inches apart, the plants about 8 inches asunder in the rows, and keep them regularly supplied with water. If the sun should be very powerful a little shade given to the plants would be an advantage until they commence making fresh roots, when they will take care of themselves. So grown they will at planting time be good stocky plants with plenty of roots. Some people simply lay the plants in rows when taken from the beds, and divide them when removing them to their winter quarters; but this method causes too great a check to the plants, and at this time of the year they do not recover so quickly as in the spring, when the ground is warmer. They make a much better show in the beds when planted thickly together, as it is a thick mass or patch of the various colours that is required.

IBERIS CORIFOLIA.—A plant particularly well adapted for spring bedding, being of easy growth, very hardy, and, what is of more importance, its flowers are white, which renders it extremely useful. *I. Tenoreana* has a larger and better flower, and it is also more compact in its growth; but its fault lies in its blooming too late to be of any use as a bedder. In the borders or on the rockery it is much appreciated.—E. M.

(To be continued).

CATALOGUES.

THE season of nurserymen's catalogues has commenced with its usual severity. On seeing the size of some of these productions, and the coloured plates, and musing on the money expended on printing and publishing (for one well-known firm informs us on the first page that the cost of their catalogue is over £1000 a year), we cannot help wishing it were possible to share this money somehow between the nurserymen and their customers—to keep it to ourselves, as it were. But I am afraid it cannot be done. Advertising does pay; and a flourishing business in one trade will help other lines of business, and I suppose we ought not to regret it. Being more than ordinarily annoyed one day by the coolness and persistence of a wine merchant's tout, I wrote to the head of the firm, with whom I did deal occasionally, asking him if he thought I would buy

wine because I was asked when I did not want it, and thought I "had him," but his retort was very simple, "Do you think I should spend the money on it if it did not pay?" and I have not yet found the answer to that.

Just now the Rose catalogues predominate, and in one respect I think these have a valuable advantage over general seed lists. But I have often thought that amateurs who are novices ought to have a little training in catalogue English before they rely on the descriptions in Rose catalogues. That "medium-sized" means "small" they might perhaps guess, but that "pretty" generally means "small" too, might not occur to them. They should also learn that "mod." for moderate, as applied to habit of growth, means such weak growth as to render the variety unsuitable for culture, except in quantities for exhibition, and that "a good garden Rose" means that the quality is not good enough for show purposes; and on learning this latter definition they will probably ponder the question, If some of the best Roses are also the most floriferous and the best autumnals, why grow those of second quality at all? And especially they should learn to beware, on seeing the fatal words "almost full," applied to any Rose, remembering that "almost saved is altogether lost."

In one important respect, the general winter and spring seed lists, particularly those of small local dealers, compare most unfavourably with Rose catalogues. Thanks to the National Rose Society, in every case, except perhaps the newest untried Roses, a named Rose is a distinct variety, and is not something else under another name; and the same might be said, perhaps, of all florists' flowers. But in vegetables, every "John Smith" nurseryman of any provincial town now sends out his catalogue, and in all the more important vegetables, Peas, Potatoes, &c., you will find in it, "John Smith's First Early Pea," "John Smith's Ashleaf," &c., in large letters at the head of the list. Now I do not know if every John Smith means to say that he has a distinct strain of all these vegetables from every other John Smith, but only that I doubt it. No allusion, of course, is intended to firms of world-wide reputation, nor would I go so far as to doubt that "John Smith" himself did raise the variety, whatever it is, from seed; but what I want to know is, is there any reason, beyond the old one, "he wouldn't do it if it didn't pay," why he should have the right to name any vegetable, simply because he has so raised it, if it be not distinct?

At a large show this summer, in front of an imposing display of seeds, &c., was a dish of Tomatoes, fair sized fruits, labelled "New Tomato," "William Brown's Glory of Glories," or some such name. With something of the scepticism of the stranger in Mark Twain's "Jumping Frog," I asked the attendant, "What points there were about that Tomato better than any other Tomato?" but he could not tell me of any, or even allege that it was distinct from existing sorts; all he could say was that it was of their own raising, and that he did not see the force of my argument that it was therefore at all events not proved to be a "New Tomato" at all.

What should be the remedy for this state of things? Something in the certificate way, as done by the Royal Horticultural Society, seems the obvious one; but I am not sure that this would prevent the small and comparatively ignorant gardener from still believing in the local "John Smith" Pea as the best and earliest in the world.—W. R. RAILLEM.

THE ROSE IN 1886.

ACCORDING to custom I now proceed—after all the strife is over, and rosarians, whether exhibitors or not, are for a brief space resting on their oars previous to the preparation for planting for next year—to review the past season and see how far one's anticipations of it have been fulfilled or otherwise; and in so doing shall bear in mind as far as I can its bearing on exhibitions and on our gardens, for the reproach has sometimes been cast upon us, undeservedly I think, that we have no ideas about the Rose but those which are connected with it as an exhibition flower, and a great deal of very groundless "gabble" has been made on the subject. I believe it will be found that those who are interested in it as exhibitors are also the best promoters of it as a garden flower. One of the very best authorities we have on the species of Roses, and whose garden contains nearly everything that is worth growing among them, and perhaps a good many that are not worth growing, is one of our foremost amateur exhibitors—I mean Mr. Girdlestone of Sunningdale; while another of our members, Mr. Julius Sladden, who has exhibited such large collections of old fashioned Roses, is also a successful exhibitor of show Roses. It is quite time that people with whom it is a cheap pastime to sneer at our best show Roses, should drop their "vapourings."

It has been my good fortune this year, as before, to "assist" at most of our Rose shows, and although I did not again cross the border I had the counterbalancing advantage of breaking up new ground; and at Hitchin, Moreton-in-the-Marsh, and Clifton attended shows at which I had not been before. As usual I had to refuse many pressing invitations, not being able to accomplish the feat of being in two places at the same time. The wide range which I have again taken—Canterbury, Maidstone, Farningham, Clifton, and Moreton in the west, Wirral, Sutton, Tunbridge Wells, and Eltham, besides the National

Society Shows in London and Birmingham, has given the opportunity of seeing Roses in all parts of the country and Rose shows of very varied characters. I have also seen many Rose gardens, and in giving my opinion on the season and its results I cannot plead want of data, and if I err it must be through incapacity, not ignorance. I was asked at the beginning of the season what I thought it was likely to be, and said I hoped, unless the unforeseen occurred, we might look for a good one. This was in May. Well, things did not go as we hoped for. Long cold weather succeeded by blazing heat was too much for the Roses, and although I never remember seeing Roses truer to character they were also small. It was rarely that one had to question what a Rose was, and I think that this to a great extent made up for the want of size. They were also, except in the very hot weather, fresh and good in colour; so that I should pronounce my verdict on the season, as far as exhibition Roses went, a good, but not a very good one.

In two things the season has been exceptional—the unusually fine days in which the exhibitions were held, for I do not remember one case in which there was rain. Even Wirral, which has generally managed to secure at any rate a shower if not a down-pour, had a lovely day for its Exhibition. This season will then have been a good one to test whether Rose shows will support themselves. In some places they seem to take and to be entered into with spirit, while in others it is lamentable to see the utter apathy with which they are regarded. Managers of shows cannot now, however, say that bad weather keeps people away. The other exceptional fact has been the almost total absence of aphids. I say almost as a sort of saving clause, for if I were to leave it out I should soon have someone starting up, "What nonsense! Never had it worse; Roses literally weighed down with it." But I never saw it or heard of it. Our Hops enjoyed the same immunity, and it was a strange thing not to see the syringe used. Another pest, however, in many instances took its place—the orange fungus, disfiguring the plants and injuring, I suppose, the blooms. This will be discoursed about in the "Rosarians' Year Book." Mildew has also in many places been very bad; nor is this to be wondered at when we consider the very great alternations of heat and cold that we have experienced: and although when it comes late it does not permanently injure the plants, it is very disfiguring to them while it lasts and injures much the autumn blooms. And this reminds me of what an autumn we have had and are still having, what a grand profusion of blooms; and although we do not look for the same quality in the autumn, how valuable they are! and above all how have the Teas vindicated their claim to be true Perpetuals! I am not surprised to find how much more popular this lovely class has become, and many growers are increasing their stock of these and diminishing the Hybrid Perpetuals. At almost every show that I attended there was a marked increase in the number and quality of the Tea Roses exhibited, and I think that we shall find this still more developed in the future.

The exhibitions of the National Rose Society have again been most successful. New ground was broken at Birmingham, and everything went off with satisfaction to all concerned. The exhibitors were treated with courtesy, the arrangements were excellent, the Show a large and good one; and although I believe it entailed a heavy pecuniary loss to the Botanical Society yet there was a very large assemblage of people. The Show at South Kensington was good, but, held as it was in broiling weather, the Roses suffered considerably, and I think the feeling was more and more impressed upon exhibitors and the public that it had outgrown the capabilities of the place. There has been the utmost loyalty on the part of the Society to connect itself with the great centre of horticulture, but withal that its experience has not been happy; and although the utmost that long patience could effect has been done, yet it is, I think, increasingly clear that the Society must look out for other quarters. Take but one case. The classes for twelve blooms of Roses (twelve of a sort), to many persons one of the most interesting of all, had to be placed in a narrow passage at the front of the conservatory where there is hardly room for two persons abreast, and with the sun pouring on the unhappy flowers. Everything, indeed, connected with the Royal Horticultural Society is in a very uncertain state. But independently of this the inconveniences are very great. It is at a distance from all railway stations; famished exhibitors and their assistants can get no breakfast, and I know of one who was severely ill for want of anything. Even a crust of bread and a cup of tea were not to be had until about twelve o'clock; while in the after part of the day since the exhibition era commenced dinners as expensive as you might desire might be had, there was a famine in the land in the early part of the day.

There has been nothing very startling in the way of exhi-

bitors—nothing so remarkable as Mr. Pemberton's success last year or Mr. G. Mount's a few years ago; for although Mr. Pemberton again carried off the challenge trophy he did not keep up the ball quite so long. I said some time ago that we should see Mr. T. B. Hall at the top of the tree. I do not think he can ever be so at our southern show, as his Roses are never in bloom so early, but at Manchester this year, which was on the 18th July, he was well first. People hardly consider enough at what disadvantage northern growers stand at our earlier shows, and if they do exhibit, the blooms shown are what probably southern growers would have discarded as premature blooms. I know that it is not until towards the end of July or beginning of August that the northern blooms are in their full tide of glory. A good deal was written some time ago in the Journal about the grievances of small growers as exhibitors. I think the case I brought forward of Colonel Standish Hore, who out of 168 Rose trees secured a first prize for twelve H.P. and third for six Teas at the National Rose Society's Show, beating two experienced growers with large collections, besides securing at two other good shows three first prizes, a second, and a third, effectually disposes of these grumblings, and I think is so notable an example of what may be done, as to give great encouragement to all small growers.

There are two prizes which are given at some of our affiliated societies' shows which I should like to see altered. One is the prize for the best box of Roses in the show irrespective of numbers. This is a most difficult thing to decide, as all who have had to judge it know, and it rarely gives satisfaction. The most difficult case was, as I have already said, at Moreton, where it was ultimately decided to divide it between two exhibitors, one professional, the other amateur. It was, of course, an unsatisfactory way of doing it, but no other course seemed open. One writer suggested that such things were sometimes done to make it pleasant for both parties. I think this betrays a great ignorance of human nature, for the inevitable result is dissatisfaction, each probably thinking that he ought to have the whole prize, and in the Moreton case the professional exhibitor threatened the Society with legal proceedings. In my remarks on this case I have called a £10 prize a demoralising one, and the result has proved it to be so. Will affiliated societies consider this question before another year? By-the-by, a writer of experience, but who in this instance seems to have been hitting wildly about him, has suggested to remedy this, that classes of the same number should be pitted against one another—seventy-two to seventy-two, thirty-six against thirty-six, and so on. I wonder whether he thinks that these classes are as plentiful as blackberries in schedules, or does he know that one of these classes is as much as one can look for, and that consequently to follow out his plan would be simply adding to the first prize in each class? No, I believe the better plan would be to abolish it altogether. Another very doubtful prize is that for the best Rose in the show. It is impossible rightly to weigh the merits of a first-rate H.P., say Marie Baumann or A. K. Williams, and a first-rate Tea or Noisette, such as Souvenir d'Elise and Maréchal Niel, and probably the judges would be influenced by their predilections for either the one class or the other. Let societies strain a point, give up the best-box notion and give a prize for the best Tea and the best Hybrid Perpetual. This is always an interesting matter at the National, and would be for any provincial show.

I do not think that it was a season when there were any specially remarkable blooms such as linger in one's memory. It was strange that Boieldieu, a Rose comparatively seldom exhibited, should have taken the prize for the best Hybrid Perpetual at South Kensington, and as evidencing the staying powers of the Teas and Noisettes that Mr. Girdlestone's Maréchal Niel should have taken the prize for the best Tea or Noisette at Moreton, and two days afterwards at Birmingham should have gained the same honour; but while many Roses were excellent, I do not recollect any super excellent blooms; and this opens up a question which has been much discussed—Are Roses exhibited in as good form as they used to be some years ago? Are the Roses which have gained the challenge trophy equal to those which were exhibited when the Cranston challenge cup was decided at the Crystal Palace? I very much question it, and lay it to the score of the seasons we have had of late years, which I do not think have been so favourable for the development of good blooms as those we used to have.

If super-excellent blooms have not been seen this season, there has also been a great dearth of really good new Roses; in fact, of those of 1885-86 there has hardly been one of which any special notice has been taken. One of our most successful Rose growers says they are a bad lot. Of the 1884 Roses the most promising are Dr. Dor, a seedling of Liabaud's, shaded red and peculiar in form; it has the advantage of being a perpetual

bloomer and very sweet scented. Edward Hervé is one of E. Verdier's flowers, large, cherry red, very vigorous and fragrant; General Appert (Schwartz), velvety reddish purple, shaded, full, and very vigorous, likely to be useful; Gloire Lyonnaise, I have not yet discovered the yellow in this Rose, there is the faintest suspicion of primrose at the base of the petals, and in bud it is pretty enough; as it was raised from Baronne de Rothschild and Madame Falcot, its place ought to be amongst Hybrid Teas if that class is to be maintained in our catalogues; Princess de Béarn (Levêque), rich dark crimson, shaded with vermilion, very large, globular, this is a vigorous-growing dark Rose, promises well; Madame Raoul Chandon (Ch. Verdier), a flower of the Marie Finger type, but said to be distinct and likely to be useful; Mrs. George Dickson (Bennett), I thought very pretty when opening, but there is too little of it ever to make it a useful exhibition Rose; Souvenir de Gabriel Drevet (Guillot) is a fine addition to our Tea Roses, something, so Mr. B. Cant says, between Souvenir d'Elise and Madame de Watteville. I have reserved what I think likely to be the best of the 1884 Roses to the last. Victor Hugo, it is a brilliant coloured flower of the Xavier Olibo type, but more vigorous in growth than that favourite variety; Clara Cochet promises to be about the best of the 1885 Roses, it is one of Lacharme's, a clear satin rose colour and vigorous; Comtesse de Frigneuse is likely to be a good Tea, another of Guillot's raising, bright canary yellow and regular Tea shape, very free flowering.

Two American Roses are highly spoken of. Mr. B. R. Cant kindly sent me a bloom of The Bride, which is a white sport of Catherine Mermet, and Mr. Boyson of Caen was good enough to forward me a bloom of American Beauty, it is a Hybrid Tea and very fragrant. Both of these are likely to be useful Roses.

Such is my retrospect of the past season. I shall probably find many to differ from me, only let me warn them not to be too much biassed by their own personal experiences in their own gardens, but take a broad view. Rose-growing and Rose-showing exhibit no signs of diminution, on the contrary, both are increasing. It is true some societies came to grief, but others take their place, and I think the National Rose Society may fairly lay claim to much of this progress. Its principles are widely acted upon, and its assistance and advice eagerly sought.

Before closing, I cannot omit an expression of personal feeling. I have everywhere received the same kindness that I have experienced in former years, and whether amongst old friends or in new places, where I have been enabled to form new ones, I have to look back upon many pleasant days passed amongst the flowers we love so well.—D., *Deal*.

LATE PEACHES.

MR. MUIR deserves the thanks of growers for the lucid manner in which he has directed attention to the inadvisability of planting late varieties of Peaches on walls. "Late Peaches are much valued," as Mr. Muir very appropriately observes at page 314. They are esteemed for their fine appearance at dessert, and are especially valuable from a pecuniary point of view. The prices realised for choice fruit in the markets this year early in October were better than for fruit ripe in June. This may be in a measure due to the comparative scarcity of Pears this year, but in other seasons I have found the prices of late Peaches were better than at any other period when the cost of production, as it ought, is taken into consideration. Fine examples in late September and early October brought 9s. to 12s. per dozen wholesale, whilst comparatively poor examples were only bringing 4s. per dozen. Those bringing the highest prices were, as "A Thinker" puts it, "magnificent specimens, the result of thinning, mulching, and watering; indeed, the same care is bestowed on them as is devoted to the prize" fruit, and it pays. "A Thinker," at page 315, hits the nail on the head, and drives it home by stating, "With a judicious selection of varieties of fruit and higher culture, the standard of value would soon be raised." Continuing, he clenches the argument by the statement that "It is deplorable to see the rubbish that is poured into our markets, and humiliating to find American" (and I would add foreign) "produce preferred to our own." This is the way to a better order of things, and that there is room we need only look at the difference presented by our produce with foreign in the markets. There is no reason to wonder at its being given preference being solely attributable to its "uniformity of excellence." It is clinging to old and obsolete varieties which gives foreigners the pre-eminence in the supply of the markets, in that they "send choice fruit of uniform quality by tons," whilst our choice fruit is only capable of estimation by pounds, the majority of it being rubbish.

As to late Peaches being a "mistake," I must join issue with your experienced and accomplished correspondent Mr. Muir. Your correspondent seems to practise in a cold locality, or he would not class Barrington and Bellegarde amongst the late Peaches. It is stated that "Barrington is ripe now," which may be the end of September, so that the location of your correspondent must be a late one, but allowance must be made for Peaches; indeed, all outdoor fruit, and indoor for that matter, being late this season. The usual season of Barrington is the middle of September, and is preceded by Bellegarde, its season being from the beginning to the middle of that month. Your correspondent has them in different order from this, which, I think, is a slip of the pen, and is only mentioned from its being likely to mislead planters in selecting varieties. The varieties he names are certainly not sufficiently numerous for a supply of fruit from as early to as late a period as possible. If your correspondent only grows or recommends those named on pages 314 and 315, I fear there will be a blank between the early, midseason, and late varieties; in fact, Hale's Early does not ripen outdoors before early August, or ten days to a fortnight before Early York, and Early Alfred's season is the same as Early York, if anything earlier. Bellegarde does not usually ripen until September, very often not until the middle, and is only ten days or so in advance of Barrington; in fact, I have had them ripe together. These four Peaches in a season like the present continue the supply from early August to late September; but in a good year I think these four varieties are not sufficient to an unbroken supply from the earliest to the latest period possible. To the quality of the varieties named I take no exception, only Hale's Early is not of the first size, nor Early Alfred either; but they have free fruiting and quality on their side, so that they are for private use at least unexceptional, and Bellegarde and Barrington are two of the best midseason Peaches. For a supply of Peaches on walls from as early to as late a period as possible, I think we cling far too much to the "follow my leader" doctrine. We do not experiment enough. We take for granted what others mark out for us, instead of marking out a pathway for ourselves. We plant too much and retain too much. Every grower should ascertain what sorts are most suited to his locality and then plant largely of the best—i.e., most profitable. This seems only proper, and appears to be what Mr. Muir has done, and I wish in no way to detract from the value of his communication nor in any respect to put forward my views, only so far as those of your correspondent seem to me inadequate and not calculated to make the most of the materials at our command.

Of the early Peaches I think Waterloo must take first place. It is large and brilliant in colour. Alexander is also large and of brilliant colour. Then comes Hale's Early and Early Alfred, also Rivers' Early York. I really should not like to say which is the best of the three, but Early Alfred is the largest. Dagmar, however, is more handsome than any of the three last, is simply exquisite, and large. In a limited selection it must supplant the trio. Dr. Hogg is my next. It is large, handsome, a great cropper, and a capital traveller. Condor is a large Peach and brilliant colour. Then we come to Magdala, which only wants size. Grosse Mignonne, followed by Royal George (Stirling Castle is a hardier variety of Royal George), Belle Bance, Dymond, Violette Hâtive, Bellegarde, six kinds of the very first order, to excise one of which is only to do injustice to the others. Then there is Noblesse, its hardier form Alexandra, and the finest of all the midseason varieties Goshawk. What is Mr. Muir going to make of those last named nine? Of the light Peaches I have not given prominence to Early Rivers, Early Silver, and large Early Mignonne, all early, and as some like the pale Peaches; and there is no denying their rich racy flavour and some think charming appearance, they are mentioned so as to meet all tastes; besides, they sell well, especially with customers that require quality. Crimson Galande for colour is superb. It is of the Belle Bance race, but hardier and a great bearer. These are all really good Peaches and have done excellently, but I do not recommend the light-skinned Peaches, they are more tender than the darker coloured sorts and sooner spoiled by wet. Barrington must not be omitted. It is the last and best of the midseason varieties.

My object, however, was to make some remarks on the late sorts, which are alluded to by Mr. Muir as a "mistake," although he only names two—viz., Walburton Admirable and Salwey. Late Admirable is certainly one of our finest late Peaches and brought 1s. each this season. Its size and high quality cause it to rank high as a late variety. Walburton Admirable is later, and by some thought hardier, but I do not think so, its great recommendation being a better shaped fruit, and it is clearly of a type that does not always ripen well outdoors. Salwey is certainly not worth space on a wall outdoors, so that your correspondent

has just cause for the heading of his pithy article on page 314—viz., "Very Late Peaches a Mistake." That they are a mistake against walls outdoors no one who has any experience will deny, for in nine cases out of ten they do not ripen satisfactorily, and the trees make so late a growth that the wood does not ripen and they are unhealthy. Your correspondent deserves the thanks of all gardeners for his outspoken remarks. In these days we cannot waste wall space with what cannot be other than problematical even in the best of atmospheric conditions; but the late Peaches have a value, I think, superior to the early varieties, especially in the new varieties that have been originated of late years. Size, colour, quality have made rapid progress, and however much we may deprecate them as compared with the mid-season varieties, they are indeed great advances and well done very valuable. In fact, until the late Mr. Thos. Rivers took the Peaches and Nectarines in hand, we had very few Peaches that might be termed late. Beyond the two Admirables—i.e., Late and Walburton, there were but Desse Tardive, Teton de Venus, and Yellow Admirable. Now we have some truly noble varieties. There is Princess of Wales, which comes in just before Desse Tardive, and is one of the most beautiful Peaches known. Lady Palmerston is even more handsome, and has a decidedly Nectarine flavour. Prince of Wales is very large and very good, though I could not get it last season from Mr. Rivers. It is very high coloured, very similar to Barrington. Lord Palmerston, very large and beautiful. It has a firm flesh, and so has Nectarine Peach, both of which are capital travellers. For quality none of the late Peaches, perhaps, equals Sea Eagle, and ripening about the same time is Osprey, closely followed by Golden Eagle of a beautiful lemon colour. Gladstone is of high colour, very good, and runs Sea Eagle hard for first place in point of quality. Cornet, yellow, with a flushed cheek, ripens before Salwey and is of the same order.

Those are all splendid fruits. The question is, Are they to be recommended for outside culture? I think with Mr. Muir that for such a purpose they are a "mistake." But to grow them under glass is another affair. They have no flavour—are poor and mealy—little better than chewing wood when they are done badly; but treat them well and then they are juicy and full of flavour. The fact is, they require to be under glass in heat, so as to ensure the blossom having a chance to develop and ensure a good set, also to ensure the safety of the embryo fruits. They also want heat in autumn so as to ensure a circulation of air and dispel damp. They want, in fact making safe against spring frosts and autumn frosts, damps, fogs, and cold. Our seasons are not long enough for them. Some have success with them by using lights in front of a coping in spring and autumn. The best examples are those where heat is given, and with Salwey Peaches can be had up to November. What makes them so poor very often under glass is want of proper supplies of nutriment when the fruit is swelling. I have had Nectarine Peach in pots quite woolly and flavourless, whilst the same sort planted out has been much praised for its quality, the only difference being that one had exposure during the growing season, the lights being taken off in summer. It would be a capital thing if we could give all our indoor fruits a drenching of water in hot weather direct from the clouds. The ammonia the rain brings down and soaks the earth with is manifest in the growth that follow thunder rain. It also cleanses the foliage, and is most beneficial. Besides, what need of lights in the dog days? We want lights that can be withdrawn in little less time than it takes to roll up greenhouse blinds, and to be able to replace them in an equally short space of time. Late Peaches want to come on steadily and not be broiled in late June, July, and August.

The lights of late Peach houses, especially when that takes the shape of a case against a wall, might just as well be off the trees as on from midsummer until the end of August, except in unexceptionally wet seasons, for the question is not to get heat, but rather to get openings large enough to prevent too great an accumulation of it. This would keep the fruit from advancing so rapidly and ripening at a time when not required. The quality is much improved by the steady progress, the substance of the fruit being built up of duly digested and concentrated matter, instead of constantly evaporating through the necessity of a current of air in order to keep down the temperature. Lights to husband the sun heat and a gentle warmth to ensure a circulation of air in autumn are simply essential to having late Peaches of good quality. It is also necessary to keep the wood thin and to keep well supplied with nutriment—watering with liquid manure and mulching as may be necessary according to the requirements of the trees, especially when taking the last swelling. It is essential to the fruit ripening perfectly and to the plumping of the buds. Treated in this way late Peaches,

instead of being a mistake are grand, most acceptable at dessert, and pay better than early forced, which dig deep into the pocket of the grower, and the prices are as high in October as they are in June, and this year are much better for the seller. The late Peaches command a good price if only for their noble appearance, and if done well are juicy and well flavoured.—UTILITARIAN.

BARKERIAS.

THE species of this genus are all extremely handsome when in bloom, and as several of them produce their elegant flowers during autumn and winter they become doubly valuable. Pot culture is not suitable or congenial to *Barkerias*, they should therefore be grown upon blocks; but as they do not adhere very firmly to these perhaps the very best contrivance for them is a rough cork basket. The plants should be made fast



Fig. 54.—*Barkeria elegans*.

with copper wire and a little live sphagnum used amongst the roots; but very little moss or peat is necessary, as the roots, which are thick and fleshy, usually grow straight out into the air. During the season of rest the plants lose their leaves, and at this time amateurs generally dry the life out of them. This, however, is wrong treatment, as the blocks or baskets should be occasionally syringed, even when the plants are dormant, otherwise the following season's growth will be very weak and the flowers somewhat microscopical.

B. SKINNERI.—No more charming object for a Christmas bouquet could be wished for than a few spikes of this plant. The stems are from 9 to 12 inches high; the spikes are long, produced from the top of the shoots, and bear a quantity of lovely deep rose-coloured flowers, which last many weeks in perfection if kept from damp. It blooms during the dull autumn and winter months. Native of Guatemala.

B. SPECTABILIS.—Another fine species. It grows erect, and from the top of its stem-like pseudo-bulbs are produced long racemes of large bright lilac and pink flowers, which are in some varieties freckled with crimson dots. Its flowers are freely produced during the months of June and July and last a long time, especially when cut for bouquet-making. Native of Guatemala.

B. ELEGANS.—This is also a native of Guatemala, and is at the same time one of the most beautiful and rarest of the whole genus. Like the others its growths are slender and stem-like, whilst the flowers are very large and richly coloured, the sepals and petals being dark rose and the lip deep red shading into crimson. When I add that these beautiful spikes of bloom are produced during midwinter, enough will have been said to recommend it to all interested in this order. A representation of this beautiful species is given in fig. 51.—E. C. G.

AMATEURS.

A QUESTION has been raised in the pages of the *Journal*, presumably for discussion before taking definite steps, if any, in regard to it. As a southern amateur, I beg to submit a few thoughts on the subject, viewing the question on the side of the amateurs.

The question may be stated thus—Shall we have a separate challenge trophy for the northern amateurs? Shall we divide the competition for the championship? The first thing one would ask is, What do the northerners say? I should very much like to hear. For my part, I fail to see the wisdom of allowing the present trophies subscribed for by all to become the exclusive property of the southerners, and of getting other trophies for the exhibitors of the north. The idea has certainly been encouraged by competing for the trophies year by year at the southern exhibitions of the N.R.S. Is there not a plan by which the north can stand on an equal footing with the south? Are there not northerners who grow as good Roses as those of the south? I think so. Messrs. Hall of Liverpool, Whitwell of Darlington, and Garnet of Chester, for instance. Think of Mr. Whitwell's Roses of a few years ago, Mr. Hall's at Liverpool and Manchester this year and last, were they not as good as, if not better than any southerners? Why, then, if this be so, talk and propose to act as if their Roses were so inferior that they must have a trophy to themselves for second-rate blooms. Give them a right date, and they will be a match for their friends of the south. Don't let us always choose the date that best suits us of the south, and then, having placed others at a disadvantage, turn round and say, See how small are the chances of the trophies ever getting farther north than Essex, Herts, and Hertford. But what is a right date? Clearly not the first Tuesday in July, for some Rose gardens in the south are barely out by that time, but give them a week or a fortnight later and then see.

Now, someone may say, Why not, then, have trophies for north and south as proposed, to be competed for at dates suitable to each respectively? Because the division will so weaken the competition in the north that the trophy will not be worth winning. I will show why I think so. Suppose you divide the country by the line as suggested by "T. W. G.," how many amateurs in the northern provinces can be reckoned upon to compete? Think of the first division amateurs at the N.R.S. provincial exhibitions for the last three years (Salisbury excepted), and call to mind how many amateurs in the northern provinces have competed. As far as my memory goes there have been but two—viz., Messrs. Hull and Whitwell, and to these might perhaps be added next year the name of the Rev. L. Garnet. But here the list, to me, seems to end. Now consider, given two classes for thirty-six, one open to all amateurs, the other for northerners only, in the class where the competition is the strongest there will be the best Roses. The competition will be strongest, not in the class for the northern trophy, but in the class in which southerners and northerners meet. Where, then, in all likelihood will the northerner place his best blooms? Will anyone like to see the challenge trophy won by second-rate blooms? Union is strength, by unity a good competition will be guaranteed. Carry the proposed idea into effect, and it may end in there being a walk-over for one northern amateur, as there certainly would have been in the years 1885 and 1886. I cannot, however, help saying in passing that this northern amateur is a very good fellow, who dearly loves a good stand-up fight, and no one would rejoice more than myself to see him carry off the trophy next year. I should like to hear his views on the subject. I know he has some.

Now I will make a suggestion which will, I think entirely meet the case. It is this: Let the present trophies be competed for, not always at the metropolitan exhibition, but year by year alternately at the metropolitan and provincial exhibitions; this will give all a good chance of winning the challenge trophy of the United Kingdom of the queen of flowers.

Let us keep together, do not divide us, give us suitable dates, carry out this suggestion to have turn and turn about, and then the northern amateur will again see his name engraved on the trophy, as he has done already.—SOUTHERN AMATEUR.

THE FLORA OF THE BRITISH POSSESSIONS.

AT the inaugural meeting for the winter session of the Horticultural Club held Tuesday 12th inst., at their rooms, 1, Henrietta Street, Covent Garden, Mr. J. G. Baker of the Royal Herbarium, Kew, introduced for discussion the subject of the flora of the British possessions, of which the following is a *résumé*:—

He pointed out that the British Empire contains the whole or a portion of seven distinct botanical provinces, as follows:—

I. Britain itself is botanically a mere appendage of the European continent. Including Malta and Gibraltar we can claim about 3000 of the 10,000 plants of the European flora. He thought that in

dealing with gardens and gardening in Britain it would be a decided advantage if the climatic zones as defined by Watson were used by horticulturists. Watson divides Britain into Arctic and Agrarian regions, and subdivides each of these into three zones. We know the zonal range of every British plant, and would it not be an advantage if we could similarly speak of Superagrarian, Midagrarian, and Inferagrarian gardens? The Inferagrarian zone is marked by the upper limit of Clematis, the Midagrarian by the upper limit of fruticose Rubi, and the Superagrarian by that of the Foxglove and common Brake.

II. India embraces every variety of climate, from equatorial heat to perpetual snow, and an enormous range of variety in humidity. In India we have not less than 15,000 plants. There are a large portion of those that are known in the whole tropical zone of the Old World. Sir J. D. Hooker's "Flora of India" will fill no less than six volumes, of which four are now finished.

III. The British possessions in North America fill an area nearly as large as that of Europe, but they yield very few plants not known in the United States. We estimate their flora at 5000 species.

IV. We have in Mauritius, Seychelles, and Guinea a mere fragment of the little-known flora of tropical Africa, which closely resembles in its general features that of tropical Asia. We may claim here perhaps 3000 species.

V. The flora of the Cape and Natal is exceedingly rich, containing perhaps 8000 or 10,000 species. On this subject all horticulturists should read the excellent sketch contributed by Mr. Bolus to the Cape handbook issued in connection with the Indian and Colonial Exhibition.

VI. The flora of Australia is very rich, and has been fully worked out by Mr. Bentham and Baron Von Mueller. The principal endemic types are concentrated in extra-tropical Australia. In tropical Australia there is a strong infusion of types from tropical Asia. The flora of New Zealand is not large, but interesting and peculiar. The flora of Fiji forms part of the general flora of Polynesia, and is as yet very inadequately explored. There is no abrupt line of demarcation between Malaya and Polynesia in plants. We cannot reckon the number of plants in this province at less than 10,000.

VII. In the West Indies and Guiana we possess a mere fragment of the great tropical American flora. The number of species may be estimated at 4000. So that, from a botanical point of view, the empire embraces three distinct botanical provinces and portions of four others, and these different areas are so situated that comparatively few plants are found in more than one province; so that there is in the British Empire nearly one-half of the whole number of the plants of the world—a state of things which, both in botany and horticulture, places us in a very favourable position.

An animated discussion followed, in which the Rev. C. Wolley Dod, Mr. T. W. Girdlestone, Mr. Druery, and most of the other members present took part.

CHRYSANTHEMUM NOTES.

BELLE PAULE, OR BELLE PAULINE.—Mr. Cannell, Swanley, sent me a bloom of this when first sent out by Marrouh, and since then I have been anxious to grow it. Last year I gave a cutting to a friend, and both he and I failed to bloom it satisfactorily, evidently for the reasons stated by Mr. Molyneux, page 333. This year I have grown it differently—viz., in a prepared and highly manured border against a south wall, and so far the buds are most promising. In habit and foliage, thus treated, it resembles Eve and Duchess of Albany. At present they are about 4 feet high each, but the last-named two are seemingly much later, and will require protection from frost. If your correspondents would try this and many others rather shy in setting their buds in a rich, deep, and well prepared border against a south wall, or sink the pots in such a position, should fruit trees or otherwise already monopolise it, so as to prevent or minimise the risk of insufficient water at the roots, success will be assured. If frost threatens, a sash in front where planted out will generally prevent injury until blooming has been completed.

EARLY-BLOOMING CHRYSANTHEMUMS.—I am very pleased to see you have commenced to open your columns to those instructive notes and inquiries that at this time of the year all Chrysanthemum growers so much appreciate. Opinions are gradually getting fixed that for most purposes Madame Castex Desgranges is peerless as an early white. A month since I saw quantities of it as cut flowers in Covent Garden Market. These were, I presume, grown under glass. In a few places I saw beds of it, but they do not flower here before October in the open air. I doubt if it can ever be used for this purpose in our moist rainy climate—the moisture lodges in and rapidly rots the blooms. Earlier and better for beds is the little white beauty, La Petite Marie, growing about 8 inches high and perfect in form. A large bed, with La Vierge centre if white was desired, or Anastasia if violet purple, with concentric circles of Mons. Lavallée, white; then Frederick Péle (crimson), Golden Jardin des Plantes (yellow), or Précocité, similar colour, but a week earlier; then Nanum (blush), with the afore-mentioned La Petite Marie for margin, would be an extremely interesting object, contrasting in colours, of suitable height, and all blooming sufficiently near to the same time as to be very effective during September and October. One of the best of the late introductions

is Salter's Early Blush, a hybrid Pompon of medium size, blooming in the open border the first week in October, a beautiful early reflexed. Much taller is G. Wermig; though a sport from Madame C. Desgranges I cannot at all say as a yellow it is so good. Delphine Cahoche and Secrétaire Daurel, shades of lilac and purple, now blooming, about 16 inches high, are perhaps most floriferous of all, literally biding their foliage. Fiberta, though early, has not yet bloomed with me. Pynaert Van Geert, tall Japanese, Isidore Féral, and Alex. Dufour, are just now (mid-October) commencing to open their blooms in the open air. The foregoing are a selection as the best of thirty-six varieties. Elaine, Fair Maid of Guernsey, Lady Salborne, and James Salter will expand in a week.—W. J. MURPHY, Clonmel.

ANEMONE CHRYSANTHEMUM EMPEROR.—I was surprised when I read in the Journal that the Judges at the Crystal Palace last November pronounced this a Japanese Anemone. I have grown this variety over twenty years, long before the Japanese varieties were generally known, particularly Japanese Anemones. I must acknowledge that it is a rather deceptive variety, and not free in producing good flower buds. The blooms when young are of a purple lilac colour, with a lighter centre, but when old they assume a deep cherry red hue. Its guard petals are long and ragged and sometimes irregular, and may be taken by the inexperienced for a Japanese Anemone. I am glad to see the National Society have placed it in its right section. Exhibitors and judges cannot be better guided than by following the above mentioned catalogue. The edition for 1886 is a great improvement on the old one, and a good guide for cultivators as well as exhibitors and judges.

PROVING CHRYSANTHEMUM AND CHRYSANTHEMUM BELLE PAULE.—I have never experienced any difficulty in selecting flower buds of Belle Paule. With me it produces buds so freely that the difficulty is to select the best. I have grown it for three years, and have always found it one of the most free. It is a late variety and produces the best blooms from lateral buds. Exhibitors as a rule select the crown bud, or summer buds, hence their failure with this variety, as the summer buds are nearly always soft or blind and seldom come to perfection. Another mistake often happens—i.e., growing it in too large a pot. It is a very tall, soft, and free grower, and should be in a size smaller pot than many other varieties, so as to ripen or harden its growths.

I always prove all new varieties by allowing my plants to grow naturally—i.e., without stopping, and only partly thin the bloom buds, hence I am better able to form a more correct opinion as to character or habit, and suitability for exhibition blooms or plants, &c. I often notice Pompon varieties (new) disbudded so extensively that the blooms are forced to an unusual large size; that gives the blooms the appearance of being hybrid or small incurved or reflexed flowers. I am proving this season over one hundred varieties on the natural system of allowing most of their growths to produce bloom buds.—ROBERT OWEN, Maidenhead.

CHRYSANTHEMUM EMPEROR.—I was rather amused to find that Mr. Molyneux should own himself responsible for the disqualification of Chrysanthemum Emperor. I had taken it to be the measure of some far less authority. But surely if I read Mr. Molyneux's remarks rightly, he is treading on dangerous ground when he argues that a bloom out of character is to be disqualified. I quite agree with him that it is misleading to the public for blooms to be shown out of character, but if they are correctly named, as in this instance, it is not for the judges to disqualify the whole stand. There are instances in which much discretion is required in judging on this point. Take the old question of Princess of Wales and Mrs. Heale. These, though quite distinct, are often shown so much alike as to make it very doubtful whether or not they have not been cut from the same plant. I should not like to say that one of them was simply out of character, but should in many cases disqualify them as synonymous. A white Princess of Wales shown by itself should not be disqualified, but if shown on the same stand as a white Mrs. Heale it should be.—N. DAVIS, Camberwell.

BELLE PAULE.—I believe Mr. Molyneux has given the correct explanation of the reasons why Belle Paule is frequently shy in bud formation. My plants of this variety each produced crown buds freely about the middle of July. These being too early were taken and another growth taken forward. These growths added 2 feet 6 inches to the height of the plants, and all produced a second crown bud during the second and third weeks in August, and which buds are now developing finely. In Sheffield and neighbourhood, owing partly to our smoke-laden atmosphere and partly to our geographical position adjoining to the great Yorkshire and Derbyshire moors, we seldom suffer from severe heat, as do growers in more favoured districts. To this reason and to the fact that my plants have, I know, never been too dry at the roots, I attribute their good behaviour as regards bud formation. I believe that, as regards this district, the season will prove to be the best we have had for many years for producing fine flowers. Some of the new American varieties recently raised by Mr. Jao. Thorpe are developing very fine flowers with me. Especially is this the case with Gorgeous, an early incurved Japanese, of a bright golden yellow colour, a very large and deep flower, and which will, I believe, prove to be a fine exhibition flower. I hope Mr. Molyneux will be able to publish his book before the exhibition season sets in. I think a copy should be in the hands of all exhibitors as a valuable work of reference, especially upon points of detail in staging and exhibiting.—W. K. W.

TAKING CHRYSANTHEMUM BUDS.—On this important point in the cultivation of these plants I would like say a few words, for whether or not the time specified by Mr. Molyneux for taking the buds be too late for northern growers, it is decidedly too early for growers in Devon and Somerset, at least such is my experience.

We grow about 180 plants for big blooms, and throughout the season they were treated as nearly as possible as Mr. Molyneux directed in his excellent articles that have appeared in the pages of the Journal. By the 1st of August several of the plants were showing their crown buds, but none were taken until August 6th, when, thinking four days could make but little difference, and not caring to lose the crown buds, we commenced taking them, and continued to do so as they showed until all were taken, the last being on September 13th. From previous experience in the south of Devon, where I had charge of some 400 plants, I felt assured we were too early, and so it has proved, for already some varieties—noticeably *La Triomphante*, Mons. Henri Jacotot, Comte de Germigny, Sœur Dorothee Sonille, M. Mousillac, and Mons. Tarin—are fully expanded, whilst many others are showing colour, and promise to be open by the end of this month. Amongst these I may mention M. Moulise, Fanny Boucharlat, La Nympe, Bismarck, Duchess of Albany, Album Plenum, Jeanne d'Arc, Mons. Freeman, Criterion, John Laing, Fabias de Mediana, Soleil Levant, and Golden Queen of England.

This is not by any means an isolated case, as I am acquainted with three growers in Devonshire who have found from experience how difficult it is to obtain blooms in the middle of November from crown buds, and have consequently to depend upon terminals, except in the case of a few very late varieties, such as *Meg Merrilies* and *Boule d'Or*. A gardener in this neighbourhood, who is both a grower and exhibitor of these flowers, on seeing we had taken some buds when he called here during the last week of August, said they were too early to be of any use in November, or he had always found them so. At that time he had taken none of his, so from this I conclude the time mentioned by Mr. Molyneux is quite a fortnight too early for growers in this district. I should be glad to hear the opinion of others in the two counties I mentioned.—C. L., *Bristol*.

DEFORMED CHRYSANTHEMUM BLOOMS.—I have some Japanese blooms now opening which are like Hen-and-chicken double Daisies. They are on well-grown plants, crown buds having been set early in August. A number of distinct small blooms surround the main bloom at the base of the crown. The centre is now half expanded, and the small offset blooms are showing colour. The varieties this has occurred in are *Fair Maid of Guernsey*, *James Salter*, *Agréments de la Nature*, and *Curiosity* (the last two are identical with me). Is this very uncommon, and do you think they will develop into perfect blooms? I also have some crown blooms of blush *Queen of England* the centre of which show a number of embryo buds, but they are opening well, and promise to have great depth.—T. P.

CHRYSANTHEMUM BELLE PAULE.—It is generally believed that human nature derives much satisfaction from the contemplation of other people's misfortune, and I am not, I fear, entirely exempt from this failing, as I read with considerable pleasure the letters in your columns complaining of failure in blooming *Belle Paule* this season. Last December I procured two good cuttings of this variety from Mr. N. Davis, which having been struck in a cold frame, grew strongly till May, when one suddenly went "blind." After cutting down in June it seemed to flourish amazingly till about the end of August, when it again went blind, and notwithstanding all our efforts it remained inactive till quite recently, when it started, though it has not yet shown a bud, and hardly will now, I should think. The other plant gave no trouble, was not cut down, broke at the proper time, and seemed most promising till early in August, when all three buds seemed to become blighted, and it has never moved since, though showing vitality at the roots by sending up suckers in abundance. We syringe our Chrysanthemums with water forced direct from a well through a hose on to the plants, and I thought this might have chilled the young growths. But all having been treated alike, and *Belle Paule* only having shown this tendency to blight, we must ascribe our failure to natural coyness of the variety, or, as Mr. Molyneux does, to the hot weather when the buds were forming, which is, I think, a most likely explanation, for with me during those oppressive days at the end of August, *Meg Merrilies*, *Liciniatum roseum*, and *Souvenir d'Amsterdam* collapsed entirely, while *Cossack*, *Madame John Laing*, *Fleur de Marie*, and several others were seriously injured. The plants were not allowed to be dry at the roots, but the heat of the sun was such that they seemed unable to support the enormous evaporation from their leaves, which were scorched.

Mr. Davis, in your last issue, complains of the public taking little or no interest in the compilation of the National Chrysanthemum Society's catalogue and affording the Committee no assistance. But how could they when about 90 per cent. of the new Japanese "Chrysanth" are of foreign origin? It was to the French that the National Chrysanthemum Society Committee should have applied if they wanted accurate information. Take, for example, the variety we have just been discussing, *Belle Paule*. Last year it was generally known as *Belle Pauline*. Why is that now changed? *Pauline* is a very common female name in France, and therefore likely to be the true one. The question might have been settled conclusively by applying to M. Marrouch. Was this done? Another plant is variously named as *Triomphe de la Rue des Châtelets* or *des Châtelets*. I suspect the latter is the correct designation, though she favours the former. Has inquiry been made of M. Pertuzet? Again, Why has the "Madame" been taken away from poor "Bertie Randatler?"

What has she done to deserve such degradation? The absurdity of calling a French-raised Chrysanthemum "Messrs. Thibaut et Keteleer," has been already demonstrated in the columns of a contemporary, but why in addition to this blunder has the second name been altered from "Keteller" as it was spelt last year? Lastly, I find the terminations of all quasi Latin names changed from "um" to "a" in the new Catalogue, as *Alba plena*, *Rosea superba*, for *Album Plenum*, *Roseum superbum*, &c. Is this correct?

These are a few cases which I have noticed in looking through the work, but doubtless there are many others, and it is only with the assistance of the French that we can ever hope to obtain a correct list of all the foreign names. But as Mr. Davis and other members of the National Chrysanthemum Society must be frequently in communication with the raisers one would think that any information could easily be obtained, though Mr. Davis may not be in very good odour with his Gallic correspondents, owing to his acuteness in detecting the efforts of our neighbours to foist on the British public old varieties under new names. For his pluck in denouncing these floral frauds he deserves the warmest thanks of his countrymen.—B. D. K.



WE learn that the Marquis of Bute is so well satisfied with the results of his VINEYARD EXPERIMENT IN SOUTH WALES, that he intends considerably extending the cultivation of Grapes in the open air for wine-making purposes, and we believe several acres will be planted with Vines in the spring. The vineyard at Castle Coch has been increased to twice its original size, and we understand a new and favourable site has been selected for extending the cultivation of Vines in fields.

— MESSRS. JAMES CARTER & Co. have sent us a head of the STANDARD BEARER CELERY, a variety of which they have recently become the possessors. It is a red Celery, very fine indeed, containing much stalk in proportion to foliage. It is remarkably solid and heavy, the sample before us being such as is coveted in private gardens and markets.

— MUCH has been written from time to time on the EXTENSION SYSTEM OF VINE CULTURE, but it is just possible that few, if any, of its advocates have seen a better exemplification of the method than in the case of a Vine at Manresa House, Roehampton. This is a remarkable, and probably a unique specimen. The Vine was planted twenty-three years ago by the present gardener, Mr. Davis, and rods trained at intervals of 2 feet in a horizontal position along the roof of a lengthy structure. These now cover a length of 224 feet, or total length of rods of 1568 feet. Bearing laterals are only allowed on the upper side of the rods, and these are a foot apart. Each bears a bunch of excellent Black Hamburg Grapes. The growths are singularly regular from end to end and uniform in strength. They are cut back to spurs at each winter's pruning. This year 607 bunches have been cut from the Vine weighing 840 lbs., the berries being of full size, and excellent in quality and colour. We shall hope to see this splendid Vine when bearing its crop. It is not the only noteworthy Vine at Manresa House where Grapes and other kinds of fruit are extensively and well grown by the able and courteous gardener.

— WE are informed that the Council of Administration of the FRENCH NATIONAL SOCIETY OF HORTICULTURE decided, at a special meeting on October 4th, called with the view of aiding, in the most effectual manner, the horticulturists in the surroundings of Paris who were sufferers by the hailstorms of the 10th and 23rd of August, that independently of the subscription open under its patronage, a "Tombola" (a sort of lottery) of which the drawing will take place on October 29th, 1886, shall be organised for their benefit, at the same time as the Exhibition to be held from the 23rd to the 29th of October. The Society appeals for contributions to this work of succour by the gift of plants, fruits, horticultural implements, objects of art, &c., to constitute the lots. They should be addressed to M. le President de la Société Nationale d'Horticulture de France, Pavillon de la Ville (Champs-Élysées), Paris, from the 20th to the 25th of October. Gifts in cash will be devoted to the purchase of various lots. The price of the tickets is 50 centimes (51.). We are informed that the losses by the hail around Paris alone amount to over 5,500,000 francs, or £220,000.

— LAST week we noted the display of CANADIAN FRUIT AT SOUTH KENSINGTON, but since then large consignments have been received, and the exhibition is now one of the most comprehensive of its kind ever made in Europe. Contributions are made by every province of Canada, from Nova Scotia and New Brunswick to Quebec and Ontario, and even by Manitoba and British Columbia, the greater part of the exhibits having been collected under the direction of the Canadian Government by Professor William Saunders of the Western University, London, Ontario, who has taken a keen interest in Canadian fruit culture. From Ontario and Quebec excellent specimens are shown of the varieties of Apples mostly shipped to British markets, while an excellent display of vegetables and outdoor Grapes is made. The Nova Scotia display comprises some fifty varieties. The British Columbia and Manitoba varieties are also interesting as coming from parts of the Dominion but little known in England for their fruit-growing capabilities. It is, moreover, important to note that the shipment of many of the early soft varieties now shown was made from Canada in refrigerators.

— APPLES are very extensively represented, over 2000 dishes, or over 15,000 fruits being shown, the varieties we mentioned last week preponderating. They are very notable for their bright colour, and in this respect perhaps they surpass the display of British produce recently held in the conservatory, but with the exception of Emperor Alexander and King of Tompkins County, there are no finer samples than were then staged. Of Pears, Grapes, Peaches, and Quinces about 300 dishes are contributed, the Pears being less notable for size than the Apples, and the Grapes are small generally. The vegetables comprise Carrots, Parsnips, Onions, Potatoes, with Tomatoes, Capsicums, Indian Corn, Gourds, Hops, and a gigantic Squash weighing 200 lbs.

— CONTINENTAL FLOWERS.—The demand for Italian flowers is increasing year by year, and season after season the inhabitants of the Riviera are planting more flowers where formerly they grew Olives and Grapes. This is particularly the case in the neighbourhood of Nice, Cannes, Grasse, and Mentone. From the beginning of November till the end of May, 1885, for instance, no less than 70,000 boxes of fresh flowers were sent away from the Nice railway station, the value of the flowers being £150,000. One of the countries which have taken a hint from Italy is Germany, which is at present diligently endeavouring to cultivate, for the manufacture of scents, &c., large quantities of Roses, Violets, Lavender, and Rosemary. The experiments have so far proved completely successful, and German perfume manufacturers are expecting in future to grow their "raw material" in their own country.

— THE first EXHIBITION OF CHRYSANTHEMUMS AT LEEDS is announced to be held on Monday and Tuesday, November 22nd and 23rd. Good prizes are also offered for groups of miscellaneous plants. The chief prize for Chrysanthemums is £5 for thirty-six cut blooms. Altogether the schedule, which is well arranged, numbers thirty-five classes, and we shall be glad to learn that the efforts of the Committee to provide a good autumn Show will be crowned with success. Mr. Featherstone is Chairman of the Committee, and Mr. J. H. Clark the Secretary.

— THE monthly meeting of BELGIAN HORTICULTURISTS was held in Ghent on the 11th inst. The members present were MM. P. Blancquaert, E. De Cock, Desmet-Duvivier, J. Hye, Moens, B. Spae, A. Rosseel, A. Van Geert, père, and Edm. Vervaeet. M. A. Peeters of Brussels, presiding, and M. Vict. Cuvelier, was Secretary. Certificates of merit were awarded for *Odontoglossum crispum* var. *de Pachó* from MM. Vervaeet & Co.; and *Calla æthiopica* fol. var. from MM. Desbois & Co. Cultural certificates for *Nepenthes Mastersi* var. *superba* from M. Al. Dallièrre; *Odontoglossum crispum* from MM. Vervaeet & Co.; and *Cypripedium Ashburtoniæ* from M. Hye-Leysen. Honourable mention was accorded for *Odontoglossum species* and *Odontoglossum grande* from MM. Vervaeet & Co.; *Warcewiczella discolor* from M. Desmet-Duvivier; *Laela Dayana*, var., from MM. Boelens, frères; *Pear Mikado*, a Japanese variety, from Louis Desmet, père; and a fine plant of *Adiantum cuneatum* from M. B. Spae.

— TOBACCO CULTURE.—Lord Harris, who has cultivated ten rods on his estates near Faversham, states that the crop has been successfully harvested. He goes on to say, "My intention had been to produce the yellow or golden colour Tobacco, but I found I could not get the house above 110° in the middle of the day, so I had to be contented with gradual drying, resulting only in a brown Tobacco. I have had no one in the trade down as yet to see my crop, so it is impossible for me to say whether my

experiment has been as successful as Mr. De Laune's, but to my inexperienced eye there is little difference as to appearance and texture between the two crops. I should imagine that it is impossible as yet to draw any comparison between our samples and any imported—say American—Tobacco, because it is evident that the latter, whatever the process of packing may be, must undergo some pressure whereby fermentation is set up; and I am inclined to think that it has been the omission of this last process which has induced people who have surreptitiously smoked English-grown tobacco to declare that it was flavourless. One thing you may be satisfied of, that no amount of ridicule, misapplied in my own opinion, will prevent this question being probed to the bottom."

— THE public CHRYSANTHEMUM EXHIBITIONS at Finsbury Park and the Temple Gardens are now open, but the blooms will not be fully expanded for a week or more.

— GARDENING APPOINTMENT.—Mr. James Hussey has succeeded Mr. J. Jones as gardener to T. C. Garth, Esq., Haines Hill,

— THE LIVERPOOL EXHIBITIONS.—We are informed that two gold medals have been awarded to Messrs. Sutton & Sons, Reading, one of these being for their extensive exhibit of seeds, grasses, &c., in the Main Exhibition Building, and the other for a magnificent display of horticultural produce, seeds, and grasses in growth at the Royal Horticultural Society's Great Provincial Show in the adjoining Wavertree Park on June 29th and following days.

— THE schedule of the LIVERPOOL AUTUMN SHOW, which is to be held in St. James's Hall on the 23rd and 24th ult., contains sixty-three classes—twenty-four for Chrysanthemums, nineteen for miscellaneous plants, &c., and twenty for fruit. The chief prize for Chrysanthemums is a silver vase, value 10 guineas (given by Messrs. J. Williams & Co.), and £3; second prize £7, third prize £5, and fourth prize £2, which should, and no doubt will, insure a splendid display. Prizes of £3, £2, and £1 are offered for six stove and greenhouse plants, the same amounts being provided for twelve dishes of fruit; and "specimens may be exhibited from any part of the world, and by any person." Mr. Edward Bridge is the Secretary.

— AT the recent meeting of the WAKEFIELD PAXTON SOCIETY, held at their rooms at the Saw Hotel, Mr. A. Willis read a clever and interesting paper in reference to the "Properties and Functions of Starch in Vegetable Economy." Mr. J. Fryer presided. Mr. Willis, in the course of a very able address, pointed out that although the term starch was popularly connected with the work of the laundry, yet its function in Nature was far removed from the common-place character which that association implied. The constitution, the development of starch granules within the vegetable cells, and the chemical changes which it underwent in the process of nutrifying the growing plant, were clearly explained and in conclusion Mr. Willis exhibited under the microscope numerous samples of starch, showing characteristic diversity of form. The hearty thanks of the meeting were accorded the essayist, on the motion of Messrs. Winter and Gill.

— "A YOUNG BEGINNER," writing from Hampshire, desires to thank Mr. Molyneux for the information on CHRYSANTHEMUM CULTURE which he has given in his articles. "It has been a great help to me and I have read his instructions with much pleasure. I have now about eighty Chrysanthemums, which are very satisfactory to my employer."

— PROPOSED PARK FOR HAMMERSMITH.—A special meeting of the Hammersmith Vestry was held on Monday last to consider a communication from the Metropolitan Board of Works with regard to the purchase by the Vestry of Ravenscourt Park as a recreation ground. A sum of £50,000 has already been offered by the Vestry for the estate, but the Trustees now state that they have received a better offer. Mr. Brown strongly advised the purchase of the land, on which, he said, 600,000 persons could ramble without inconvenience. The park would be a great boon to the neighbourhood; the houses which were now standing empty would be quickly filled, and the financial condition of the parish benefited by its purchase. Several speakers complained that the Trustees had left the Vestry in the dark as to the precise sum they required for the estate. On the proposition of Mr. Cook a resolution was passed declaring further discussion to be useless until the Trustees of the estate had mentioned definitely the amount for which they would be prepared to enter into a provisional contract for the sale of the property.

— NUMEROUS letters reach us from correspondents in various

parts of the country informing us that they have been gathering RIPE STRAWBERRIES during the present month. "A few days since some fine ripe Strawberries were picked in the grounds of the Catford Conservative Club, Elmwood, by the Chairman, Mr. R. A. Morgan, and the Hon. Treasurer, Mr. W. Northover Jackson. The plant was in excellent summer-like condition, and the fruit was particularly palatable. At Canterbury a quart of ripe Strawberries, fully grown, was gathered from a gentleman's garden. In a village in the neighbourhood the fruit trees are full of blossom."

— As in previous years a CORN EXCHANGE CHRYSANTHEMUM SHOW will be held in London this season, the proceeds of which will be devoted to the Corn Exchange Benevolent Society. All the work of preparation is done gratuitously, and with the object of aiding those who need assistance through ill health or misfortune. Prizes are offered for cut blooms alone, and vary from 2 guineas to 5s. The Exhibition is fixed for November 2nd and 3rd in the London Corn Exchange Hotel, and according to rule 9, "All flowers placed in the room, whether for competition or otherwise, will be sold by auction at four o'clock on the second day of the Show, unless expressly reserved, and notice given to that effect before the Show." All entries are to be made to Mr. Henry Robins, Secretary, Corn Exchange, London, on or before October 29th, from whom show boards can be had at a charge of 1s. each. Considering the object in view, this project appears worthy of encouragement by exhibitors and visitors.

— "A LINCOLNSHIRE GARDENER" writes in reply to a question by "B." on page 339 relative to the suggested identity of BRAMLEY'S SEEDLING and WARNER'S KING APPLES, observes, "In growth the trees have some resemblance, but the fruit of Bramley's Seedling is flatter and more uniform in shape, also darker in colour than that of Warner's King, besides keeping longer, and is altogether an excellent Apple, about which there is remote fear of having too many trees."

— IN commending a well-known plant, THE MARSH MARIGOLD (*CALTHA PALUSTRIS*), a South Wales correspondent remarks that it is "one of the finest yellow flowers for beds of herbaceous plants. Six years ago we planted in our kitchen-garden borders a number of Calthas, and these have now become large masses. They flower in May and June, producing a charming effect. The flowers appear on many main stems and then branch out into many more, until the stems represent huge clusters of large, half-globular blooms, perfectly double, and of rich golden yellow colour. It is most easily cultivated, only needing ordinary garden soil."

REVIEW OF GRAPES.

"EXHIBITOR" (page 346) asks me to show in what way the leading shoot of a strong young Vine, the wood of which appeared to have been thoroughly ripened last year, and a weak lateral that appeared not to have been so well ripened last year, could contribute to the production of a bunch composed of globular berries having the colour and bloom of a Gros Colman Grape in one case and the colour and bloom of Gros Maroc in the other.

Readers of the Journal will remember that the above question has reference to the two bunches of Gros Maroc exhibited by Mr. Taylor at the Crystal Palace Show on September 3rd, and on the following Tuesday at Kensington. The inference I draw from "Exhibitor's" question is, that one of the bunches was a Gros Colman and the other a Gros Maroc. In this assertion he appears to fortify himself by saying, "several skilled gardeners are of the same opinion." If "Exhibitor" is correct in what he and "several skilled gardeners" assert, it is strange that the same two bunches should pass as one variety in the censorship of the Fruit Committee of the Royal Horticultural Society at South Kensington, and thereby confirming the decision of the Judges at the Crystal Palace Show.

"Exhibitor" admits that "the ripeness or unripeness of the wood has a good deal to do with the production of compact or loose bunches," but he says he has "yet to learn that properly ripened wood is instrumental in the production of round-berried Grapes instead of oval-shaped ones." Having admitted so much, I would beg him to go a step further and see if the ripeness or unripeness of the wood has not a great deal to do with the shape and formation of the berries as well as the bunches.

For example, take the well-known Black Hamburgh: if the wood of the previous year's growth has been badly ripened, the bunches are invariably long, straggling, and ill-conditioned, and if the root-action be at all feeble the berries are usually found to be more or less ovate or oval in shape, and covered with a smooth skin. On the other hand, where the wood has been thoroughly ripened, and the roots in vigorous action, it will be found that the bunches are compact, footstalks short, and skin hammered, in many instances to such an extent as to make the hammered ones appear quite a distinct variety from the other. As this is indisputable

in the case of Black Hamburgh, why not so with Gros Maroc and many other large-berried varieties?

"Exhibitor," several skilled gardeners, and "competent judges" have evidently got mixed on this question. In one part he tells us the larger of the two bunches was, in their opinion, a Gros Colman, and upon a comparison with several stands of unmistakable Gros Maroc it was found that not one of them resembled Mr. Taylor's small bunch, "though they all more or less resembled the large one." How does "Exhibitor" reconcile this with his former assertion that the large bunch is clearly a Gros Colman, while the name of the small one was not disputed? If he, "skilled gardeners," &c., had taken the trouble to compare these bunches with those in the class for Gros Colman, taking particular notice of the back of the berries and footstalks, they would have had no difficulty in arriving at the conclusion that Mr. Taylor's large bunch was not a Gros Colman.—JAMES MCINDOE.

ERRATUM.—In my remarks under the heading "Review of Grapes," at page 346, a clerical error has crept into the middle of the second paragraph, which, after the words "Mr. Taylor's excellent collection," should read, "Not one bunch of which resembled that gentleman's large (doubtful) Gros Maroc bunch, though they all more or less resembled the small (unquestionable) one of that variety," and not as printed.—EXHIBITOR.

WATERTIGHT ASHPITS.

I HAVE reserved Mr. Bardae's interesting essay on heating till I have more time to study it, but as Mr. Burton asks for the opinions of those who may have had watertight ashpits in operation I will give my experience.

I have had two such ashpits in use during the past three years, and they are so satisfactory that I purpose, when they are required, to have others made in the same way. The boilers are of moderate dimensions, each capable of heating 3000 feet of 4-inch pipes. Each ashpit holds probably about eighteen gallons. There is a tap in the stokehole to which a piece of hose is attached, and by this means the supply of water is easily replenished. When a strong fire is kept going, the ashpit is filled when making up the fire between nine and ten o'clock at night, and the water is seldom all dried up by six in the morning. As far as I can see, the bars at present are no worse for the three years' wear, and are as straight as when first placed in position. Abundance of clinkers are formed of course (unscreened coke is the fuel used), but I have never known one stick to the bars.

I have an idea—and this would be an interesting problem for your young scientific readers to solve—that the presence of water in the ashpit enables us to do with a smaller amount of draught than we otherwise should require. Certain it is that after getting up a good body of fire in the evening, we close the ashpit doors entirely for the night, and it is very seldom the temperature of the house is too low in the morning. The theory is that the steam supplies to a great extent the oxygen necessary for combustion.—WM. TAYLOR.

NATIONAL CHRYSANTHEMUM SOCIETY.

THE first meeting of this Society's Floral Committee was held on Wednesday October 13th in the Royal Aquarium, Westminster, and although there was not a large display of Chrysanthemums several good collections and some excellent novelties were staged. The most important contribution was a very handsome group from Mr. N. Davis, Camberwell, which included healthy well flowered plants, tastefully arranged, although they would have looked better if a little more space could have been allowed them. Especially noteworthy were the plants of La Vierge, dwarf, compact specimens, bearing numerous large pure white blooms, admirable for decoration. Another useful variety that was also well represented was Mrs. Cullingford, with considerably smaller flowers but pure white, and produced in great numbers, one freely grown standard having a grand head of blooms. The variety Mdle. Lacroix was in capital condition, and, with the two others already named, makes a trio of good white early flowering varieties for the conservatory or cutting. The dwarf early free flowering Roi des Precoces was notable for its bright red colour; Mons. Cossart, bronze yellow; Mons. Moussilac, and others were also well represented. A bronze medal and vote of thanks being adjudged for the group by the Committee. Mr. W. E. Boyce, Archway Road, Highgate, had a collection of cut blooms of forty varieties, all very fresh and bright, the sorts shown being mostly early flowering Japanese and Pompons. (Vote of thanks.) Mr. Mardlin exhibited from Finsbury Park a bloom of Comte de Germain of great size, about 20 inches in circumference and correspondingly deep. Mr. H. J. Jones, Hope Nursery, Lewisham, was awarded a vote of thanks for cut blooms of Pynaert Van Geert, Fiberta, Mrs. Cullingford, and others. Mr. Owen, Maidenhead, had some of his beautiful varieties of Chrysanthemum carinatum; one named superbum, with a black centre, surrounded by a yellow ring, and a white margin, was very pretty.

Certificates were awarded for the following varieties:—

Chrysanthemum Miss Stevens (G. Stevens).—A seedling Japanese, raised at Putney. It is a beautiful variety of great promise, the blooms large and full, of a clear pale mauve colour, very delicate. The florets slightly flattened and long.

Chrysanthemum Carew Underwood (Beckett).—A distinct dark bronze sport from Baronne de Prilly, obtained by Mr. Beckett of Elstree, but now in the hands of Mr. N. Davis. It is exactly the same style as the parent, but is readily distinguished by its colour, a fine bronze hue with a reddish tinge.

Chrysanthemum Mdle. Elise Durdans (W. Wright and N. Davis).—A large Pompon of most symmetrical form, like Model of Perfection, pale pink in colour.

Chrysanthemum Miss Alice Butcher (N. Davis).—A bronze red sport from the well known early Pompon Lyon, the blooms of good size, the florets finely edged with yellow; very free and of good habit.

Chrysanthemum William Holmes (N. Davis and G. Stevens).—This was certificated on the previous day at South Kensington and described in our report. It is an excellent October Japanese, of good substance and rich colour.

VIOLAS FOR BEDDING.

THE spring and summer of the present year were adverse to the general culture and well-being of bedding Violas. The dry harsh winds of spring, the almost total absence of rain, the cold nights with nipping frosts, which lasted even into the summer term, checked the progress of many plants. For years past I have been a strong believer in autumn planting of Violas, a system which if followed out will bring about the most satisfactory results on almost any well enriched soil. It matters little whether the Viola is sited on stiff or light soils. It has this season suffered to a very considerable extent, and in many cases ended in the absolute collapse of the plants, a collapse which is remarkable for the suddenness with which the plants are seized. Constitution should be one of the first considerations of the florist before sending out new varieties, since this is of far greater moment than a flower of sterling merit, and which needs such precise conditions and soils, together with frequent rains and a partially shaded position to bring it to perfection. This is not the plant the masses are searching after. I am strongly in favour of autumn planting to secure the best results, and at the same time permit the Viola to do justice to itself as one of the most floriferous of all bedding plants. I have also spoken in respect of stiff and light soils. In the event of a dry season both are bad, but the stiff one is decidedly the worst, and the losses much greater than on light soils. I have worked in gardens where soil, while being excellent for brickmaking purposes, has proved fatal to the culture of the Viola in spite of anything which could be done to prevent it, and in which such magnificent varieties as *True Blue* and *Lord Darnley* have succumbed by scores, due in a great measure to the great chasms which are always apparent after a few days scorching sun, which, while forming an incessant drain to the plants, not infrequently leaves a great many roots fully exposed to sun and air. In such soils the hoe is of little use, as the soil become as hard as any ordinary roadway, and when at last rain comes it is swallowed up in the fissures. In such a case as this, knowing the character of the soil with which you have to deal, the only remedy is to give a good mulching early in the season, and not wait till the danger is near at hand. The difficulty to be encountered in light soils, though not so great, is anything but easily overcome. It does not crack with heat, but it becomes dust dry for several inches deep unless steps are taken to prevent it. That such difficulties are to be overcome I have this season proved beyond doubt, much to the surprise of those who have seen them, while the results have been highly gratifying.

Owing to the especial circumstances of my case my collection of Violas was only obtained in the spring of the present year from Mr. William Dean of Walsall at a date much later than I have planted before. Owing therefore to the lateness of the planting time, and also to the fact that I am situated on a very deep bed of gravel, which rendered the soil particularly dry, and further not having any shade upon the place, I was for some time dubious of attempting their culture. The plants I received were sturdy well-rooted cuttings; and now comes the planting. The soil I have to deal with has for the last fifty years been a pasture, and one which, according to the older heads in the district, a load of manure rarely entered. Two years ago this was broken up and trenched. It is a soil easily worked, but remarkably hungry and poor. A farmyard close at hand forms the *dépôt* for procuring manure, and the only kind I have used is cow manure. I selected this in particular, consequent upon the cooling nature of the manure, and from the abundant moisture it contained when dug in the ground. Of this manure I gave a good dressing—i.e., four or five barrowloads to beds 6 feet wide and about 36 feet long. During their earlier days I used the hoe frequently and deeply, the value of which it is impossible to over-estimate, and this, with occasional waterings, soon set them growing vigorously. Growths were sent up abundantly from the base of the plants, a highly satisfactory sign, and in about four months from planting I had large handsome patches, from which many hundreds of blooms were taken. During the dry weather I adopted a simple plan of mulching. The material I have employed is the dying tops of *Narcissi*, and had I not this I should find its equivalent in some other light chaffy material, as, e.g., freshly cut grass.

But while I have said so much of the general treatment I have adopted, I would not infer that all the varieties of which I am possessed have grown equally strong and flowered with uniform freedom. To have this a series of years must elapse for trial, keeping in view the one great starting point of constitution, continually discarding weakly growers and growing those of vigorous habit. It might form a fitting summary to these remarks if I give the successes and failures of my collection during the present season, and in doing so I will ask the reader to remember that they are sited upon a deep subsoil of gravel, and were very late planted into the bargain.

First, then, I will deal with those which I have succeeded, which happily are in the majority, therefore it is with pleasure I am able to record their worth for general decorative purposes. Of all the white-flowered varieties known I place *Countess of Hopetown* at the head of the list. It is simply exquisite both as regards form, purity, vigorous habit, and freedom of flowering. I am not saying too much when I state that it is possible to produce its well rounded flowers fully

3 inches across. It has not the shadow of pencilling in any flower I have seen, and has been continuously in flower. Next I place *Lady Polwarth*, a flower of similar form, and equal in vigorous habit, freedom, and purity. In this variety, however, the giant size of the first is not forthcoming, in other respects it is grand. The third place I give to *Mrs. Gray*, whose constitution and freedom of flowering is equal to any, while its fragrance is unique. In age the flowers assume a bluish tinge; in its prime it is the purest white of any, and possesses the true type of the Viola, has a good long stalk, which adapts it for cutting, and is of good substance. If a fourth white is needed I give that place to a variety called *Jeffrayana*, a good grower and very free bloomer. The flowers are large and pencilled with violet. The white-flowered varieties I have named are a great advance upon such varieties as *Champion*, *Pilgrimage*, *White Bride*, *Lady in White*, and so forth. Among the yellows my very best is *Ardwell Gem*; it is a beautiful soft sulphur in the upper portion of the flower, while the lower parts are of rich light canary. As a first-rate bedder, a good grower, not a single plant having failed, and free bloomer, it is all that we can desire in the light yellows, and one to which I shall give considerable attention.

In the purples I have two excellent varieties in *Cliveden Purple Compacta* and *Queen of Purples*; both are of a rich purplish plum, but possessing distinct shades, and of different habit, the latter being of dwarfer habit than the former. Both kinds are simply grand and smothered with flowers. In rich violet *Archie Grant* stands out alone and unequalled in many ways. It is of bold sturdy habit, the flower stalks fully 6 inches high, and possessing a vigour very far in advance of any in its colour; indeed, in this particular it outdistances any other Viola. The colour is rich and telling, and commands attention at first sight. Another very distinct and striking sort is *Countess of Kintore*, in fact it is a marvel on account of the remarkable and unique combination of colour. The colour is deep bluish purple with a broad bordering of white, which produces a wonderful effect; happily, too, it is among the very best growers, and a good continuous bloomer, and that such a sterling flower should find a ready sale follows at a natural consequence. In blue the very best is *True Blue*, a variety as remarkable for the profusion of its flowers as for its general qualities of endurance. I have no other which can in any way compare with this gem; in a mass it is simply grand and most effective, and where it exists no other blue need there be. For a somewhat new shade of colour we may turn to *Mrs. Chas. Turner*, a lovely variety of sterling merit, with flowers of an exquisite shade of mauve purple. It is very compact and most profuse, and one which no garden should be without. In the variety *Elegans* we have a pleasing shade of light lilac or lavender, which renders it very distinct; though hardly as free as those I have previously named, it is very effective and valuable as a whole. *Queen of Lilacs* is a very free and profuse bloomer, with large flowers and vigorous constitution. It makes an excellent bed, and is well adapted for large borders or as a belting to a shrubbery. The last I shall name of the successful ones is *Columbine*, a well known kind, possessing a good constitution, and free and profuse in its flowering, the ground colour is white. For the rest I will ask the reader to conceive a purple and scarlet-flaked *Carnation* in mixture, and a good idea of this Viola will be secured. I have many more good varieties, but these are a selection of the best. Of the failures, my most conspicuous are *Lord Darnley*, a seedling from *Holyrood*; *Golden Queen of Spring*, seedling from *Queen of Spring*, a grand flower in some seasons, but too weak to withstand the excessive heat of others; and *Paragon*. This, however, has had a number of flowers, but not of the usual size. I shall, however, give these a further trial, and see what can be done by autumn planting. I may add, in conclusion, that the key to the successful culture of Violas is early planting, and if your Violas are ready when the ordinary bedding plants come off, plant them out at once in good rich soil, and you will have your reward in spring in abundant flowers.—E. JENKINS.

ONION-GROWING AT CULZEAN CASTLE.

WHEN on a short horticultural tour in Scotland recently, I saw some wonderful examples of Onion culture at Culzean Castle, the Ayrshire seat of the Marquis of Ailsa. Mr. Murray is well known as one of our foremost Grape-growers, and in Onion-growing he has few rivals, at least I have never seen any to equal those he had at the end of last August. Sometimes a few dozens are seen that have received special treatment, growing to a large size, but here are whole breaks of them, and of enormous size. I measured one 17 inches in circumference; and in a letter before me from Mr. Murray in answer to inquiries about the size of bulbs when fully grown, I am informed he measured one 19 inches in circumference, which weighs 2 lbs. 1½ oz., and that he has had six bulbs which weighed over a stone. I may add that they are spring-sown, and what may interest some of your readers at the present time is the fact that they are grown on ground which is trenched two spits deep every year. The variety, we believe, is a seedling raised on the place, and not yet in the hands of the public. It is a beautiful shaped bulb, and though growing to such a great size is an excellent keeper. While speaking of seedlings it may be mentioned that a new black Grape is being grown in the vineries, and which struck me as possessing more than ordinary merits. The bunches were small, as the rods were weak, but the berries large, round, or inclining to oblate in form.

Before leaving these beautiful gardens we must mention the erection since our last visit of one of the prettiest summer houses we have yet seen. It occupies a vacant space between a range of vineries and a large greenhouse, and in front of a large and beautiful rockery. It is built in the form of an oblong. The roof is covered with Heather, and projects

as to form a spacious verandah supported by rustic pillars formed of Spruce trunks. Suspended from the roof are ornamental pots and baskets filled with flowering and foliage plants, the whole forming a highly ornamental and pleasing picture. Inside, the furnishings are equally elaborate and chaste in design. Chairs, tables, cupboards, and window curtains are very pretty and neat, and of curious workmanship. It is heated by two rows of hot-water pipes, 3-inch, which tend to make it a comfortable and pleasing retreat in winter as well as summer. Not the least important part of its furnishings consists in an assortment of the most popular works on gardening. The whole was designed and the work executed under the personal supervision of Lord Ailsa, and he certainly deserves great credit

their specific name. I believe *P. Hookeri* to be simply the Oriental form of *P. Rhæas*, but as I have never been able to get *Hookeri* certainly true I cannot be certain as to its identity; anyway they are very near relatives. This is the history of my 'Shirley Poppies.' In 1879 I found a bunch of (as I then thought and still think) *P. Rhæas* growing self-sown in a desolate part of my garden. Amongst them was one only flower (as far as I noticed) with a white edge. This seed pod I saved and sowed in 1880, and had several white edged and some pale red (almost pink) varieties. Next year I got true pink, and since then by careful selection each year I



Fig. 55.—SHIRLEY POPPIES.—VARIETIES OF *PAPAVER RHEAS*.

for the good taste displayed in every part of this pretty summer house.—VISITOR.

SHIRLEY POPPIES.

A COLLECTION of Poppies was shown at the meeting of the Royal Horticultural Society on July 13th this year, which attracted the admiration of many visitors, and the Floral Committee awarded the exhibitor, the Rev. W. Wilks, Shirley Vicarage, Croydon, a vote of thanks and a cultural commendation for them. They were shown as seedling varieties of *Papaver Rhæas*, and were remarkable for their varied hues, chiefly scarlet and rose, edged with white, or lighter in the centre of the petals with darker zones and lighter tints, some fading to nearly white, others very rich and dark. Some of the horticulturists present at the meeting considered them forms of *P. Hookeri*, but in reference to this the Rev. W. Wilks writes as follows:—

"I call them 'Shirley Poppies,' as there seems so much doubt as to

have obtained what were shown at Royal Horticultural Society and a number of other variations from purest white without one speck of colour down to deepest orange scarlet crimson. I have this year (1886) obtained a new break, I hope in an orange salmon, and I hope through it to obtain yellow before long. I have also tried hybridising 'Shirley Poppies' with *P. nudicaule*, but the result is as yet doubtful."

VINES AND GRAPES.

YOUR correspondent, "Experientia Docet," contributed an article on the above subject a short time since which has been much discussed about here, not from any want of confidence or doubt about the system of pruning which he advocates, but it happens to meet the case of several gentlemen who possess what are termed greenhouse vineries, where the aim and pride is to grow a crop of Grapes in summer and store their bedding and other plants during winter. The restrictive or spur system of pruning has not answered in their case for I am told that in one house there has been no Grapes worth the name for four seasons. Of shoots there are plenty, most of which come barren and weak, the foliage

healthy but small; while in the other houses which I have seen there is not half a crop. What branches there are come very small, the foliage is healthy, and the wood of fair size and ripening off well; but, as your correspondent states, from the fourth bud and onwards to the extremity of the shoot the buds are three or four times the size of the one nearest the main rod. Such buds, if ripened firmly, may reasonably be expected to have stored sufficient nutriment to produce fair bunches of Grapes; at all events, it is not difficult to try the two systems of pruning, and I should not be doubtful of the result, yet if I had my own way I should not hesitate to adopt the semi-extension plan, and prune to a good bud, ignoring the spur system in such cases as those I have stated, where a gardener is not regularly employed; and there are hundreds of places about the country similarly situated with regard to their Vines, where good and sound judgment is required to manage them properly.—THOMAS RECORD.

THE CHRYSANTHEMUM OUTLOOK.

As the coming campaign of the great autumn favourite approaches, interest in the condition of the plants and probable character of the blooms deepens. A brilliant season is generally anticipated, and grand blooms expected in consequence of the well-ripened growths following an unusually bright autumn. It is just possible, however, that the abnormally hot weather during the early part of the present month may not have been the most suitable for all growers and all plants. Not a few blooms, and these, of course, the "best," may be forced out too early and lose their freshness before the "day" comes on which it is desired to stage them. Complaints of "hard centres" are, moreover, somewhat frequent, and scorched florets not unknown; but it is just within the bounds of possibility that these evils are in some cases intensified, if not mainly caused, by too generous feeding at a critical time. Much good is done by such "chemicals" as sulphate of ammonia, for instance, when rightly applied; but it is none the less true that very decided injury follows its injudicious use, more especially to the Japanese varieties, the roots of which are, as a rule, more tender than those of the incurved section, and once "brown" the roots by an overdose and drooping foliage and withering florets will inevitably follow when the sun shines bright. Perhaps brief notes on a few collections of Chrysanthemums may not be unacceptable at the present time to readers of the Journal, so many of whom are cultivators and admirers of well-grown plants and blooms.

ST. JOHN'S ROAD NURSERY, PUTNEY.

Mr. G. Stevens not only grows Chrysanthemums extensively, but has raised and introduced some excellent varieties. He is alike a raiser of plants for distribution and grower of blooms for market. His small nursery, being close to Putney station, is easily reached, and from the present time onwards four or five large houses will be gay, for hundreds of blooms can be cut without sensibly affecting the display. Five thousand plants are grown here, of which a thousand are of Elaine, and fine strong plants they are, with "fat" buds and rapidly expanding blooms. But a "fog" has already been cruel to Mr. Stevens, and a few of the early blooms were injured on the hot bright day succeeding. His incurved varieties promise to be even better than usual, and the Japanese about the same in character as last year. Miss Stevens, the new delicately tinted and fine new Japanese variety that was recently certificated, is fast fading, and it is only necessary to say that the plant is a good grower, attaining a height of about 6 feet. Maiden's Blush, certificated last year, has been in great demand, and it is satisfactory to observe that it is one of the most sturdy and vigorous in the collection. Martha Harding is one of the brightest and most useful, reddish yellow, a full and attractive bloom. Mr. Stevens regards this as one of the most serviceable, giving fine blooms early and late in the season. Mrs. G. Stevens, old gold colour, is extensively and well grown in 5-inch pots for margins to groups and other appropriate decorative purposes. Madame Lacroix is charming by its purity and full handsome blooms, and in rich companionship is the new and beautiful William Holmes, one of the most effective October varieties yet raised, and will probably find its way into most conservatories in the kingdom. This and Madame Lacroix, well grown and arranged together, cannot fail to evoke general admiration. Mr. Stevens is a great grower of the old double white Primula, but has almost overwhelmed himself with plants, which numbers some thousands, and they have consequently overflowed from houses into frames, and it seems a pity to see them in imminent danger of destruction by frost, since if potted and grown under favourable conditions they would give a wealth of pure and lasting winter flowers.

BRISTOL HOUSE.

Situated on Putney Heath, about a mile from the station, this collection is not difficult to reach, and will be well worthy of inspection in about a fortnight. The proprietor, T. D. Galpin, Esq., intends having a "home exhibition" this year, and Mr. Harding has endeavoured that it shall be a good one. The plants are remarkable for their firmness of growth, stout fleshy peduncles and heavy buds, which foreshadow superior blooms, not a few of them probably excelling those of previous years, which is saying a good deal, when it is remembered they won one of the great cups of Kingston. The show house is a light three-quarter span structure, 50 feet long, and of adequate width for an imposing "bank of blooms" being formed. The plants range in height from 3 feet or less to 6 or 7 feet, and the varieties are well timed to be in beauty from the first week in November. Jeanne d'Arc is full of promise, and will just be in right, this being managed by topping the plants in July, and taking crown buds towards the middle of September. Those taken in August are

too early, and late blooms from terminal buds small. It may be stated that this house is devoted to Tomatoes in the summer, and as soon as the Chrysanthemums are over the space will be occupied with Tea Roses, splendid bushes, grown in 16-inch pots, now hristling with buds. This is what may be termed profitable culture—Tomatoes in summer, Chrysanthemums in autumn, and Roses in winter and spring—an excellent idea admirably carried out. Of the Chrysanthemums now open in another house the bright and elegant Agreements de la Nature is particularly attractive, what may be termed "second row" blooms for exhibition, and beautiful for conservatory decoration. Madame Lacroix is extremely fine; half a dozen blooms on a plant; Flamme de Punch, large and bright; Mons. Desbrieux, rich, a magnificent bloom; and Marguerite Marrouch, unusually fine. But of especial interest and great promise is a buff rose-tinted sport from Baronne de Prailly, which originated here last season, of which Mr. Harding has now many plants. It will in all probability prove a distinct acquisition, but whether Mr. Beckett's sport from the same variety certificated by the Committee of the National Chrysanthemum Society last week is identical is an interesting point to determine, as should this be the case it will be another instance of the same variety sporting for the first time in two places in the same year. Everything in this not large garden is done well, and among other things was noticed what is certainly one of the finest trees of Dryden Nectarine in the kingdom, a variety of which Mr. Harding speaks in terms of the highest praise. It is one of Mr. Rivers' seedlings not yet widely known and cultivated.

DOVER HOUSE.

Dover House, Roehampton, the suburban residence of J. S. Morgan, Esq., is only a few minutes' walk from Bristol House. The gardens, which rank amongst the best kept in the kingdom, are under the skilful management of Mr. Forbes. Indications of wealth are very apparent here, and not less so its judicious application. The highest order and utmost cleanliness prevail indoors and out, and the various and extensive glass structures are well occupied with Vines, fruit trees, Tomatoes, and plants. Chrysanthemums are remarkably well grown, blooms being produced worthy of a place in the best competition; but this is not the object of the proprietor. A large light span-roofed house is now filled with plants, arranged to slope from the centre to the two sides, and from the end to the door; and as the majority of these are in full bloom the effect is very imposing. As these fade others will take their places, and a prolonged display maintained, about 700 or 800 plants being grown for this purpose. One of the richest is L'Isle des Plaisirs, velvet crimson suffused with gold, broad flat florets, and very telling. Wonderfully broad petalled and fine are blooms of Mrs. G. Rundle, while Madame Lacroix and the following, among others, are bearing splendid blooms:—Japanese: Val d'Andorre, Bonquet Fait, Elaine, Mons. Tarin, Comte de Germiny, Margot, Chang, James Salter, J. Delaux, and Madame de Sevin. Incurved: Beverley, Mr. Bunn, Lady Hardinge, Jeanne d'Arc, Refulgence, Lord Derby, Prince Alfred, Emily Dale, Venus, Empress of India, and Mrs. Dixon. The foliage is dark, thick, glossy, and clean, and altogether the display is worthy of the excellent garden in which it is produced; more need not be said.

ROEHAMPTON HOUSE.

Adjoining the grounds of Dover House is this, the residence of the Countess of Leven and Melville, a fine old mansion overlooking delightful and well wooded pleasure grounds, in which some grand old Cedars of Libanon are conspicuous ornaments. Mr. Berry has been the head gardener at Roehampton House for upwards of twenty years, during which time he has proved a formidable competitor at many Chrysanthemum shows and the winner of numerous prizes. But ardency for exhibiting wanes with advancing years, and he is now one of those Chrysanthemum veterans, though still in his prime, who content themselves with showing if they happen to have creditable blooms at the right time, not moving the plants from house to house for retarding or advancing to "bring them in" on a given date. His plants are now mostly arranged in a conservatory, not in the form of a sloping bank, but sinuously, and very effective the display will be about "show time." That he will have good blooms is certain, because such strong and well matured plants are bound to produce them. The leading varieties are grown in exhibition style—that is, three or four blooms on a plant from crown buds, and the majority will be "in" early in November. In Mr. Berry's cottage silver cups are more plentiful than usual, mostly left by his relative, the late Mr. Rowe, who, with his wife, was suddenly taken away; and Mr. Berry, having made himself responsible for the support and education of some of the family, will be justified in disposing of these trophies. They do not bear inscriptions. In a case of this kind—true charity—this allusion is permissible, and societies may desire to procure small cups for prizes at a moderate cost.

Our theme may be departed from for a moment to note that Mr. Berry appears to grow Roses on the extension system—dwarfs pushing up shoots 6 to 8 feet long, which will be bent down and secured to break and produce flowers from every bud, the old or flowering wood of last year being, Raspberry fashion, cut out. That is the way to get armfuls of Roses for vase and general decorative purposes, and the reminder, for it is a good old plan, may perhaps be usefully recorded here.

DOWNSHIRE HOUSE.

This is "just over the way" from the place above named, and is the charmingly situated residence of D. B. Chapman, Esq. (gardener, Mr. Sullivan). It is evidently a much-cherished garden, and certainly well managed, houses and frames being filled with clean and well-grown plants; grounds beautifully wooded, artistically arranged, and most

agreeably diversified, everything denoting the exercise of much thought and well applied effort in the general management. It is seldom that finer plants of *Chrysanthemums* are seen than here; vigorous yet short-jointed and firm, with splendid deep green foliage, bold swelling buds, and large expanding blooms. If they "finish" well they must be fine; indeed some are fine now, the "Rundle family" being large enough for good stands, in which they are not often seen in these days of big blooms. A deep lilac *Anemone* Japanese variety, "Margaret Solleville," is much prized; Madame Lacroix excellent, Princess Beatrice of unusual depth; Refulgence, large, full, and rich; Princess of Wales, just "coming," as Mr. Molyneux would like to see; and the Royal group—the "Queen family," including the new Bronze Queen, with buds large enough for anything, but some of them not opening kindly, the centres crumpled and unyielding. This is from no lack of vigour nor enfeebled root-action, and the circumstance is not easy to account for, the hot sun of the early days of the month having perhaps had some influence in the matter. Soot appears to be a stimulant much relied on in supporting the plants, and their condition affords conclusive evidence that they enjoy the fare provided. They are strong enough without being "frothy" for developing very large blooms, but, as before indicated, the test will be in finishing them. Let us hope they will finish well, because good cultural attention has undoubtedly been bestowed in their production.

THE KINGSTON NURSERIES.

"Jacksons of Kingston," is a familiar name in the *Chrysanthemum* world, several new and valuable varieties having been distributed from this establishment, and the proprietor of the nurseries, for there is more than one, is the esteemed Secretary of the Kingston *Chrysanthemum* Society, which has done so much in inciting public interest in the flower, and in promoting high culture, as well as stimulating other societies to offer generous prizes for the attainment of the same object. Four or five hundred plants are grown in the home nursery annually and arranged in the show house, which is 50 or 60 feet long. The nature of the structure renders dwarf plants indispensable, and they are dwarf, numbers of them not exceeding 2 feet in height. This is the result of cutting down in June, and of a check the plants received after their final potting. The blooms are consequently somewhat late, and not, perhaps, quite so fine as usual; yet not a few will be good, and a bright and attractive display will be produced in the course of a fortnight or three weeks. Very good now, or promising, according to the stage of the expanding blooms, are Moonlight, a new American variety, sulphur yellow, soft and clear; Hon. John Welsh, crimson purple; Lord Byron, bronzy red; Frizou, a beautiful clear canary yellow, excellent for decorative purposes; L'Isle des Plaisirs, very rich; Madame Lacroix, John Salter, Lady Selborne, Martha Harding, and Pelican, which is expected to prove an acquisition. The value of Alexander Dufour planted out for affording a wealth of floriferous purplish crimson sprays for cutting is very apparent, the plants being dwarf, bearing innumerable small blooms, which are excellent for associating with white flowers in vases, and for other decorative purposes. Grown in this natural way Alexander Dufour is a miniature Japanese, and would undoubtedly be useful in many gardens and familiar where such flowers are in demand for decorative purposes. No one can visit this nursery without admiring the specimen Heaths of various sizes; it is wonderful how clear and healthy they are in the middle of a town, and it can only be by consummate skill and unremitting attention that this high standard of excellence can be maintained. Camellias, too, astonish by their floriferousness, a dozen buds in a cluster in many instances, and also in the axils of the leaves of the young growth. To free growth for a time, then a rather sudden check, is attributed the condition of these very noteworthy plants. A general look round the nursery adds to the pleasure of a visit to the *Chrysanthemums*. It may be mentioned that a good opening will be afforded to new exhibitors at the Kingston Show this year, some of the past prizewinners in the group classes having left the neighbourhood, and Mr. Molyneux thinks he has done enough in the "big cup" class. There will also be room to win also in the specimen plant department.

WARREN HOUSE.

Warren House, Coombe Warren, near Kingston, is the beautiful suburban residence of Lord Wolverton, whose gardener, Mr. G. Woodgate, is competent in many things besides growing *Chrysanthemums*. Of these he grows about four hundred plants, and grows them well. They are chiefly in 7 and 8-inch pots, and now arranged in three-quarter span-roofed houses, the plants ranging from 3 feet to 7 feet high, clean and healthy, with the buds unfolding kindly, and fresh well-finished blooms will probably be ready at show time. Among the more promising are Novelty, Pelican, Mrs. Shipman, Lady Hardinge, J. Delaux, Thomas Mahood, Mons. Tarin, M. Desbireux, Val d'Andorre, Safranum, L'Incomparable, Venus, Jeanne d'Arc, Prince of Wales, Margot, Marguerite Marrouch, and John Laing, most or all of which will develop good blooms, some not improbably very fine. Mr. Woodgate has never had a more satisfactory collection, and as he knows how to finish the blooms and stage them to advantage, he will almost certain be "in" in some of the classes in which he may compete. Great improvements have been carried out in the gardens and pleasure grounds by Mr. Woodgate since the acquirement of the estate by the present owner. In the summer splendid standard and pyramidal Bays are arranged on the terraces, and the Japanese garden formed and planted by the late Mr. James Veitch contains such Conifers and shrubs as are not seen every day. The grounds overlook the Coombe Wood Nurseries of Messrs. Veitch, perhaps the most beautiful in their way in the kingdom, rich in ornamental trees and shrubs, and withal in such high keeping that shrubs have been removed that obstructed the

view to what is undoubtedly a picturesque feature in the landscape as seen from the pleasure grounds of Warren House. Mr. Woodgate is to be congratulated on his *Chrysanthemums* and the gardens generally that he manages so well.

COOMBE RIDGE.

Coombe Warren was the original name of the delightful residence now the property of W. Middleton Campbell, Esq., where Mr. C. Orchard has for several years practised so successfully as a *Chrysanthemum* grower and general gardener, and where he is still engaged discharging his duties conscientiously and well. It is questionable if any cultivator in the kingdom has a more intimate knowledge of *Chrysanthemums* than Mr. Orchard has; he knows all the varieties, and has their origin and peculiarities at his fingers' ends, so to speak. He grows the plants for home adornment, and exhibits them in groups, rather than cutting the blooms for arranging in stands. He has during the past year arranged some of the best groups that have been seen at exhibitions, these groups combining excellence of culture in the plants, and a tasteful association of colours of the blooms. His plants this year in excellent condition, dozens of them not exceeding 2 feet in height, as clean and healthy as plants can be, and four to six buds on each just showing their colours. The dwarf plants are later than the tall, it being found that the blooms of the former develop more quickly after the florets commence unfolding than these do on stems 2 or 3 feet higher—a rather interesting point in culture. There will be a rich display of Cullingfordi at Coombe Ridge, and amongst others the following are advancing in a highly satisfactory manner:—Jupiter, Mons. Tarin, Martha Harding, Frizou, J. Delaux, Madame Lacroix, Henri Jacotot, Mons. J. Laing, Madame Laing, L'Ebouriffé, Madame de Sevin, and Fernand Féral. Belle Paule has shown its weakness in the buds failing to set and swell freely, and seems to be about the only faulty variety in this choice and admirably grown collection. Mr. Orchard appears to grow Apples as well as he grows *Chrysanthemums*, the gardens containing a number of model trees, not precocious pigmies, but splendid free pyramids, 12 to 18 feet high, and the fruit from them is remarkably fine. The opinion prevails to some extent among persons who fail to grow *Chrysanthemums* well that those who succeed with them above their fellows can grow "nothing else." No greater mistake can be made than that, for the possession of qualities requisite for growing these plants and blooms to the highest degree of excellence enable cultivators to excel in other things, and as a rule they do excel, so far as means allow, in whatever they undertake. This is evident in many gardens besides the one so well managed by Mr. Orchard at Coombe Ridge.

MORDEN PARK.

When the inquiry is heard, as it often is at this season, of, "How is Gibson?" it is not the health of that renowned cultivator that is the chief object of solicitude, but the condition of Mr. Wormald's *Chrysanthemums*; therefore, when in reply we say, "Gibson is looking well and strong," we mean those plants. The grower of them looks just the same as usual—always pleasant. Mr. Gibson is one of the best exhibitors in the kingdom, no one carrying his honours more modestly, and certainly no one losing more agreeably. "If a man loses," he says, "as he must expect to do, what is the use of blaming judges for not knowing better? It is he that should try to do better another year." There is a good deal of philosophy in the observation, as it is very rarely a man who loses a prize and grumbles accomplishes more than making himself uncomfortable. But to the plants. They are wonderfully fine, strong, and matured, the early ones bearing splendid blooms, and the later steadily advancing for the prize stands. If Mr. Gibson were to bestow the same pains in presenting his blooms in the best condition at the critical time that Mr. Molyneux does he would be a more formidable competitor than he is. The critical time is on the morning of the show and after the stands are arranged in position. He is, however, formidable enough for the majority, and if there is a grower in England who is content with a reasonable share of success that man is Mr. C. Gibson of Morden Park. His plants range from 6 feet to 8 or 9 feet high, and are strong in proportion, with thick but not dark foliage. Some of the blooms are suffering from damp, and those of the Queen family are not as a rule opening kindly, but have "scaly" centres. In this he is not alone, for there are plenty of other persons in the same boat. Among the more promising of the incurred section are Princess of Wales and Cherub, very fine; Golden Empress, Bronze Queen, Princess Beatrice, Le Grand, Jeanne d'Arc, Nil Desperandum, Lord Wolseley, and Barbara. Exceedingly fine in the Japanese section are Golden Dragon, White Dragon, Grandiflora, La Boule d'Or, Maiden's Blush, and Comte Beauregard, while Mons. Burnet, Fernand Féral, L'Adorable, Val d'Andorre, Thunberg, Criterion, Comte de Germiny, Marguerite Marrouch, and Madame Lacroix are developing excellent representative blooms. The "shades of evening" prevented our seeing anything else at Morden Park besides the *Chrysanthemums* and their skilful grower, but we had quite sufficient compensation for several miles drive in what our coachman described as very "regular weather"—a regular downpour of drenching rain.

THE CAMBERWELL NURSERY.

Mr. N. Davis is widely known amongst *Chrysanthemum* growers, and some hundreds make an annual journey to the Lilford Road Nursery to inspect the great collection which has gained so much fame. Each season for several years past there has been a steady improvement in the display provided there, and this season it is even more extensive than usual. Several new houses have been erected and in addition to the large show house will be devoted to the "Mums." One in particular, which has been gay with early-flowering varieties for some weeks past, will shortly be

re-arranged and filled with the late-flowering sorts to form a succession to the main display. Two other houses not quite finished will contribute some attraction another season. The chief house is a lofty span-roof structure 65 feet long by 30 wide, the majority of the plants being arranged to form a central bed, the banks sloping to each side. All the best of the exhibition varieties are represented, together with a selection of this year's novelties, the merits of which can thus be readily compared with those of the older favourites. The plants generally are dwarfer than usual, yet vigorously healthy, well furnished with foliage, and bearing buds of a most promising character. Mr. Davis thinks that Japanese varieties will be better than usual this season in most collections, but numerous complaints have been received respecting the incurved, which in many instances have hard centres and are not expanding "kindly."

Only a few of the novelties are yet sufficiently advanced to indicate their true characters, but two that appear likely to give satisfaction are William Clarke and Edouard Audiguier, both Japanese varieties. The former is remarkable for its curious colour, a kind of salmon suffused with red, the bloom of good substance. Edouard Audiguier is a very promising variety, and one that will probably be much prized for its colour. The florets are long and narrow, but the bloom is full and of good shape, the colour being an intensely rich crimson maroon. La Triomphe, near the above, is noteworthy, but its true character cannot be decided at present; it seems to be one of the hybrids, something between a reflexed and a Japanese, it has a large bloom, broad floret, and is of a rather pleasing shade of rosy purple. William Holmes, which has already received four certificates this season, is past its best now, but one handsome bloom remained at the time of our visit to show what a capital variety it is. Though not a novelty Frizou should be mentioned here, as it is a very useful bright yellow Japanese for early flowering, coming in well as a companion to James Salter and Lady Selborne, its fresh clear tint being most acceptable. The two last named are contributing to the display, as also are the rosy mauve Mons. Tarin, the bright red Roi des Precoces, the free large white Pompon Mrs. Cullingford, and La Vierge. It might be added that both James Salter and Lady Selborne are flowered from the terminal bud, as Mr. Davis finds they open more quickly and are of better clearer colour.

A new reflexed named Fulvie, of a rosy purple hue, will probably be found a good addition to the limited list of these varieties. The Pompon Alice Butcher is in capital condition, equally as free as its parent Lyon, and valuable for its fine bright reddish bronze colour. Blanche Pertuzes is a good early dwarf white Pompon, especially adapted for culture in pots, as it does not exceed 18 inches in height, compact and very free. Martha Harding, as here grown, is the same as Thomas Todman, which made its appearance two or three years since, and it is disappointing that more care is not exercised in distributing new varieties.

A great many other varieties are fast advancing, but it will be quite a fortnight before they are in their best condition.

IMPATIENS SULTANI.

AMONGST the numerous conservatory flowering plants Impatiens Sultani ranks in my opinion as one of the best. With us it is exceptionally fine at the present time, flowering profusely. For cutting and table decoration I must admit we have better plants, but for the conservatory it is most valuable, especially at this time of year. It is generally known it can be had in flower all the year round with a succession of plants; but the time it comes in most useful to us is in September and October, and I think in most establishments it will be welcomed then, as in October flowering plants are very scarce. My mode of having plants in bloom at the above-mentioned time is to insert cuttings about the middle of May. They will strike easily in any ordinary potting soil finely sifted, with a good sprinkling of sand. Place them in a bottom heat of 80°; shade from sun. When struck transfer them into 60-size pots. The soil that I find to suit them best is equal parts of loam and leaf soil, with a little sand and bone-dust added. Place them in a good steady moist heat till the plants root into the new soil, and then gradually harden them in a frame. Examine the plants at intervals to see if they want potting, as it is a great mistake to let the pots get too full of roots. The final shift is into 32-size, or 6-inch pots, the same compost as before. Place the plants as low down in the pot as possible, so as to leave room for a topdressing a little later on, the compost for topdressing to consist of a mixture of leaf mould and spent Mushroom dung, with a little sand and bones added; this last addition will greatly benefit them. Never stop the points of the plants; let them grow in their own natural way, as I think it is far the best. About the beginning of September take them out of the frame into a conservatory. Stake the plants out as they require it, as when placed in conservatory, especially in dark places, they get drawn. Keep the plants in as light a place as possible, as these flowers come a much better colour. The brilliant display they make till the Chrysanthemums are brought in will well repay for the trouble bestowed upon them.—W. ROBERTS, *Llwyngwern, Machynlleth.*

BRIEF NOTES.

OVERHAULING.—This is a subject well worthy of being brought to the front, as pointed out by "Experientia Docet" at page 311, but my motive in referring to it is to draw attention to the Vines and Peach trees now languishing in hundreds of gardens and which need attention at the roots. Many Vines and Peach trees are termed "worn out" at the time when they ought to be at the height of fertility. Many gardeners regard disturbing a Vine or Peach root as little better than sacrilege, but if they

only knew the benefit that would result from the old soil being removed from the roots, these being lifted and laid in fertile soil, they would regard it as part of their annual work. It only needs a little courage to start, and if delayed for another season it only means another poor crop of fruit. Where the borders are partly inside and out, one part could be renewed one season and the other the next, and instead of the crop being weakened the following season it would be much better. The time to do the work is as soon as the crop is off and the leaves still on. The work should be performed quickly, so all hands that are available should be employed in the work. If the border is a wide one, a trench should be cut straight through, 8 feet from the Vines or Peach trees, and the soil carefully worked out from amongst the roots. As the work proceeds these should be kept out of the way. If the drainage is out of order it should be rectified, and the roots carefully laid in the new soil as near to the top as it is possible to place them. A good watering with tepid water, and if an outside border covering a foot deep in leaves, will complete the operation.

APPLE YORKSHIRE BEAUTY.—At page 315 "A Thinker" asks for further particulars about Apple Yorkshire Beauty. It is really the old Greenup's Pippin, and which is its original name. Whilst being shown a few weeks since through the Witley Court Gardens by Mr. Austin he pointed out this Apple as of good quality and very prolific. The fruits were hanging like "ropes of Onions." The following is the description given of it in the "Fruit Manual":—"Fruit above medium size, 3 inches wide and 2½ deep, rounded ovate, broadest at the base, and with a prominent rib on one side, extending from the base to the crown. Skin smooth, pale straw coloured tinged with green on the shaded side, but covered with beautiful bright red on the side next the sun, and marked with several patches of thin delicate russet. It was discovered in the garden of a shoemaker at Keswick named Greenup." This is one of the little known Apples well worthy of extensive cultivation.

TRENCHED V. UNTRENCHED SOIL.—I do not wish to enter into the discussion between Mr. Iggulden and "A Kentish Gardener," but I can fully believe how injudicious it would be for Mr. Iggulden to trench the garden at Marston as trenching is generally understood—i.e., two spits deep, the good soil being placed at the bottom and the bad on the top, the result being poor crops. The garden that I have charge of has as stiff and unworkable a soil as any garden in this country, but yet it is not bad soil, for when any vegetable gets established they will "go." It has taken many years to get the surface into "fettle" by draining, liming, &c., and if this top soil was turned down it would take many more years to get it into order again. We do a little trenching occasionally, but it is what is termed bastard trenching—i.e., two spits deep, the good and top soil being placed at the top and the bottom turned over and improved by burned garden refuse. A great deal of the soil has been burned in some parts of the garden, and we intend to burn as much as we possibly can this winter, and with draining and liming is about the best corrective a heavy soil can have. In a garden that I had charge of in North Wales you could trench as much as you liked, as the crops of vegetables testified, but then it was an alluvial soil. In another garden "on the gravel" we had to trench (but not to bring the gravel up) and work in plenty of good soil.—A. YOUNG.

THE NON-VENTILATING SYSTEM.

ON the saving of Cucumber seed when the plants are grown on the "express system," I have but little to say, and intend to be brief. I know very little about the subject, never having put seed-saving into practice when growing Cucumbers without ventilation. The Prescott growers save their own seed, and some of them grow for sale, but not on a large scale I have every reason to believe.

Mr. Iggulden believes that more fruits can be produced without the aid of ventilation than by the old general system; there can be no doubt whatever on that point by all familiar with this method of culture. But he affirms that the plants produce more than they can perfect—his qualification of perfection I have not overlooked. In growing Cucumbers for daily use in private gardens or for the market who wants them to perfect an average number of seeds? It is not only better for the plants, but the fruit is better for use when cut before it can be determined whether they contain perfect or imperfect seed. For all purposes—except seed bearing—a Cucumber is perfect when ready for cutting on whatever principle it may be grown. My friend admits that the fruits grow very fast. Now, I have always been under the impression that the quicker they can be grown the better they are, and this is a point in favour of the practice I pointed out a few years ago. When seed is required, whatever system of culture is pursued, the plants must be given special treatment, and not exhausted by fruiting before an attempt is made to save seed. Some varieties are very shy seeders, and if every flower is fertilised a large per-centage of fruits will prove barren.

Mr. Iggulden has tried the new system, and now condemns it because he has failed. It is clear, judging from his article on the subject, that my friend does not understand this method of growing Cucumbers, and therefore I am not surprised that he failed in his first attempt. He is premature in his condemnations, and evidently did not think that those familiar with the system would discover the weak points in his method of procedure. The main contention is that it will never answer in private gardens on account of the close and constant attention that is required to carry it into effect successfully. This is one of the weak points in Mr. Iggulden's article, and displays his want of knowledge on this subject. No other method of culture with which I am familiar gives such an immunity from trouble, care, and attention as the Prescott system of culture. Why

has it been adopted by them? Simply to free them from that constant and almost hourly attention in ventilating, damping, and the attacks of red spider brought about by the varying atmosphere caused by the old practice. The only attention these growers give is liberal waterings at the root and syringing the house twice daily according to the state of the weather. The syringings given are not mere sprinkles that are dried up in a few minutes. Some of them water and syringe with a rose on the end of a 2-inch hose pipe, one end in the tank, one man pumping, and the other directing the hose. The houses are saturated, or I think the more appropriate term will be flooded. They have evidently dispelled the old notion of syringing early in the afternoon, so that the foliage will be dry by evening. They invariably give the evening "dousing" about eight o'clock. I have seen them doing it later, when nearly dark.

Evaporation, says Mr. Iggulden, is enormous, and if the house is neglected for five minutes the plants are certain to be scorched. Surely evaporation could not be very excessive with the heavy shading that appears to have been applied. Even supposing no shading is used, evaporation could not be so rapid as would be the case in a structure that was freely ventilated. To keep the atmosphere of a structure moist when the ventilators are open and the external air is hot and dry considerable attention is needed, and time required to pour water about the floor and other parts of the structure to prevent it becoming too dry. Nearly as fast as water can be poured down it is drawn out, and the soil in which the plants are growing, as well as the atmospheric conditions of the house, become much drier than could possibly be the case on the non-ventilating system. If Mr. Iggulden's plants scorched I am afraid they suffered by an insufficient supply of water at their roots and in the atmosphere. They might flag and the foliage wither by this cause, but they could not be scorched when heavy shading was employed.

I am afraid the shade employed was too heavy, and had something to do with the failure at the time stated. It must be remembered that Cucumbers require a large amount of light if they are expected to do well. They may grow freely enough under dense shade, but they certainly fail to fruit satisfactorily; or, if they do fruit heavily for a time, they become exhausted quickly. Shade for Melons is very rarely practised, why shade heavily for Cucumbers? The present growers only syringe a little whitening on the glass, and they find the afternoon sun when shining directly upon the plants is the most trying. In such cases the plants might be slightly scorched if provision were not made to prevent it, but with a southern aspect burning would not take place provided plenty of water was applied to the roots and abundance in the atmosphere. However, light shade in this position might be applied with advantage.

Perhaps Mr. Iggulden will explain how he colours his Crotons when grown on the non-ventilating principle with shade applied. Some, such as the old *C. variegatus*, *C. Mortii*, and a few others, will colour with shade, but the majority would be perfectly green. If my articles had been carefully followed your correspondent would have observed that I have from time to time advocated a very close system of treatment. I have long since regarded the favoured "chink" of air as a thing of the past. I never think of giving air to my stove from November until April or May, and very little after. Tea Roses are subjected to the same treatment from the time they are started all through the spring months. Warm Orchids have the same treatment. I cannot possibly understand the object of those who arrange the laps of their Orchid houses so that air day and night can have free access. The only object or result that I can perceive arises from such treatment is a chill to the plants and an increased expenditure for fuel. It is clear that a moister atmosphere can be maintained, and also less water is required at the roots of the plants without the use of the ventilators. This is a great advantage in the cultivation of plants in pots, for I have long since been convinced that watering daily, or twice or more in a day, as the case may be, is not only unnatural but injurious to the plants. The longer the soil in the pots can be kept in an intermediate state for moisture without applying water the more luxuriantly they grow. It is on this account that I have advocated again and again plunging the pots, covering the rim and surface of the soil if possible. I have struck Crotons and grown them by this method until they have been large plants in 19-inch pots without pouring any water into them. They were grown without air, fully exposed to the sun, liberally syringed, the atmosphere and plunging material being kept moist.

It may surprise some of your readers, perhaps Mr. Iggulden too, when I say we grew our early Grapes last season until they commenced ripening without ever opening the ventilators. We could have cut on the 7th of May, but the fruit was not required until the following week. The foliage, to all appearance, was equal to another house grown by the aid of ventilation, and they coloured equally as well, if not better. Those who maintain that a "chink" of air top and front is essential to flavour and colour can try to explain away these facts. Opening the ventilators early in the season when forcing Grapes is certainly wrong, and admits cold air into the house, causes a chill to the Vines, increases the coal bill without any return in the shape of superior Grapes.

The system of ventilating early and midseason Peach houses after they are once started, possesses no advantages whatever over keeping the houses perfectly close until the stoning period, or as long as the internal temperature can be kept within reasonable bounds. It is a very common practice to admit air daily from the time of starting, and frequently a circulation during sunny weather when in bloom, and so on through their various stages until the fruit is ripe. With us this treatment frequently resulted in a slight touch of mildew on the trees; the cause was most perplexing for a time, but was discovered to be the result of admitting air that was much colder than the atmosphere of the house. The house from

which ripe fruit was gathered in May never had the ventilators open from the time of starting until the stoning period, when a little air on very bright days was admitted at the top. If I remember rightly the front ventilators were never used until the fruit commenced ripening. What was the result of this treatment? No mildew, spider, or fly, and I think the condition of the trees was most satisfactory, for they pleased my friend Mr. Iggulden. The night "chink" of air on vineries and Peach houses at any season of the year, I mean the growing season, is, I am firmly convinced, all nonsense. The achievements that were to be accomplished by its aid, the scoldings and threatenings, and things more serious to the young men in charge, has made but few converts. The old and mysterious system of ventilation is fast dying out except with Orchid enthusiasts, who have very recently revived it, in fact, are practising it on a more liberal principle than ever advocated or practised by the leading gardeners of the "good old times." Ventilating plant and fruit houses, which perplexed me not a little, and caused me hours of anxious thought whether I ever should master the intricate details or not, I have endeavoured to make simple and easy in these gardens. For six months of the year, or, say, during most trying period of the year, we never ventilate at all except for Azaleas that we want to retard as long as possible, and in the conservatory where an agreeable temperature is required for sitting in. Even Azaleas and Camellias here make their growth during the spring and early summer months without opening the ventilators.

When plants are grown on the non-ventilation system they require a corresponding amount of light—that is, more light than if grown by the aid of ventilation. If this is not practised many plants grow too rapidly, and do not possess that solidity essential to flower them well or render foliage plants lasting under the hardships to which many of them are subjected. The majority of houses in private gardens have been wrongly constructed, but a great improvement has been made of late years. Too much attention has been paid to side lights and ventilators for houses in which to grow decorative plants. Thousands of houses erected for the purpose are not suitable. They may have cost much money, but are only makeshift places at the best. Side lights and front ventilation are not needed; a little ventilation might be provided at the top with advantage. In such houses a moist genial atmosphere can be maintained about the plants, and considerable labour in watering saved. When little or no air is given the plants do not dry half so quickly, and a good syringing or sprinkle with a rose watering can suffices for a day or two, or longer, instead of pouring water into the pots two or three times a day in hot dry weather. The plants do better because a more uniform condition of moisture is maintained about their roots.

The system of plunging plants of late years has partly died out, the method, and a good one, having been condemned because the plants were injured by careless persons entrusted with the work of watering. This is about the only argument that can be brought forward against plunging, which when carefully examined carries neither weight nor force with it. Plants do much better plunged—that is, most plants—than stood upon the surface with their pots exposed, evaporation is less, and they stand for a much longer period moist without pouring water in their pots. If there is one ruinous system of plant culture in vogue it is the laborious system of watering which can, to a large extent, be prevented by plunging the pots and the close system of culture. Few who have not practised these methods of culture can realise the ease with which splendid decorative specimens can be grown.—WM. BARDNEY.

LAVATERA ARBOREA VARIEGATA.

THIS plant, about which there was at one time some doubt as to its realising the glowing description given of it, appears to be gaining favour with many cultivators. I have seen several examples of it this season, and all are noble and ornamental plants, though some are more variegated than others. This I think is accounted for by the difference in the character or composition of the soil, but in all instances it is a most useful plant for large beds or borders, where it is a very conspicuous plant in the background. It is, however, seen at its best when planted as a single specimen on the lawn. Here it develops itself into a fine specimen, pyramidal in shape, compact growth, and well furnished with foliage, and capitally variegated. The finest plants I have seen are growing in the grounds of Southgate House, Southgate. It is there a great favourite. Mr. Osborne is the gardener there, and the way he treats it is by raising the plants either from seed or cuttings in early autumn, keeping them in store pots all the winter, and in spring pots them into 5-inch pots and grows them in these till planting out time, when suitable situations are found for them. They are treated in every way as an ordinary bedding plant. The variegation comes out best where the soil is not too rich. Some of the plants are 5 feet high and nearly as much through, stout, strong, and handsome.—THOMAS RECORD.

THE INSECT ENEMIES OF OUR GARDEN CROPS.

THE APPLE.

(Concluded from page 166.)

ALLIED to the aphides and cocci mentioned in our preceding article is the little insidious pest that, from its resemblance to a musselshell in miniature, has been styled the mussel scale, or *Aspidiotus conchiformis*. I have never seen a male and doubt if that sex has been noticed in Britain; it would be winged and a brief insect of autumn. The females are flat, curved somewhat, wrinkled, and brown or reddish brown, of course

wingless. Although it is a species occurring both on the Apple and Pear, it is seldom injurious to the latter, as the Apple is its favourite, and some varieties have been said to be specially attacked—the Wellington, for instance. This scale may swarm on the tender bark of the trunk, or cluster on the branches. In either case its colour and shape make it liable to be overlooked. Upon raising one of these scales in the spring, at the small end we perceive the shrivelled body of the parent and at the large end her progeny, some fifty or sixty eggs, which have been screened through the winter by the protective shell from the weather, partially perhaps from insect enemies. When hatched, the tiny scale, which are whitish, flat, and able to make active use of their six legs, speedily quit the shell, travelling about rapidly as they employ their suckers in extracting sap. Not many days will have elapsed before the insects begin to fasten down, and they increase in size till they become pupæ, then imagoes, parents of the next year's brood, for there seems to be but one each season. Yet it is a species capable of affecting the vitality of a tree seriously, besides greatly lessening its produce of fruit. The application of oil—linseed oil has been found best—certainly kills this scale, but the possibility that harm may be caused by it leads us to scratch this off the list of remedies, since it may prove nearly as bad as the disease. A diligent scrubbing during autumn with a dressing compounded of soap and tobacco destroys the insect speedily. Some folks prefer the slower process of covering the bark with a paste, say of soft soap, sulphur, and clay, which gradually dries and drops off. Nicotine soap is excellent, but too expensive for use save in the case of choice trees; and the solution of petroleum, already recommended for a variety of insect pests, will bring away the mussel scale if a spring appearance of the young calls for washing or syringing.

About the size of the preceding, though of habits quite different, is the weevil that attacks the blossom of the Apple, *Anthonomus pomorum*, an insect more destructive in continental than in English orchards, but it occasionally does notable damage here, and a backward season favours its increase. It is worth while to explain how this is. The female beetle is particularly fastidious and goes from flower bud to flower bud, selecting those of a certain size and fulness which will suit her progeny; the more rapid therefore the opening of the buds, the shorter is the time for the weevil to lay eggs. This may make a difference of from one week to two or more in the time this species is busy. We have to thank Koller for pointing out this fact, one at least against the theory of some country folks that late seasons are likely to be best. Should a weevil, as may happen, deposit eggs on blossoms too far advanced, the newly hatched grub generally dies for lack of sufficient shelter from sun and rain. A single egg is placed in each blossom visited, and small as the weevil is the number each female deposits is presumed to be considerable, the beak being brought into use to pierce the Apple bloom. About a week after the grub emerges, white, with a black head, and it devours the stamens and pistils, finishing on the receptacle itself, but avoiding the petals. Three weeks mostly suffice for its growth to maturity, when it changes to pupa in the flower, and the beetle or weevil is speedily developed.

Infected blossoms cannot be cured, but their removal diminishes next season's brood of enemies to the Apple, and we have to thank several of the smaller birds for their assiduous attention to the flower buds, they having a taste which leads them to hunt up this grub in the spring. Unfortunately, the grower of fruit is less grateful to them than he might be if they went to work differently, for it is certain they open a great many buds (by accident, no doubt) which are free from the weevil maggot. When the insect emerges from the bud, should it escape men and birds, it crawls about the trees for weeks, or even months, feeding occasionally on the leaves, but keeping itself much concealed, so that it is seldom noticed. The dropping of the leaves is its warning to quit the tree ere the cold nights of autumn come, and it then gets a lodgment amongst stones on the surface of loose soil, or enters cracks in rough bark, where, however, enemies still follow it, for it is hunted up by the wren, titmouse, sparrow, and other birds during winter. It has been suggested to adopt the same expedient with the female weevils that has been successfully tried in the case of the winter moth—i.e., to draw a line of tar or something else sticky round the trees, which those that may crawl out of the earth in spring will not crawl over. Those hiding under bark may most of them be removed if proper measures are taken during winter to clear away fragments and keep the trunks and branches clean. Shaking the twigs frequently at the egg-laying time will bring down some weevils, yet this is but partially of service. Something might be done possibly to keep them away from the buds by moistening

these with a liquid that would be distasteful to the insects, though not hurtful to the Apple bloom.

The lisette or purple weevil of the Apple (*Rhynchitis Bacchus*) is so named from the colour of the insect, which is golden purple when it is fully developed, tinged with blue. This is a largish weevil, nearly half an inch long. For many years past we have not been much troubled by this pest of the Apple, a later one than the preceding insect. After the Apples have attained some size the females bore holes into the smooth side of the fruit, depositing in each from one to four eggs, generally two. The grubs feed without touching the core until they are full grown, then they bring the Apple to the ground, quit it, and enter the earth, becoming pupæ, from which about May appear the beetles. It is an insect also frequenting the Plum and Cherry, especially on the Continent. Of the same genus, smaller, and of different habit, is the weevil that some call the stem-borer, in science *R. alliarie*, and if we catch one of these little creatures for examination we see that the eyes are set at the lower end of the long beak, so that they cannot be injured by its boring operations; and as to bore successfully one must have a firm hold, the feet are well equipped with pads and hooks, enabling the weevil to cling while piercing to either a rough or a smooth surface. The plan pursued by this injurious species is first to pierce a young shoot, and a hole being made, the weevil widens it next into a little chamber to make a comfortable abode for her offspring; her last act is to cut off the shoot about 4 or 5 inches from the tip, or else to leave it hanging, merely by a bit of the bark. The beetles appear in the month of June, and small though they are their steely blue colour makes them conspicuous, so they may be picked off young trees or shaken into sheets placed beneath. Where the insect occurs a careful search is advisable for all of the portions of twigs cut off, which should be collected and burnt. The formidable Apple-bark beetle of the Continent (*Xyloterus dispar*), happily for us is very rare in Britain, but it has long been observed that the bark of our trees is occasionally infested by a less, yet rather similar insect, supposed for a time to be the identical species so destructive to Elms (*Scolytus destructor*), it is now regarded as distinct and named *S. hæmorrhous*. It is minute, scarcely a line in length. The maggots feed in parties under the bark from June till the following spring. The general opinion of fruit growers who have observed it is that the beetle only attacks unhealthy trees. Other beetles, occasional foes to the Apple, need not be mentioned, but I must name the garden beetle, *Phyllopertha horticola*, a species that as larva feeds on the roots of our vegetables or on roots of grasses, and as a summer beetle nibbles the leaves of various fruit trees and even devours the just-forming fruit. Lastly, I should note that under the bark of Apple trees or in cracks we sometimes find parties of mites, chiefly of the genus *Rhizoglyphus*, much discussed in these pages a short time since as being either the cause or the consequence of canker.—ENTOMOLOGIST.



KITCHEN GARDEN.

CLEANING UP.—Our vegetable garden is fast assuming a winter aspect. The late Peas are over, Broad Beans are withered, Dwarf Kidney Beans have ripened off, Runner Beans have ceased to flower or form fresh pods, Potatoes have all been harvested, and in short affairs generally have come to a standstill; but the garden would be untidy if left in its present state, and in all cases a general and good cleaning up should be given. Pea and Bean straw never make good manure, and the best way is to burn them on the ground that they have been drawn from. Dead leaves of every description should be put in a heap to decay for manure. Where the Peas have been supported by wire netting roll this up carefully and store it for another season. Where the Peas and Runner Beans are staked pick out the best of these and put them away for another season; they do very well for mixing with new ones. If it is too damp to hoe among young crops hand-weed them, and clear away everything that is unsightly or of no further use, and the garden will soon appear interesting and pleasing again.

KITCHEN GARDEN WALKS.—Many put these in order at the beginning of the summer, but it is of more importance that they be put in order at the commencement of winter, as a low damp walk is hardly noticed in the summer; but now that there is so much rain and throughout the winter when the pathways are frequently wet, a walk in bad condition is very objectionable. They ought to be a few inches higher along the centre than at the sides, and with a high and dry ridge in the middle comfort to the feet is insured at all times. Where the walks are much

on the incline it is often difficult to prevent the gravel or ashes being washed down, and in such cases we would advise that grass walks be made. We have lately seen some kitchen gardens on the face of banks with grass walks, and they answered the purpose so well that they ought to be generally introduced into gardens of this sort. In repairing ordinary garden walks they should be picked up all over, the surface, gravel, ashes, or whatever it may be, drawn to each side, then place a quantity of rough material in the middle and replace the surface gravel.

CARROTS.—Those from seed sown some time ago should be thinned to a few inches apart. Young Carrots in autumn are almost as valuable as early ones in spring, and a patch on a south border or a frameful will be most useful during the next month or two. All the crops which are fully grown should now be lifted and stored. As a rule the roots are very good this season, and many of them are almost too large, but any which are split or not good should be put on one side and only the best stored. They may be drawn up by catching hold of the tops and pulling, or if they fail to come up in this way they may be assisted with a fork. The stems should be cut off close to the crown, and then bury them in a heap closely packed together amongst seed or leaf soil. Ashes and sawdust may also be used, but we prefer sand to any of them. They will keep well in a shed or cellar or any cool dry place of this kind.

BETROOT.—This should also be taken up and stored in the same way as the Carrots, but care should be taken that the roots are not broken in any way, as when this happens the sap escapes and the root loses much of its value. For the same reason the stems should not be closely cut into the crown, but should always be left 3 inches or 4 inches in length. The Carrots and Beet are the only roots we store at present, as Parsnips, Salsafy, &c., are better in the ground for some time to come.

HERB BORDERS.—These should be cleaned for the winter. Remove weeds and decayed growths, and give a good dressing of manure for Mint, Tarragon, and all roots with no top growths above ground. Mint is more inclined to spread than any other herb, and a small bed of it is capable of giving a very large supply, and there is no profit in growing more than is actually required, and where it has outrun its bounds it should be cut in or rooted out before the permanent roots are top-dressed.

WINTER SPINACH.—The autumn has been in favour of this, and the plants have grown very freely of late. We are gathering now from August-sown seed, but that sown in September will also soon be ready. It is a good plan, however, to thin the late sowings more than the early ones, as the plants can then develop freely without any drawing up or pampering, and this is a great advantage to them when very severe weather comes. From 6 to 8 inches is not too much space between the plants, and if they are thinned out early they will make much harder plants than if allowed to become crowded and then thinned. Where the plants are still very small the inexperienced may be inclined to think that they will never become a useful size, and hoe them up or throw them away; but if they are too late to be of use this autumn they will grow larger and prove highly useful in the spring, and plenty of Spinach in March and April is as acceptable as it is in October or November.

LEeks.—These are amongst the most useful of all winter vegetables, and although some may regard them as a coarse vegetable they are not so when properly cooked; but, apart from their value as a dish, the cooks are always glad to secure them for their soups, and a good supply never fails to give satisfaction in the kitchen. A good length of white stem is very desirable in all of them, and to secure this they must be earthen up. In growing Leeks for exhibition they are earthen up from time to time as they grow, but for table purposes one earthing is generally sufficient, and this should not be given until they are well grown, as most of them are at the present time. If earthen now they will be well blanched by December, and then they will remain fresh and good until May. Where they are grown wide apart the soil on each side of them should be banked up to the stems, but where they are grown so close together that the soil cannot be disturbed between them, a quantity of leaf soil or something of that sort should be put in between the plants and close up to the stems.

DIGGING AND TRENCHING.—Many parts of the garden are now becoming vacant, and digging and trenching should be attended to from now onwards. Turn the soil deeply, leave it rough on the surface and well exposed to the weather, and it will soon mellow and become in capital order for spring cropping. Crops grown on soil which is merely scratched on the surface cannot be compared with those grown on ground which has been deeply dug and well cultivated.

FRUIT FORCING.

VINES.—*Late Grapes.*—We have so many good varieties of late Grapes that early forcing is not by any means essential for insuring a supply of Grapes in every month of the year. They almost all, however, lack the quality of the thin-skinned varieties. No one knowing anything of the quality of Grapes will take to a thick-skinned variety, which constitutes their keeping quality, so long as a Black Hamburgh or a Madresfield Court, a Duke of Buccleuch or a Muscat of Alexandria is forthcoming. These and other thin-skinned varieties are not good keepers. It is difficult to keep Black Hamburgh from losing colour, which seems chiefly dependant on the amount of light or sun to which it is subjected after being ripe. They have to be kept in a well-ventilated atmosphere to protect them from shrivelling by too little or of damping by too much moisture. All the thin-skinned varieties can be and are kept until the new year or after, but we submit the losses from decay or other causes are considerable, and to one case of profitable keeping there is at least nine of failure. With the present system of houses that are constructed

upon no sound principles for the insuring of a regular temperature and uniformity of moisture, it is evident that the bottling system is much the best, not only for the thick-skinned but also for the thin-skinned varieties. More especially is this the case in houses that are not drip proof, and of not having large laps of glass in which the water hangs, and is driven in by wind over the bunches of Grapes, causing them to spot and decay.

There is much difference in keeping qualities of Grapes. Black Hamburghs, for instance, will not remain in good condition nearly so well ripened in a cool house or late as when the Grapes are brought to a high finish by fire heat when there is sun or light for the conversion of the juices of the fruit into, and secure a high development of the saccharine matter so characteristic of high quality and known long-keeping properties. Muscat of Alexandria is a notable example of this, for unless its berries are ripened up to an amber colour they are almost certain to spot, and worse still, to decay at their junction with the shank when the weather is damp, whilst if the atmosphere is kept dry the berries lose moisture and shrivel, never again to be restored to their former plumpness. All Grapes owe their keeping to thorough ripening under the influence of sun and strong heat. Of late Grapes we consider Lady Downe's the most valuable. It is a free bearer, and the fruit is of a quality simply unapproached in late Grapes, for when well ripened it has the Muscat flavour nearly as highly developed as in Mrs. Pince, and the keeping qualities of Lady Downe's are unsurpassed, keeping excellently up to May or even June. Mrs. Pince, if we only knew how to get the berries to ripen thoroughly and colour to the shank, would be a very great rival, indeed it would be hard to say which would win. Neither is very large either in bunch or berry, but they have quality which no other late Grapes possess in the remotest degree. Some have size, colour, and some are sweet, but they have, on the palate of those accustomed to high quality fruit, a most disagreeable earthy taste. Alicante is free from this defect, is an excellent keeper, and invariably finishes well. Gros Maroc is one of those Grapes that, after being little noticed for some time, springs all at once into prominence. Its appearance is good, and is an earlier type of Gros Colman, and in keeping qualities not going beyond Black Alicante, say February. The great merit of Gros Maroc is that of its fine appearance, and in not requiring more heat than a Black Hamburgh. For quality, West's St. Peter's, not so often seen as it deserves, is good, and though not so imposing in bunch or berry as many, it is very taking when well done, and always pleases at table those that like something in a Grape beyond appearance. It is one of the best Grapes for keeping to February.

Gros Colman is perhaps the most magnificent in appearance of all Grapes. In bunches of 4 lbs. weight, and berries 4 inches in circumference, and in its best form it is simply superb. Well ripened, and allowed time to mature, it loses much of that earthy taste so characteristic of this variety. It requires a longer time and stronger heat to finish it satisfactorily than the majority of late Grapes. Gros Guillaume is little inferior to Gros Colman in appearance. It surpasses it in size of bunch, and the berries are little less in size, and it is very much better in quality. It requires time in ripening, and shows soonest of any Grape we know the evil effects of overcropping, not only not colouring, but even not ripening. Of late white Grapes, Trebbiano is perhaps the best. It is coarse generally, but well ripened the flesh is firm, crisp, and sweet, and requires well thinning and time to ripen. Unless well ripened it is spotted next in degree, only worse, to Muscat of Alexandria; of course we exclude Duke of Buccleuch. Syrian has very large bunches, a thick skin, and ripened in a strong heat is not bad in flavour. Calabrian Raisin has large bunches, is sweet when well ripened, and the berries a good size when thinned. The raiser of a white Grape having the quality and keeping of Lady Downe's would have no further need of the blue apron. With the above or other varieties to maintain the supply of Grapes up to May, the necessity of starting permanently planted out Vines does not arise. This is a great advantage to the Vines and to the grower from an economic point of view.

Earliest Vines in Pots.—For reasons above given some Grape lovers will not take to the thick-skinned varieties, and desire sweet Grapes (Black Hamburgh) and Musk Grapes (Muscat of Alexandria) at all times. This is well understood, therefore we need only consider the case to arise of having fresh ripe Grapes in spring. In that case it is preferable to take the early supply from Vines in pots than to start the permanently planted Vines at a very early period. Vines in pots produce fruit very little inferior, if any, to that borne by Vines planted out, and often better, from the conditions of cultivation being more favourable. Especially is this the case where there is the convenience of affording bottom heat. Success in that case is certain, the canes being sufficiently strong, thoroughly ripened, and duly rested. The materials for affording bottom heat—i.e., tree leaves and stable litter, should be in due course of preparation. To begin with, the heat about the pots should not exceed 65°, augmenting it by bringing up the fermenting materials to the level of the pots, so as to raise the temperature to 70° or 75° when the Vines are in leaf. Vines in pots not intended for early forcing should be placed under cover, an open shed with a north aspect being suitable, and the pots protected with hay or straw.

MELONS.—The Melon season as regards dung-heated pits and frames is at an end. Any fruit yet remaining may be cut, they being full grown and placed on shelves in a warm house. The latest plants in houses will require a night temperature of 65° to 70°, and 70° to 75° by day artificially, advancing to 85° with sun heat. The paths and other available surfaces should be sprinkled about 8 A.M. and 3 P.M., until the fruit is full sized, when a drier atmosphere will be advisable. Cut out all superfluous

laterals, well thinning the old foliage, so that the fruit may have the full benefit of the autumn sun. Do not allow flagging for want of water, but keep the foliage healthy until the fruit is ripe, as the quality is in proportion to the health of the plants.

PLANT HOUSES.

Stephanotis floribunda.—Plants that have completed their growth should be kept moderately cool for the next month or six weeks. If the night temperature ranges from 50° to 55° this plant will rest thoroughly, provided the atmosphere is kept dry. The soil about the roots should also be kept rather dry, for they are certain to die back if too wet. The drier the roots and the atmosphere, the lower the temperature can be kept with safety, the more completely will the plant rest. This is a good time to take down the plants if trained upon wires under the roof to thoroughly clean them. If infested with mealy bug every endeavour should be made to free them during the season of inactivity. As soon as the wood and foliage becomes hardened by drier and cooler treatment they will bear a much stronger insecticide than at any time during the growing season. One of the best insecticides for this purpose is Fir tree oil, and if used at the strength recommended by the vendors it will prove effectual for mealy bug. As soon as the plant is started into growth it should be daily syringed with a weak solution. It is surprising, if persisted in, how this keeps bug from spreading. Plants that have not yet completed their growth should be in a temperature 65° at night, and the atmosphere moderately dry. Growth must be brought to a standstill as early as possible and then thoroughly rested if a good supply of bloom is required next season.

Clerodendrons.—The earliest plants of *C. Balfourianum* and such varieties have lost their foliage, should be kept perfectly dry at their roots. These plants will do well under the same conditions as advised above, but the temperature should not be allowed to fall below 55°. If placed in too low a temperature these are very liable to go off instead of starting into growth when desired. No advantage is gained by subjecting these plants to a long period of rest; it is much better to keep them under stove treatment, and supply water to the roots in sufficient quantities to prevent their going to rest as early as would be the case if water was withheld. Plants to bloom profusely in July and August next should be encouraged to grow until the end of the year, or they will naturally start into growth and flower before they are required.

Allamandas.—The earliest plants are resting, and although they will bear a low temperature for a time, they will be injured if allowed to remain in a cool house too long. To insure safety do not have a lower temperature than 50°. Successional plants may be rested by withholding water until the foliage flags. When this has taken place two or three times the branches may be pruned to within a yard of the main stems. Those intended to supply flowers until Christmas must continue growing, or else they will cease flowering in a very short time. Feed the plants with weak stimulants every time they require water. A rich top-dressing will also prove beneficial. Rest Bougainvilleas, and the treatment advised for *Allamandas* will suit these plants well.

Winter-flowering Plants.—With *Poinsettias*, *Euphorbias*, *Plumbagos*, *Linum trigynum*, and other plants that have been removed from cold frames to a light structure where heat can be supplied them, care must be taken that they do not commence fresh growth. Too much heat and too close a temperature will bring about this state of things, and destroy to a very large extent the plants for flowering profusely. The temperature for the present should not exceed 55° to 60°, and a good circulation of air should be maintained whenever the weather will allow of this being done. If a close system of treatment is followed the lowest temperature named must not be exceeded. As soon as it can be seen that the plants have not been excited into fresh growth they should receive a little artificial manure applied to the surface of the soil. This may be practised at intervals of two or three weeks until they bloom.

Tydæas.—These and *Gesneras* should have a light position close to the glass, a shelf in a warm house is a capital place for them. Care must be taken that water does not lodge on their foliage, or it will be browned and the beauty of the plants destroyed. When arranged on stages with other plants it is almost impossible to keep water off their foliage when syringing, but as a rule they are safe when placed on a shelf. A little clear soot water should be given them every time they require water, which will bring the beautiful markings of their foliage out to perfection.

Medinilla magnifica.—When growth has been fully developed and brought to a standstill a cooler and drier atmosphere should be given, or else this plant will start again into growth. A light, moderately airy temperature of 55° will suit them well, less water being given from this date until the end of the year. Well-ripened wood and a good rest is essential if plenty of bloom is expected.

Begonias.—Such *Begonias* as *B. Ingrami*, *B. nitida*, and others in very small pots may now be placed into 4 and 5-inch pots. These will make useful plants for flowering in the stove during the early months of the year. The shoots of the first-named should be pinched once or twice after they are established in the new soil; such kinds as the last named will be better grown on without pinching. These plants may be placed close to the glass and grown on steadily in an intermediate temperature. *Begonias* of the *manicata* section should have a moderately dry position, for their large fleshy leaves are liable to suffer if too much moisture is maintained about them. They may be divided into two batches, keeping half 5° cooler than the remainder, so that they will form a succession. If this is done they will maintain a supply of flowering plants for the conservatory until the end of April or into the following month.

Lilacs.—The variety known as Charles X. is decidedly the best for forcing in pots in a small state. To grow these plants well those that were budded in 1885, and have made one season's growth, should be selected for placing in 7-inch pots at the present time. The soil advised above will be suitable, and the plants should be plunged outside the same as advised for Guelder Roses. If lifted at once while the foliage is upon them they will become partially established before winter, and will start freely into growth next spring. In early spring they should be pruned back to within 4 or 6 inches of the union of the scion and stock, and the results will be growths 1 foot or more in length during the season studded with bold flower buds in autumn.

Prunus.—The variety known as *P. sinensis flore-pleno* is decidedly a more profuse flowerer than *P. triloba*, and does well on its own roots, while the last named must be budded, or it frequently fails to give satisfaction. We invariably grow our stock in pots, but if we have surplus plants they are planted outside, and such plants often prove serviceable for lifting and potting at this season of the year. These, if lifted at once, should be given the same treatment until spring as the *Deutzias*, when they may be introduced into a vinery or Peach house to make their growth.

THE FLOWER GARDEN AND PLEASURE GROUND.

Shrubs and Conifers in Masses.—Where there are several large beds to be filled, the centres of these to within 3 or 4 feet of the edges may well be filled with ornamental shrubs and Conifers. Several of the leading nurserymen prepare a number of plants specially for this purpose, and very pretty and effective they are when properly grouped. Some of the best of these are *Aucuba japonica*, *Berberis aquifolium*, *Darwini*, and *Jamesoni*, *Biotas aurea*, elegantissima, Variegated Box, *Cupressus minima*, *Intea*, *Lawsoniana*, *alba spica nana*, *minima*, and *argentea*, *erecta viridis*, *gracilis*, *Euonymus japonica* in variety, and *radicans alba marginata*, gold and silver variegated Hollies, *Junipers chinensis aurea*, *foemina variegata*, and *tamariscifolia*, round and Myrtle-leaved Laurels, *Osmanthus ilicifolius*, all the *Retinosporas*, notably those above named; *Taxus baccata* and elegantissima, *Thuja occidentalis aurea* and *Verveciana*, and *Thuopsis dolabrata variegata* and *late virens*. These are all supplied at a cheap rate, and as they move well they are available for several years. They are most effective in panels or circles divided by the more erect growers, though they also look well in mixture, due regard being paid to their respective heights so as to have a gradual slope to the edges.

Bulbs in Beds.—The various kinds of bulbs suitable for the flower beds can now be purchased very cheaply, and this is very fortunate, as they are seldom to be relied upon a second time. The most popular are Hyacinths, Narcissuses, Tulips, Crocuses, Snowdrops, Anemones, and Ranunculuses. In some instances they are solely depended upon to brighten the garden in March, April, and May, according to the season. Others intermingle them among flowering and foliaged plants, and seeing that the bulbs are the first to bloom in quantity they materially prolong the display. When planted in masses Hyacinths ought to be about 9 inches apart, but if intermingled with other plants they may be from 12 inches to 15 inches apart, and in any case not less than 3 inches deep. They may be planted at once, or not later than the first week in November, and the latter remarks, including the depth of planting, apply to all with the exception of the Anemones and Ranunculuses. The Narcissus may be planted the same distances apart as the Hyacinths, but the Tulips should be from 4 inches to 9 inches apart, the small Duc Van Thols being given the lesser distance. Crocuses, Snowdrops, and Scillas to be about 2 inches apart, and are most effective in double or trebled lines near the edges. Anemones, including *appennina*, *memorosa flore pleno*, *vernalis*, *coronaria*, and varieties, may be planted now for early flowering, or in February and March to flower late in spring. They are best planted in drills 2½ inches deep and about 5 inches apart each way, covering the roots with good sandy soil. Planted more thinly they will not cover the ground. The Turban varieties of Ranunculus are best for bedding out. Late in January or early in February are good times for planting them, and they should have a rich, deep, and well-worked soil. They may be planted 6 inches to 9 inches apart and 2 inches deep. Beds containing bulbs only ought to be either mulched with leaf soil or cocoa-nut fibre, or they may be covered with neat branches of evergreens, such as Hollies, Aucubas, tree Ivy, Laurels, Arbor Vitæ, and Box. Many of these being variegated, they can be made to brighten the beds somewhat, but the work should be done neatly. The ends being thrust into the ground, these branches will remain fresh for many weeks, and are certainly preferable to bare beds.



STIMULATIVE FEEDING IN AUTUMN.

STIMULATIVE feeding in autumn is disastrous to the bees and the sure precursor of ruin. This is my verdict upon a practice which it is hardly possible to condemn too strongly. It is antagonistic to every natural law and contrary to all economical management; it destroys the vital energy of the queen and enervates the stock; it taxes to the utmost capacity the strength of the workers and demands from the

bee-keeper a constant attention and trouble; it brings with it also, if not carefully carried out, robbing, chilled brood, and their attendant evils. In the autumn wearied nature seeks repose, and in the long sleep of winter gathers strength for the wear and tear of spring. So with the bees. The time of production is over, the period of rest at hand, and the stocks are by degrees becoming more still and quiet, when the bee-keeper comes and ruthlessly destroys this state of repose by giving dribbles of food, which keep the stock in a continual ferment.

The object of these very practical men is to get a late hatch of brood, in order that in spring, when the aged bees are fast dying out, the younger ones bred in late autumn and never having experienced hard work and death-hastening toil, may fill their places and keep up the strength of the stock until brood hatches out more freely. Now, if all this could be managed without any serious difficulty but little could be urged against a practice which would, were it not for several very serious objections, possibly be useful in practical bee-keeping. But there are several objections, and the first is that the number of young bees bred in autumn is, while large enough to tax the queen and the worker bees to the utmost, scarcely more than large enough to fill up the vacancies occasioned by the late and extra work laid upon the workers by this untimely extension of their period of work, while those which do remain are so weakened and aged that they die very many weeks earlier than they would have done in the ordinary course of events.

The second objection is that the late brood is sometimes—and unless more than usual care is taken, oftener, in fact, than many imagine—chilled by early frosts. The third, and perhaps greatest, objection of all is that a queen, when, so to speak, compelled to deposit eggs after the usual time in autumn, does not begin to lay so early in the following year, so that on considering the result of this stimulative feeding the system will hardly appear to the impartial man to be so eminently conducive to success as some would have us imagine. The result, in fact, appears to be that a slight increase in population is obtained in autumn at the expense of a weakened queen, spring depletion, and infinite trouble to the bee-keeper, and all this too at a risk of chilled brood and robbing. Add to this that not the slightest necessity for any such system exists, and the case seems clear enough to carry conviction to many.

What, then, is the alternative? It is, as I have frequently pointed out, to add driven bees in quantity sufficient to bring up the stock to the required strength. Now, in an apiary where swarming is allowed and no permanent increase in the number of stocks is required, no difficulty or expense in obtaining bees will be experienced, for if each swarm is placed in proximity to a stock the one can in autumn be united to the other, and the stock will be very fit to stand the winter. If, again, it is preferred, both the stock and swarm may be driven and the bees united and fed into a sugar fed stock; or if the hives are fitted with frames, and these contain well-built regular combs, there may be an interchange of combs, the owner keeping back for sale those which contain the greatest weight of honey, and feeding the bees with syrup for a winter provision. Either of these causes may be followed with equal success and advantage both to the bees and their master.

Whether the queen can be induced by feeding syrup to lay again when once she has ceased from doing so is apparently somewhat of a vexed question; but unless a considerable time has elapsed since egg-depositing was stayed before stimulative feeding was begun she will undoubtedly again begin to lay, so far as my experience goes, and I am not at all sure that she will in any case show any very great disinclination to resume her labour. If stocks are weak they must by all means be strengthened, but no resort should be had to so dangerous and futile a practice as stimulative feeding, which together with spreading of brood and other manipulations of a like nature has been a pitfall into which

many an otherwise good bee-keeper has dropped, and found to his sorrow that he was quite unable to extricate himself from his awkward position except by the rejection of all such practices.—FELIX.

NOTES ON BEES.

THE weather for the past two weeks here has been the most agreeable and settled during the whole year, the mean temperature being about 55°. The thunderstorms and big floods elsewhere did not visit us. Outstanding crops, however, owing to the heat and calmness of the atmosphere, were not benefited by the mildness, better if it had been more airy. Much victual is still in the stook, and owing to the break of weather (Oct. 9th) the ground is much sodden, and a leaden sky overhead does not augur well for a speedy clearance of the fields.

The bees up till to-day (Oct. 11th) have been busy and carried much pollen, being required for breeding purposes by the bees having young queens. Feeding has been very little resorted to this year, and is long since past for a season with the few nuclei not otherwise assisted. Every one of my hives unless one stand upon ventilating floors; all unless that one are dry and comfortable. That one having been fed is damp, and unless supplied with a dry or ventilating one will assuredly suffer, so will supply it with a new one at once. It is the damp generated in the corners of hives and close-fitting solid floors that is the cause of so much mortality amongst bees during the next three months. Even when pretty far advanced in the spring fed hives will then be very often damp and disagreeable. Avoid feeding if possible.

Many of your readers are aware of the great value put by some on regulating feeders and stimulating feeding, but without giving the slightest proof, unless assertions, that any good accrues therefrom. It is well known that I am opposed to any such modes of feeding, experience having taught me that non-fed hives are usually the most productive. All the queries I ever put regarding feeding in dribbles, and the advantages likely to be gained thereby, I never could elicit a single answer. For the benefit of your readers I made several experiments with hives in good condition for breeding by feeding them with dribbles. After I reduced them to a state similar to what is advised by advocates of the stimulative feeding system.

During the beginning of September, when the weather was fine, I began the experiment. The hives had abundance and more for their immediate wants, but not sufficient stores to tide them over winter. I began feeding in dribbles, and although thousands of eggs were laid not one was allowed to become a larva. During the last week of September I discontinued feeding, and filled up the hives with frames containing honey sufficient to keep the bees alive till next May. Immediately that was done the eggs were allowed to hatch, quantities of pollen were carried in, and large patches of sealed brood are now in the hive. Feeding in large quantities would have had the same effect, but I prefer allowing Nature in this respect to take its course. Keep your bees well supplied with food at all times. They are true economists, will waste nothing, and pay back a hundredfold what you lavish on them.

Some people hold strange views about bees, and feeding in particular. Lately I presented a feeder to a gentleman, who I learn lectures on bees and bee-keeping, and yet in a letter he informs me that the feeder sent him is worthless, as the bees consume too much sugar when fed from it, and was thereby expensive. I put some queries to him, but like all others they remain unanswered.

The winter will soon be upon us, and the time is fast approaching when bees will settle and do not wish to be disturbed. No time should be lost until every hive is in its winter's covering. Nothing is better or cheaper for straw or single-cased wooden hives than a hackle of straw for the sides and 3 or 4 inches of meadow hay upon the top, and over all a sheet of galvanised iron, which serves as a porch both in front and back, and projects so much at the sides that when properly fastened no rain ever touches the hive, insuring dryness, the secret of success in bee keeping. When placing the iron upon the hives let the top of the hive be slightly hollow, so that any damp rising from the bees will be immediately carried away. The hackle, too, made upon a string should reach only to the hay packing, so that feeding from above is not interrupted.—A LANARKSHIRE BEE-KEEPER.

PURCHASING HIVES AND BEES.

A ROXBURGH correspondent wishes advice on the above; also as to the best books to buy for instructing bee-keepers. If he looks to the advertisements of Messrs. George Neighbour & Sons, 149, Regent Street,

London, W., and writes them on the subject, he will get full particulars concerning everything necessary for bee-keeping. The best instruction for beginners is in the *Journal of Horticulture*. The best breeds of bees are, as a rule, crosses. My experience proves the Cyprian crosses to be the best honey gatherers. In addition to the many instances of success with these bees that I have mentioned in this Journal, I have just had notice of one I parted with a year since, which has this year given its owner 80 lbs. of super honey. The Carniolian, for its mild temper, hardiness, and assiduity, are favourites with me. They are a little troublesome when swarming, often flying a long time before settling; also liable to send off many after casts. This latter can be easily prevented by excising all royal cells but one the eighth day after throwing its first swarm. The former annoyance can be obviated if artificial swarming is performed at the right time.

The main object, however, with beginners is to secure a healthy hive of bees, having a young queen and new combs, and this is as good a time as any. Never mind what sort of hive it is, but let it be of a sufficient size, so that there will be a chance of the swarm or swarms being large enough to gather plenty of honey when the opportunity occurs. The swarms, of course, should be put into proper hives, and you will find no better than I have described in previous numbers. Upon the management of bees in these or other hives we shall be always glad to advise you. In an early number I will give directions how to make a cheap and useful hive in four or five hours' time, and at a cost of three or four shillings. This hive is similar to those I had in use between the years 1850 and 1860, and similar to those being adopted by bee-keepers generally. No other hive gave me such good returns, and none is better adapted for bee-keeping generally.

Good stocks of bees now can be had for about 15s. and upwards. Those having bees to dispose of and those wishing bees or other things could find it to their advantage to advertise.—LANARKSHIRE BEE-KEEPER.

TRADE CATALOGUES RECEIVED.

- L. Späth, Berlin.—*Catalogue of Plants*.
 William Dean, 134, Sandwell Street, Walsall.—*Catalogue of Violas and Pansies*.
 James Walters, Exeter.—*Catalogue of Roses for 1886-7*.
 J. Cheal & Sons, Crawley, Sussex.—*Catalogue of Trees and Shrubs*.
 Thomas Rivers & Son, Sawbridge worth.—*Catalogue of Fruit Trees, 1886-7*.



* All correspondence should be directed either to "THE EDITOR" or to "THE PUBLISHER." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

NAMING FRUITS.—In consequence of the absence of our fruit referee from London fruits cannot be named by him during the month of October.

Begonias (R. Owen).—We have received a box of flowers, but no letter referring to them. Presuming them to be seedlings of this year grown in the open air, they are very good and diversified in colour.

Kew Gardens (Le Gargon).—Write to the Curator, Mr. G. Nicholson, and the necessary forms will be forwarded to you. It is necessary to have had at least five years' experience in gardens. The wages are 18s. per week.

House Glazed without Putty (Ferndale).—The system of glazing you describe is certainly a ventilating one, and not calculated to retain heat. This is more particularly the case during windy weather, when the wind is driven in with such force as to cause a sudden or rapid depression of temperature. We do not advise such an open system of glazing for early fruit houses or vineries. It is not economical, and an excess of air is admitted just when it is least wanted. With proper means of ventilation, as you seem to have provided, the squares pressed on a bed of putty, and secured in position with sprigs, a great saving of fuel would be effected, and more equable temperature by artificial means, and good Grapes produced under good management. Economy is of importance, especially when it is had with efficiency.

Chrysanthemums (W. Nicols).—The quotation to which you refer was taken from the *Journal of Horticulture*, and the author of it was duly credited. If the old authors of properties of flowers were to be strictly followed, incurved blooms would be disqualified, because one condition states the florets "must not show their under sides." This, of course, refers to the reflexed varieties, which are older than the incurved. Certainly authors should be

credited with their own work, and if you will send an exact copy of the definitions to which you allude, we are willing to publish them if space permits.

Tomatoes in Frame (Constant Reader).—It is very doubtful that the cultivation of Tomatoes in the frame during the winter would be profitable or equal to your expectation, apart from the possibility of over-heating the vinery in supplying the requisite heat, 60° at night, for the Tomatoes. With free ventilation the temperature of the vinery might probably be kept down to 45° or thereabouts, and the Vines would then rest in a dry house, but in that case Tomatoes could only be had, and perhaps light crops too, with what would be practically a great waste of fuel. We do not advise you to carry out the project, though, of course, you can try the experiment if you desire to do so.

Cankered Apple Trees (A Bray Subscriber).—We have known cankered Apple trees cut down and grafted with other varieties and healthy trees result; but as those most likely to succeed are more or less robust in growth they might be too large for your restricted space, and therefore we think your second suggestion the better—namely, to plant young trees on Paradise stocks, and keep the roots near the surface by refraining from digging amongst them, and mulching in the summer to prevent the soil drying and the roots striking downwards in search of moisture. You may then expect fruitful trees, and no canker if overcrowding of the growths be prevented in the summer.

Taro or Tara (J. E., Belgium).—The word Taro is employed to signify the rhizomes of several species of *Caladium* and *Colocasia*, but especially of *C. esculentum*, which is cultivated in many tropical countries, including India, where its farinaceous rhizomes are consumed by the natives. In the South Sea Islands, particularly in Fiji, it is also largely grown, and one variety, named by the natives Kurilagi, has been mentioned by Seeman as being formerly much used in the cannibalistic feasts once so common in those islands. *Colocasia macrorhiza* has a similarly farinaceous rhizome, and numerous other members of the Aroid family are remarkable for the quantity of starch contained in the rootstocks.

Florida (A. P.).—In recent years considerable attention has been given to the cultivation of Oranges in Florida, which is said to prove remunerative. In this Journal for May 6th, May 13th, and May 27th, 1885, articles were published giving full details respecting Orange culture in Florida. Most crops can be satisfactorily grown in that State, but you will find the information you appear to require in a manual published at 30, Fleet Street, entitled "Sunny Florida," which gives many particulars concerning its resources.

Roses for Market (C. C. R.).—It is not possible for anyone to say which are the "best" varieties for all soils and districts. Those you name are good, but Climbing Devonensis, Isabella Sprunt, and Celine Forestier are not equally floriferous in differing soils and positions. We should not plant great numbers of those before proving their suitability, and we should add a few of several others, as the probability is that some of them would be found specially adapted for your soil and purpose. A. K. Williams is a beautiful Rose, though in some soils it is the reverse of a vigorous grower. Dwarf Roses may be planted 3 feet apart, or perhaps rows 4 feet asunder would be more convenient in extensive culture; and at that distance—4 by 3 feet—an acre would take 3630 plants.

Grapes for Wall (A West Surrey Amateur).—The two very best Grapes for outdoor culture are Chasselas Vibert and Esperione, the former being decidedly earlier than Royal Muscadine. Both are good growers and free bearers. Two Vines will be sufficient for covering the space, and the Vines planted 7 feet 6 inches from each end, taking a cane right and left at a foot distance from the ground, and on these originating the uprights 15 inches from the ends of the allotted space and 15 inches on each side of the stem and one midway of those, so that each Vine will have six uprights, allowing a space of 2 feet 6 inches between each. Ferdinand de Lesseps is not nearly so good as Chasselas Vibert for outdoor cultivation.

Gooseberry and Pear for Confined Space (Idem).—Neither of the Gooseberries you name is of upright growth, but spreading. Whitesmith, Red Champagne, and Whinham's Industry might suit you, these being hardy and great croppers and of good quality. Of upright-growing Pears to come in in October there is none more compact, free in bearing, or better in quality than Comte de Lamy, Fondante d'Automne, and Louise Bonne of Jersey.

Destroying Ants (A Baffled Gardener).—Try sponges clean and dry, held tightly between the fingers and thumb and dipped so held in honey or syrup, relaxing the pressure when dipped so as to allow the honey and syrup to enter the sponge, and then withdraw, giving a gentle squeeze so as to cause some of the juice to exude or drip; all that is wanted is to get some of the sweetness into the interior of the sponge. Baits of this kind will be eagerly sought after. The ants will pass into the sponge in quest of the honey or syrup, and when they are at work in goodly numbers the pieces of sponge can be dropped into boiling water. Wash the sponges, dry, and repeat. We have never known this fail when persevered in. Or bait with honey in saucers and then change to others in which arsenic has been thoroughly mixed. If not thoroughly mixed, the ants will take the honey and leave the arsenic. The poisoned honey must be kept from animals.

Crotons (Constant Reader).—Perhaps your plants do not flourish because they have not sufficient heat. They require a very high temperature and moist genial atmosphere. They should seldom be kept below 65° even in winter. They grow well under suitable conditions in a mixture of two-thirds turfy loam and one-third turfy peat, adding sand and a little crushed charcoal to render the compost porous. It is quite impossible for us to say whether your plants need repotting or not, as you neither indicate their size nor the size of the pots; but as a rule spring is the best time for repotting Crotons. Nor can we advise you satisfactorily about the Gloxinias, because you say not a word about their condition; probably the pots are large enough, and if the plants are strong they may flower towards Christmas in a suitable temperature, and with good attention as regards watering. Hydrangeas should be kept cool and rather dry in the winter, and pruned to the boldest buds in the spring. You ought to have described the size and condition of the plants. It will be soon enough to answer your question about Roses in a future issue.

Destroying "White Bug" (L. S. S.).—The "white bug" to which you refer is no doubt the mealy bug, and must have been dreadfully neglected to have "eaten down the whole house of Passion fruit." Petroleum is an excellent remedy, and judiciously applied will not destroy the plants. We advise the *Passiflora* to be loosened from the trellis, and any other plants removed from the house and cleansed. This may be done effectually with petroleum at the strength named below, laying the plants on their sides and turning them round that every part can be reached with the mixture. This will facilitate matters as regards the *Passion Flower*. Add 2 ozs. soft-soap to a gallon of boiling rain or soft water, or 8 ozs. to a four gallon watering potful, and half an ounce of soda. Mix thoroughly, then add one-third of a half-pint of petroleum and mix this by stirring briskly. With this the *Passiflora* should be syringed, the petroleum being kept mixed with the soap solution by briskly stirring it. It must be done effectually, and the mixture should be kept from the roots. Wash the whole of the woodwork with the same mixture, thoroughly cleansing it. Repeat the syringing of the plant if necessary. If the work is done well there will not be a trace of mealy bug, and the plant will be little if any the worse for the application. A sharp look out must be kept afterwards, and every insect destroyed the moment it is seen. There is no better method of preparing the petroleum mixture than that described on page 216, September 2nd, 1886, under the heading of "Hollyhocks Diseased." Fir tree oil is also good for the same purpose. Either the gardener in charge of the new glass range to which you allude is overwhelmed with work or is lethargic or inexperienced.

Mushrooms in Pastures (H. C. D.).—Though salt is applied to pastures for the destruction of wireworm it is a little questionable if it is as efficacious as is popularly supposed, as we suspect that a dressing strong enough to destroy the pests below the surface would injure if not kill the grass. We can quite understand that a pasture infested with wireworms would not be favourable for the growth of Mushrooms, through the reason you suggest of the larvæ breaking the cobweb like threads of the mycelium. That Mushrooms have benefited by salt is well known to growers of this crop in beds, and in such cases it is clear there was not sufficient salt in the soil. It may be, and probably is, beneficial in another way to the growth of Mushrooms in pastures, especially in dry soils and seasons—namely, its deliquescent properties rendering the soil more uniformly moist in hot weather. When salt is applied liberally and systematically to *Asparagus* beds the soil remains moist long after that surrounding, and to which no salt is applied, is dry; and the prolonged and uniform moisture of the land in hot weather through the application of salt may be favourable to the spread of the Mushroom mycelium. The growth of Mushrooms in pastures is greatly influenced by the weather, and salt would not be nearly so beneficial in a wet summer as a dry one. The distance for inserting spawn in pasture is very much a question of fancy or outlay, and the results somewhat a matter of chance, but we would rather insert half bricks of spawn a yard apart than small particles a foot asunder, as the larger pieces would be less liable to be destroyed by a possible term of wet weather than smaller would. Salt applied to an orchard will not injure the trees if it does not destroy the grass.

Pruning Vines (Docet).—Several persons besides yourself appear to have read with "much interest" the article on Vines and Grapes by "Experientia Docet" on page 173, and, as the signature of our correspondent indicates, his articles are founded on the teachings of experience. We have seen just such Vines as he has described rendered much more fruitful than before by the change of pruning suggested. It does not follow that high-class Grapes can be had on Vines that constantly produce either no crops or miserable bunches by this simple change in pruning; but that greatly improved crops have been obtained by a departure from close pruning in the case of many Vines is beyond a doubt. The two great essentials of fruitfulness in Vines are an abundance of active fibrous roots working freely in good soil near the surface of a border, and thinly disposed laterals with clean thick leaves in the summer, each developing without crushing against or being shaded by others. Vines thus grown may be spurred to any reasonable extent, and they will push strongly and bear good fruit; but Vines, the roots of which are not under control, and that produce weak laterals and small leaves in one case and long-jointed succulent growths in the other, are not equally amenable to the same treatment. It is quite certain that spur-pruning does not answer in your case, for you say the Vines are "quite barren." By all means change your plan and shorten the laterals to the best buds on firm ripened portions of the laterals. The best buds are those that are round and hard, not pointed on the one hand nor soft as if preparing to burst on the other. Also have regard to the direction of the buds, as in the same direction will the shoots extend, and if a bud points inwards where there would not be room for the extension of growth, it would be a mistake to shorten to that if there were another equally good or nearly so pointing in the direction of "vacant space," which the future laterals could occupy, and the leaves expand under full exposure to the direct action of light. If the ripened laterals are long enough to be secured to the main rod so secure them, shortening to the best buds, rightly placed, as suggested, then the "fearfully long spurs" you dread will have no existence. It is not unlikely that the stronger growths that would mature from these bolder buds might be cut back pretty close to their point of issue next year, as they might in consequence of their strength develop good buds near the base of the laterals. This we have more than once known, and the Vines have been afterwards managed on the spur system for a year or two. When the laterals are not long enough to be secured to the main rods the most promising and best placed "break" or shoot from each must be retained for carrying the bunch, and one from near the base can be retained for producing a lateral for bearing next year; but growths are almost certain to issue from latent buds on the rods or base of removed spurs between the bearing laterals; but however that may be choose the best situated, and so dispose the growths that the foliage can develop without let or hindrance, stopping these laterals, so they do not cause any serious overcrowding. There will be plenty of growths to choose from, and danger lies in retaining too many. Wherever there is space for the free expansion of the leaves let the laterals grow; where there is not space for leaf development there should be no laterals. It is not necessary to disbud before the bunches can be seen in the growths, then make your choice, not rubbing all the others off at once, but a few at a time thoughtfully over a period of a week or two. It depends to a very large extent on the judgment that is exercised in disbudding as to whether

you or anyone else will succeed or not in this modified extension system of pruning Vines. Endeavour to obtain stout healthy leaves that can store nutriment in the laterals and produce bold axillary buds, then by pruning to the best of these yearly you will have fruitful instead of barren Vines. We advise no change from the spurting method where that answers well; but where it fails a change is desirable if Grapes in summer are esteemed of more value than straight neatly trimmed rods in winter. We prefer Grapes to affording opportunities yearly for a person to show how handy he is with a knife, and little or no fruit to follow. As to thinning out overcrowded laterals now the leaves are withering to give the others more light it will be of no material benefit, as fading leaves have done their work and can do no more. The thinning ought to have been done long ago, then those relied on for storing food would not now be in need of relief, and the light would come too late for changing their character.

Names of Fruits.—The names and addresses of senders of fruit to be named must in all cases be enclosed with the specimens, whether letters referring to the fruit are sent by post or not. The names are not necessarily required for publication, initials sufficing for that. Only six specimens can be named at once, and surplus fruits beyond that number cannot be preserved. (*H. S., Bedale*).—1, Ringer; 2, Lord Suffield; 3, Manks Codlin; the Pears are too far advanced for identification, some being quite rotten. (*E. L. W.*).—1, Napoleon; 2, Easter Beurre; 3, Glou Morceau; 4, Beurre Diel; 5, Beurre Rance; 6, Huyshe's Victoria. (*P. H. W.*).—1, Emperor Alexander; 2, Not known, perhaps local; 3, Lemon Pippin. (*"Shillingstone."*)—Benrre Hardy. (*E. H.*).—1, Striped Beefing; 2, Carlisle Codlin; 3, Roundway Magnum Bonum. (*J. M.*).—1, Duchesse d'Angoulême; 2, Deux Sœurs; 4, Verulam; 5, Red Doyenné.

Names of Plants.—We only undertake to name species of plants, not varieties that have originated from seed and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in firm boxes. Slightly damp moss or soft green leaves form the best packing, dry cotton wool the worst. Not more than six specimens can be named at once. (*A Constant Reader*).—1, *Sedum spurium*; 3, *Polygonum cuspidatum*; 5, *Corydalis lutea*; 2 and 4 were unrecognisable. (*H. S.*).—1, *Athyrium Filix-femina plumosum*; 2, *Nephrodium spinulosum*; 3, *Asplenium thelypteroides*; 4, *Nephrodium molle*; 5, *Athyrium Filix-femina cristatum*; 6, *Aspidium aculeatum* var. *angulare*. (*T. J. D.*).—Apparently *Epimedium pinnatum*, but it was so much crushed in the letter that it was scarcely recognisable.

COVENT GARDEN MARKET.—OCTOBER 20TH.

TRADE quiet, prices remaining the same. Good samples of Pines in fair demand.

PLANTS IN POTS.

	s. d.	s. d.		s. d.	s. d.
<i>Aralia Sieboldi</i> .. dozen	9 0	18 0	<i>Ficus elastica</i> .. each	1 6	to 7 0
<i>Arbor vitæ</i> (golden) dozen	6 0	9 0	<i>Fuchsia</i> .. per dozen	0 0	0 0
" (common) dozen	6 0	12 0	<i>Foliage Plants</i> , var. each	2 0	10 0
<i>Asters</i> .. per dozen	6 0	9 0	<i>Heliotrope</i> .. per dozen	0 9	0 0
<i>Bedding Plants</i> , var. doz.	0 0	0 0	<i>Hydrangea</i> .. per dozen	0 0	0 0
<i>Begonias</i> .. dozen	4 0	9 0	<i>Ivy Geraniums</i> per dozen	0 0	0 0
<i>Chrysanthemum</i> .. dozen	6 0	12 0	<i>Lilium anatum</i> per doz.	12 0	20 0
<i>Cockscombs</i> per dozen	4 0	8 0	" <i>lancifolium</i> per doz.	0 0	0 0
<i>Cyperus</i> dozen	4 0	12 0	" <i>longifolium</i> per doz	0 0	0 0
<i>Dracæna terminalis</i> , dozen	30 0	60 0	<i>Lobelia</i> per dozen	0 0	0 0
" <i>viridis</i> .. dozen	12 0	24 0	<i>Marguerite Daisy</i> dozen	6 0	9 0
<i>Erica</i> , various .. dozen	9 0	12 0	<i>Mignonette</i> .. per dozen	3 0	6 0
" <i>hyemalis</i> per dozen	18 0	24 0	<i>Musk</i> per dozen	0 0	0 0
" <i>gracilis</i> per dozen	9 0	12 0	<i>Myrtles</i> per dozen	6 0	12 0
<i>Euonymus</i> , in var. dozen	6 0	18 0	<i>Palms</i> , in var. .. each	2 6	21 0
<i>Evergreens</i> , in var. dozen	6 0	24 0	<i>Pelargoniums</i> , scarlet, doz.	3 0	6 0
<i>Ferns</i> , in variety .. dozen	4 0	18 0	<i>Pelargoniums</i> per dozen	0 0	0 0

CUT FLOWERS.

	s. d.	s. d.		s. d.	s. d.
<i>Abutilons</i> .. 12 bunches	2 0	to 4 0	<i>Lily of the Valley</i> , 12 sprays	0 0	to 0 0
<i>Ageratum</i> .. 12 bunches	2 0	3 0	<i>Marguerites</i> .. 12 bunches	2 0	8 0
<i>Arum Lilies</i> .. 12 blooms	4 0	8 0	<i>Mignonette</i> .. 12 bunches	1 0	3 0
<i>Asters</i> .. 12 bunches	6 0	8 0	<i>Myosotis</i> .. 12 bunches	1 6	3 0
<i>Bouvardias</i> .. per bunch	0 6	1 0	<i>Pelargoniums</i> , per 12 trusses	0 9	1 0
<i>Camellias</i> .. 12 blooms	3 0	6 0	" scarlet, 12 trusses	0 3	0 6
<i>Carnations</i> .. 12 blooms	1 0	3 0	<i>Roses</i> .. 12 bunches	2 0	9 0
" .. 12 bunches	4 0	9 0	" (ladder), per dozen	0 6	2 0
<i>Chrysanthemums</i> 12 bchs.	3 0	6 0	" Tea dozen	0 9	1 0
" .. 12 blooms	1 0	6 0	" red dozen	0 8	1 0
<i>Coreopsis</i> .. 12 bunches	0 0	0 0	" Moss .. 12 bunches	0 0	0 0
<i>Cornflower</i> .. 12 bunches	0 0	0 0	<i>Parma Violets</i> (French)	5 0	8 0
<i>Dahlias</i> .. 12 bunches	2 0	4 0	<i>Pyrethrum</i> .. 12 bunches	3 0	6 0
<i>Epiphyllum</i> .. doz. blooms	0 6	0 0	<i>Stephanotis</i> .. 12 sprays	4 0	6 0
<i>Eucharis</i> .. per dozen	3 0	6 0	<i>Stocks</i> , various 12 bunches	3 0	5 0
<i>Gardenias</i> .. 12 blooms	2 0	4 0	<i>Sunflowers</i>	0 6	1 0
<i>Gladioli</i> .. 12 bunches	9 0	12 0	<i>Sweet Peas</i> .. 12 bunches	2 0	4 0
<i>Hyacinths</i> , Roman, 12 sprays	0 0	0 0	<i>Tropæolum</i> .. 12 bunches	1 6	2 0
<i>Lapageria</i> , white, 12 blooms	2 0	4 0	<i>Tuberose</i> .. 12 blooms	0 6	1 0
<i>Lapageria</i> , red .. 12 blooms	1 0	2 0	<i>Violets</i> .. 12 bunches	1 0	0 0
" <i>longiflorum</i> , 12 blms.	3 0	6 0	" Czar, French, per bunch	1 0	1 6

VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
<i>Artichokes</i> dozen	1 0	to 0 0	<i>Lettuce</i> dozen	1 0	to 1 6
<i>Asparagus</i> bundle	0 0	0 0	<i>Mushrooms</i> punnet	0 6	1 0
<i>Beans</i> , Kidney per bushel	2 0	3 0	<i>Mustard and Cress</i> punnet	0 2	0 0
<i>Beet</i> , Red dozen	1 0	2 0	<i>Onions</i> bunch	0 3	0 0
<i>Broccoli</i> bundle	0 0	0 0	<i>Parsley</i> .. dozen bunches	2 0	3 0
<i>Brussels Sprouts</i> .. sieve	0 0	0 0	<i>Parsnips</i> dozen	1 0	2 0
<i>Cabbage</i> dozen	1 6	0 0	<i>Potatoes</i> cwt.	4 0	5 0
<i>Capsicums</i> 100	1 6	2 0	" Kidney cwt.	4 0	5 0
<i>Carrots</i> bunch	0 4	0 0	<i>Rhubarb</i> bundle	0 2	0 6
<i>Cauliflowers</i> dozen	3 0	4 0	<i>Salsafy</i> bundle	1 0	1 0
<i>Celery</i> bundle	1 6	2 0	<i>Scorzonera</i> bundle	1 8	0 0
<i>Coleworts</i> doz. bunches	2 0	4 0	<i>Seakale</i> per basket	0 0	0 0
<i>Cucumbers</i> each	0 3	0 4	<i>Shallots</i> lb.	0 3	0 6
<i>Endive</i> dozen	1 0	2 0	<i>Spinach</i> bushel	3 0	4 4
<i>Herbs</i> bunch	0 2	0 0	<i>Tomatoes</i> lb.	0 2	0 6
<i>Leeks</i> bunch	0 3	0 4	<i>Turnips</i> bunch	0 4	0 0

FRUIT.

		s.	d.	s.	d.			s.	d.	s.	d.		
Apples	1 sieve	1	6	to	4	0	Melon	each	1	0	to	2	0
Cherries	1 sieve	0	0	0	0	0	Oranges	100	6	0	12	0	
Cobs	100 lb.	50	0	55	0	0	Peaches	per doz.	6	0	12	0	
Currants, Black ..	1 sieve	0	0	0	0	0	Pears	dozen	1	0	2	0	
" Red	1 sieve	0	0	0	0	0	Pine Apples English ..	lb.	3	0	4	0	
Figs	dozen	0	6	0	9	0	Plums	1 sieve	1	0	2	0	
Grapes	lb.	0	6	3	9	0	St. Michael Pines ..	each	4	0	6	0	
Lemons	case	10	0	15	0	0	Strawberries	per lb.	0	0	0	0	



SHEEP-FOLDING.

How to make farming answer is a question of vital importance that is not easily answered. We have repeatedly striven in these papers to explain various means to so desirable an end, in point of fact that is the end and aim of the whole of our writings on agriculture. We lay no claim to the possession of a panacea for the present very unsatisfactory state of agricultural affairs in this country, but we do hold that by close attention to every detail of practice, by the adoption of every possible means of improvement, by the exercise of rigid economy, it is still possible to make farming answer financially, and this is really the only sound test that can be applied to both theory and practice of this or any other commercial undertaking.

Among questions of reform to which general attention has repeatedly been invited is that of the application of manure. That the easy going but costly process of the manufacture of farmyard manure still obtains upon many farms is, we regret to say, only too true, but it is, nevertheless, wrong as applied to farming generally, for the simple but forcible reason that we are able to apply manure to the soil in a manner that is much less costly, and to say the least that is equally efficient. Among the means at our disposal for doing this in the best way sheep-folding holds a leading place, and deservedly so, for not only is it thoroughly efficient but it is profitable—so profitable that we desire to invite closer attention to it as a means ready to our hands of helping us to render farming profitable once more. But we may be told this is no new thing, it is old as the hills, and has been handed down to us by our forefathers. Granted, but have we turned it fully to account, and done all that is possible with sheep-folding? Have farmers generally come to regard it as being among the means at our disposal to use as a substitute for farmyard manure? We know that they have not done so—nay more, we know many a man who, under the stress of hard times, has sold his flock, but has still clung to his herd with strange, and we may add with suicidal persistency. How much we have to unlearn in farming! and how slow we are in doing it. Yet there never was a time when accurate judgment and prompt decision were so important to us. Contrast the process of the manufacture of farmyard manure and its application to the soil with sheep-folding. The one involves the breeding or purchase of beasts, the free use of straw as litter, the cost of attendance and food throughout winter and spring, loading carts and carting to the manure heap, the turning over and mixing of the heap, carting again and spreading upon the land with a heavy per-centage of loss of ammonia, and we may add a slow return upon the outlay which we incur in the purchase of the beasts. The other certainly also involves an outlay of capital in the breeding or purchase of sheep, but then we have a much earlier return upon our outlay, and we avoid manure heaps and the costly outlay which they involve for labour with men and horses.

Another objection which may be raised to sheep-folding is that it is not applicable to all farms, for upon heavy-land farms the soil is liable to become so saturated with moisture in winter that to keep sheep out in folds upon it is simply

impracticable. Well, we agree in part, and only in part, for there can be no doubt that the saturated condition of much heavy land in winter is owing to imperfect cultivation. For example, we know a case where some land had been under permanent pasture for many years. Now this pasture was so foul with weeds and so poor in really good sorts of grass that a gentleman who had purchased the land resolved to break up the old pasture and to lay it down afresh with a really good mixture of grass and Clover seed. He was told that he would fail, for the old pasture was both poor and wet because the soil was a heavy clay and nothing else. He, however, very wisely paid no heed to all this, but set a steam cultivator at work, and had the soil thoroughly broken up and stirred fully a foot in depth. This and drainage effected such a radical change in the condition of the soil that its wetness and poverty are a legend of the past, of miserable easy going slovenly practice, to which its present flourishing condition is a standing reproach. We might go on and cite many other examples of faulty treatment of heavy land, but it will suffice for our purpose now to have shown how such land in one of many instances has been rendered fertile and sound.

(To be continued.)

WORK ON THE HOME FARM.

For a full crop of Mangolds 4s. an acre is paid for pulling, topping, throwing into small heaps ready for carting, and if required covering the heaps with the leaves, which is only done when there is any risk of sharp frost. The carting of roots has proved a long and heavy business, for the crop is certainly a full one, and the roots have been carted to make heaps either close by a gate and hard road or alongside a field where it is intended to fold sheep upon a green crop. Swedes are being put into small clamps upon sound land intended for Barley. These clamps of roots are arranged up and down the field at convenient distances apart for folding, so as to be able to follow the sheep closely with the ploughs. Ploughing for winter corn has been much retarded on many farms by the dry hard condition of the land; recent showers have therefore been welcomed by heavy land farmers, and ploughing now goes briskly on. In such a dry autumn steam tackle is of especial value, as enabling us to break up the soil early and get a fine deep seed bed pretty well as early as we please. On an estate where steam tackle is turned to full account, and where much of the land is undoubtedly heavy, by the first week in October the whole of the Rye, winter Barley, winter Oats, and Wheat had been sown, the drills and harrows cleaned and put away for the winter, and most of the young plants were visible along the rows when we went over the farms a week later. Sown in the soil dry and warm, seed-germination and brisk growth followed the first heavy shower. Where it is intended to follow the Mangolds with a crop of winter Tares no time should be lost in ploughing in the Mangold leaves and sowing the Tares, which are one of our most valuable green crops late in spring. We have had much trouble with foot-rot among one flock of sheep purchased specially for folding. There must be much negligence about this troublesome disease by shepherds generally, or we should not see so much of it, and yet the treatment is most simple. After all it depends upon genuine kindly care as to how soon it may be cured. Cutting the hoof, cleansing with warm water, and regular applications of Gell's ointment soon restore the foot to health, and until this is done affected animals cannot put on flesh.

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude, 111 feet.

DATE.		9 A.M.					IN THE DAY.					Rain
1886. October.		Baromet- er at 32 nd and Sea Level	Hygrome- ter.		Direction of Wind.	Temp. of Soil at 1 foot.	Shade Tem- perature.		Radiation Temperature			
			Dry.	Wet.			Max.	Min.	In sun.	On grass		
		Inches.	deg.	deg.		deg.	deg.	deg.	deg.	deg.	In.	
Sunday	10	29.731	51.7	48.1	W.	55.8	61.2	43.2	99.2	41.2	0.010	
Monday	11	29.862	52.3	47.9	N.	54.4	61.4	48.2	97.4	41.8	0.97	
Tuesday	12	29.682	55.8	54.9	S.W.	54.2	60.9	52.2	72.0	46.9	0.463	
Wednesday ..	13	29.580	50.7	47.9	Var.	49.5	58.5	47.0	102.4	44.2	0.032	
Thursday	14	29.679	43.8	45.2	Var.	53.2	58.7	39.6	52.6	53.9	0.189	
Friday	15	29.105	57.1	54.7	S.	52.6	58.2	43.8	67.4	43.7	0.298	
Saturday	16	29.640	51.1	48.1	S.E.	52.6	56.1	48.8	71.4	44.5	0.152	
		29.583	52.2	49.5		53.2	59.3	47.0	86.1	42.0	1.246	

REMARKS.

10th.—Fine and bright.
11th.—A bright pleasant day.
12th.—Wet and dull throughout.
13th.—Fine and bright, with slight shower in early afternoon; wet and dull evening.
14th.—A fine bright day; wet at night.
15th.—Wet, windy, and cheerless.
16th.—Dull morning and evening; wet afternoon.

A week of genuine October weather; bright sunshine, alternating with gloomy weather and heavy rain. Temperature 3° above the average, and more than 6° below that of the previous week.—G. J. SIMONS.



COMING EVENTS

23	TH	
29	F	
30	S	
31	SUN	19TH SUNDAY AFTER TRINITY.
1	M	
2	TU	Ealing and London Corn Exchange Chrysanthemum Shows.
3	W	Highgate Chrysanthemum Show.

GRAPES SHRIVELLING.

COMPLAINTS of ripe Grapes shrivelling prematurely have been far more numerous this autumn than usual, especially in the case of Muscats, and more or less of anxiety has been caused thereby to several gardeners and amateur cultivators—the former lest the supply of firm fruit should fail too soon, and the latter through being haunted by a feeling of their having made some great mistake in management that they are

unable to indicate. This circumstance of Muscat Grapes turning to raisins, not in whole bunches in a natural way, but in small portions of them, a few berries shrinking here and there, and now and then a shoulder collapsing, has caused the more disquietude because the origin of the evil has not been clearly traced. It is commonly understood that Muscat Grapes will not keep if the saccharine matter is not satisfactorily developed before the leaves fall; but even common understandings do not constitute inflexible laws, and it is quite possible that fruit that is in fairly good condition, yet the flavour not fully developed in October, will remain firm as long, if not longer, than will crops that were fully ripened and the fruit in superior condition six weeks or two months earlier. But it by no means follows that the late-ripened fruit will by any means equal the other in quality, while its colour may be dingy in comparison.

The fact that late Muscats occasionally remain firm after the much earlier, richer, and better finished examples shrivel suggests that imperfect ripening is not the sole cause of the evil in question, even if it is the main cause. There can be little or no doubt as to the advisability of starting Muscats early enough, and providing a temperature adequate to finishing the fruit in the best manner attainable before the leaves of the Vines wither as the result of maturation, because it is difficult to see how the wood can be ripened and stored with nutriment in any other way for sustaining the vigour of the Vines and supporting future crops. But while admitting that, it does not follow that later, even if somewhat imperfectly ripened, fruit will of necessity shrivel before Christmas, while the much earlier, more completely ripened, and highly finished crops will remain quite firm for several weeks beyond that time.

During the process of ripening fermentation is active in the fruit by the conversion of gum or mucilage into tartaric acid, and this and starch into sugar. During this action the fruit of the Vine absorbs more oxygen than the leaves do, and all the time this great work is going on, and the laboratory of the Grape is in full operation, distension is more likely to occur than a collapse and shrinking; indeed, it seems impossible that shrivelling can happen at this stage, and yet the fruit remain sweet. If from a check to the Vines, no matter from what cause, fermentation is arrested and the chemical changes in operation suddenly stopped, growth stops also, but with what result? Certainly not sweet, but intensely sour Grapes, as in shanking; indeed, it is almost certain that that is the way in which this greater evil than shrivelling is brought about.

The shrivelling or drying up of Muscat Grapes that has been so prevalent of late is not “shanking,” because the Grapes remain sweet. That would appear to be proof, not that they were unripe, but exactly the contrary. If their growth suddenly ceased before the acids and other constituents were converted into sugar the fruit must remain sour, and any further change after that—for a shanked Grape is a dead Grape—must be in the direction of putrefaction; but when shrivelled Muscats are sweet—and they are often sweeter than before—the conversion of acids into saccharine must have been complete before the shrinkage, hence the Grapes were ripe, for if otherwise it is very reasonable to suppose they would be sour. The non-ripening theory, then, does not seem to be a satisfactory solution of what appears to be regarded somewhat of a mystery—the premature and unexpected shrivelling, not shanking, of Muscat Grapes.

Is there any mystery whatever about the matter? What causes ripe Grapes to shrivel? The answer is found in the preparation of raisins. The Grapes are simply cut and placed in the sun of Spain, choosing the darkest soil on which to spread them for absorbing the sun's rays and retaining the heat during the night, for the greater the heat the greater the evaporation of water from and the concentration of sugar in the berries. Is it not the evaporation of moisture from the fruit that causes so many Grapes to shrivel in September and October in English vineries? It is very certain that Muscats will shrivel in what is known as dry and “roasting” fire heat, and what difference is there between that and a dry atmosphere from natural causes? What was the nature of the weather in September and early October this year? The first-named month may not have been abnormally hot, but it was extremely dry in most places, for when the sun was not shining, or whether it was or not, a parching east wind was blowing, depriving vegetation of moisture to a remarkable extent, causing the leaves of late Potatoes to shrivel a month before their time, and of Turnips and other root crops to stop growing. And the first week of October was phenomenal for its heat and absence of moisture in the air. During the Grape-shrivelling period named, so great was the scarcity of moisture through evaporation that farmers could not plough the ground for weeks in preparation for autumn sowings; and gardeners know what a fine time it was for killing weeds and preventing the raising and planting of Cabbages. Why should moisture be extracted from almost everything, and thus cause inconvenience, and Grapes alone retain their juices? Thousands of bunches of Muscats could not resist the strain upon them and remain fresh. They suffered the most in light dry borders, and the least in strong moist soil. They scorched the most severely where the foliage was thinly disposed, and shrivelled the least where it afforded partial shade to the bunches, and where the air of houses was as dry as that of a desert for finishing the crops. Some of them were “finished” only too completely through excessive loss of moisture by evaporation. Hence the shrivelling.

So often has the formula been repeated that “Muscats cannot have too much sun,” that it has almost become an axiom in Grape culture. But they can have too much sun, and do have too much if it shines directly on the fruit, extracting the moisture from the berries more quickly than it is supplied to them. The fruit will shrivel then just the same as the leaves of plants will droop from exhaustion under similar conditions.

The fine Grape in question cannot well have too much light—diffused light—but very hot sun acting directly on the berries is often injurious. If intense and unobstructed sun, not on the leaves but the fruit, is essential to high finish, how is it that the average quality and finish of the Grapes grown in the cloudy north, and exhibited at Edinburgh, is at the least as high as those grown in the “sunny south” and staged in London? Possibly no better ripened, firmer and more glowing Muscats have been seen than some that won the chief prize in one of the great contests at Edinburgh in the

class for "colour and finish." When the writer saw the Grapes growing at Mount Melville, a paper shield was placed over every bunch, and if they did not benefit from that slight shade and subdued sun, it is very certain they did not suffer. The covering may have been provided to prevent dust settling on the bunches, or it may not; be that as it may, it was there, and not long afterwards the first-prize card was attached to some of them in very severe competition.

It is not possible to give specific instructions that can be safely and rigidly followed by all persons in all places and under all circumstances. Judgment must be exercised on the question of admitting the sun to Muscat Grapes, paying due regard to the moisture in, or its comparative absence from, the soil and the atmosphere. If the evaporation is disproportionate to and greatly in excess of absorption ripe Muscats will shrivel just as White Currants will "wizen" if exposed to the direct action of hot sun in summer, when the bushes at the same time are suffering by drought at the roots; and late ripened or imperfectly ripened Muscats often remain firm, because evaporation from the berries is necessarily less during dull and cool weather than in the exhausting days of summer, or an exceptionally dry early autumn like that of the present year.—EXPERIENTIA DOCTET.

In the Journal for October 7th, page 330, in your reply to correspondents you give two causes for this—first, a check in ripening, or rather I should say in the growing season, and then (what to my mind is of the first importance) starting the Vines too late. This reply has been brought under my notice, and I should now like to give my experience on some points in Grape culture, also my opinion on the fruit shrivelling. I feel rather reluctant in thus putting my thoughts on paper, more especially as so far I have done nothing wonderful in growing Muscats, though we have a good crop.

I will take three kinds of shrivelling. First, the most common—namely, shanking; second, the shrivelling of stoneless or imperfect berries when over-ripe; and lastly, the shrivelling of berries on unripened wood, chiefly on young rods, this latter deserving particular attention. Shanking, though I do not personally complain, is very prevalent this year, due, I think, as much to a low or fluctuating temperature and want of sun in this very changeable season as to anything else. Of course, faulty borders, low and undrained, which are cold, aggravate the evil, which is also, on the other hand, incited by a scarcity of water. A raised—thus a warmer—border is one great step towards preventing shanking. This is very clearly shown here, where Muscats are never so good or free from shanking as in a raised bed. I have never grown a Muscat in a pot, but should not expect to see shanking if I did.

Nothing surprises visitors here, including experienced men and good practical gardeners, so much as a house 80 feet long of Muscats, growing in what was three years since a Cucumber bed. The Vines are planted 4 feet apart in a border 3 feet wide, with soil not more than 15 inches deep, and the rods are now carrying from 10 to 20 lbs. of Grapes each—Grapes, too, that I hope to have in good condition in March.

I have satisfied myself that an excess of water early in the season will cause shanking, even though the border is well drained; and again, I have found that a border kept too dry, though it does not cause shanking and sour berries so soon, still the evil is apparent later on. A low temperature at swelling time is a fruitful source of shanking, and though some good growers close their houses at 90° or 100° I do not believe in it, as this temperature may be down to 60° in the morning, and this extreme or sudden change from heat to cold cannot be good. Old Vines in poor or exhausted borders with roots running at random shank more or less. The remedy in such cases is root-pruning, lifting, and better soil.

The second kind of shrivelling I will deal with is with either stoneless berries or Grapes containing less than the normal number of seeds. If Muscats of this kind are ripened early no man can keep them; but if ripened late, though of course the colour is not good, I have proved they will keep far into the spring. This will, I suspect, lead to some writing to the contrary, but still I record a fact. If early Muscats are to be kept on the Vine after ripe shading will benefit them immensely. I have put sheets of paper over each bunch with great advantage, for if the sun be allowed to shine fully on the bunches after fully ripe a few berries, especially near the top of the bunches, will shrivel and also become discoloured. I know that distance from the glass has great influence, also the size of the house, the Grapes in a large house enduring much more sun than those in a smaller one.

I will now refer to shrivelling which is not shanking, because

shanked berries are sour, not filled with saccharine matter, while the shrivelled berries under notice are sweet and eatable, and shall trace the cause to immature wood. I have never found this kind of shrivelling except on young canes or rods, which rods if considered ripe were certainly not so. Two Vines of Muscats in my oldest house speak volumes to a thinking man. One rod five years old is now perfect, with a good crop of useful bunches, not large, but fair-sized berries, of good colour. On the same Vine is a rod of last year, which at pruning time I left the full length of the rafter to match the old Vine, allowing a space of 3 feet 6 inches between the rods. Now what is the result? The largest bunches are on the young canes, but the Grapes are not ripe, or at least not coloured; they are also shrivelling, and to prevent waste I must cut and sell them. When the sun is shining on them the difference in colour and plumpness of the Grapes on the two rods of the same Vine is very apparent, and equally so by candlelight. These young canes—I have two of them—have taught me a lesson, and I conclude that unripened wood is often a cause of failure in Muscats. One of these young rods will be cut away as soon as the fruit is cleared, but the other will be left for another year's experiment. Late Muscats must of necessity be more liable to this form of shrivelling than is fruit ripened early. By early ripened I mean Muscats that are at their best in August or September, and I cannot think that these are improved by hanging on the Vine. This, however, will depend to a great extent on the amount and quality of the foliage.

I am seeking information as to the best time for starting Muscats. I think March is too late, especially in this cold marshy district, and believe February (if hard firing is not resorted to) would be better. A very experienced grower informed me the other day he began before Christmas, and this, too, with the Grapes now hanging. If the Vines require rest I would ask, When are they to have it? Seven months I find is the time it takes me to grow and finish Muscats, but unfortunately I have overweighted the crop this year, and have no doubt with a lighter crop six months would suffice. A bad season must retard the ripening of Muscats much more than black Grapes. I hope some of our successful Grape growers will favour us with their experience on early and late ripening for keeping purposes. Here at the warmest end of the house nearest the boiler Muscats always do the best. This I think due, not so much to the higher temperature of the fruiting season, as to the fact of this wood being so much earlier ripened the previous summer. I have dealt with this matter rather freely, and hope to be pardoned if in going out of the beaten path new light is put on this great question of the shrivelling of Muscats. If grown under favourable conditions they will not be so liable to any of the three kinds of shrivelling, and the larger the berries the better they will keep.

So far I have confined my remarks to the white Muscats: now for a line on the black. Madresfield Court, the only black Muscat I grow, never shrivels here. True, the end of November sees the end of these, as this is not a keeper. Lady Downe's, though it is a disputed point as to its having a touch of Muscat (I think it has) is often subject to shrivel, though the shrivelled berries are uniformly faulty in stones. Very great stress is laid upon this variety being the best keeping Grape. I, however, do not fully endorse this. I will give in to its being the best flavoured of all the late blacks; but speaking of flavour in black Grapes, where does it lie? Why, in the skin. Take all the pulp out of a berry each of the Black Hamburgh, Alicante, Madresfield Court, and Gros Maroc—then what? It would be a very difficult matter to say which is which! Take the skins and suck them well, then you will tell one from the other. Lady Downe's under this test will stand well, the Muscat aroma coming out more or less according to ripeness. Muscat of Alexandria if well grown even the pulp is scented more or less.—STEPHEN CASTLE, *West Lynn*.

SPRING BEDDING.

(Continued from page 357.)

CUTTINGS of *Iheris corifolia* should be inserted in sandy soil at the end of August or early in September in a cold frame. Do not admit air until roots are formed, when they must be gradually hardened. It is well for them to have the protection of the frame until early in April, when they should be planted in rows in an open space. Pinch the point out of each plant, which induces side shoots to grow freely, keeping them dwarf. If the weather be dry during summer supply water freely, and by October they will be stout plants. Year-old plants may be retained another year by placing them deeply in the beds, and they may be made to render good service once more. The position in the beds must be determined by circumstances, either in masses or as an edging.

CHEIRANTHUS ALPINUS.—A plant not commonly used for spring bedding, but it is charming for the purpose. Its delicate lemon-coloured flowers are so distinct from any other plant that it

is at once an acquisition. In some localities—on wet soils for instance—it is late in flowering, which detracts a little from its value, but where time is not so much an object it is useful. The following is a good method of increasing the stock of plants. When the old plants are removed from where they flowered they should be split into as many pieces as have roots: these planted on a west border, using a little sand to assist the formation of other roots, during the summer they will make handsome bushes. Small side shoots taken off and inserted in sandy soil under a handlight behind a north wall in August will make fine little plants for edgings.

AUBRIETIAS GRÆCA, PURPUREA, AND VIOLACEA.—These are amongst the best plants used for spring bedding. So hardy are they, beside their free-blooming properties, that they could not be easily dispensed with. A stock to commence with is easily procured from seed, afterwards the best should be selected and increased annually by division of the old roots; so grown the colour and height can be more depended upon. The seed should be sown in boxes in a cold frame towards the end of May. Prick off the seedlings as soon as large enough to handle. When established plant them on any open piece of ground, where they will soon become suitable for the beds. To increase by division cut the old growth down to the ground, divide and plant on a border, using some sand to assist rooting. They will soon grow into dense tufts, which can be easily lifted and placed so that the tops touch each other in the beds, as they do not grow much in the autumn after removal.

ALYSSUM SAXATILE COMPACTUM.—On account of its bright orange yellow flowers this is much appreciated in the spring, when it flowers freely, remains gay a long time. The old roots can be used several years by planting them deeper in the soil each year. As it does not strike readily from cuttings increasing the stock from seed is the easiest way, which should be sown early in August in a cold frame. As soon as the seedlings are large enough plant them on a west border, where they should remain for a year: in such a manner they acquire strength, and will bloom freely the following spring. By sowing a few each year a stock of plants is always ready.

VIOLAS.—These are well suited for beds in the spring if well prepared previous to transferring to the beds, but if they are poor and weak at planting time it is useless to expect good results from them. They are hardy, and flower freely under favourable conditions. Their various shades of colour enliven the beds much. A cold frame is the best place to strike the cuttings in, which should be inserted early in July. It is useless to take cuttings from shoots which have previously flowered, as such are a long time in making roots. The best cuttings come from the centre of the plants—short stiff cuttings with no signs of flower about them. As soon as rooted the point should be pinched out of each to induce side branches to form, and when well rooted plant them out where they will become stocky by the production of side shoots. If some decayed leaves are mixed with the soil a better ball of earth can be obtained with each plant in October, thus causing no check to the plants. For freedom of flowering and effective colouring no variety surpasses Cliveden Purple. The centre of a bed in a bold mass of this variety broadly edged with Vestal, a white-flowered variety, produces a charming effect. Sovereign and Cliveden Yellow are two of the best of this colour—yellow. There are several other kinds, but this can be left to personal tastes.

LIMNANTHES DOUGLASSI.—This blooms freely, but its one fault is the late period at which the flowers are produced: hence it is not well adapted for planting in beds that have to be filled with summer decorative plants. It is easily grown from seed sown in July out of doors. Still some persons may be partial to it, and the dense mass of flower produced yellow and white is pleasing.

SILENE PENDULA COMPACTA.—The same fault mars this as the *Limnanthes*, otherwise its bright pink flowers, which are produced in abundance, are very showy. It is easily raised from seed sown out of doors in July.

CARDAMINE PRATENSIS FL.-PL.—The Double Cuckoo Flower is grown somewhat freely in some places. Its pale lilac blossoms are freely produced. It is dwarf in habit, and being very hardy it is well worthy of a place in the spring garden, where much variety is essential. It is easily increased by dividing the plants when removed from the beds after flowering.

ARABIS ALBIDA.—With its variegated form this is in some places much in request, particularly where bees are kept. It is one of the earliest blooming plants we have. Very partial are the bees to it on this account mainly. It is easily increased by division of the roots in the spring, but neater plants are procured by inserting single cuttings in a cold frame in June, planting them on any open space when well established. By reason of its very early flowering it is not used nearly so much as it would be were it coming into perfection later on, when it would harmonise with other plants used for the decoration of the spring garden.

PYRETHRUMS AUREUM, SELAGINOIDES, AND LACINIATUM.—Sometimes these are used for dividing lines between dwarf plants, such as Daisies and Aubrietia for instance, where it is required. The best method of preparing the plants is by pulling in pieces the side shoots from those plants used for summer bedding. This is much less trouble than raising seedlings, and by using side shoots only no fear need be apprehended that they will develop into bloom shoots during the time they are required in the spring beds.

BULBOUS PLANTS.—Hyacinths, Tulips, and Crocuses in some places are largely used for the decoration of the flower garden where expense is not so much considered as effect. The best effect is made by planting them in beds by themselves, massing them broadly in their respective colours, as, for instance, a whole bed should be planted with Hyacinths in different colours, using say as a centrepiece a mass of red, blue, white, or pink as the fancy may incline, filling out the remaining parts of the bed in distinct colours. As all bulbs do not bloom simultaneously it is better to use them by themselves, say a separate bed of Hyacinths, another of Tulips, both single and double, and another one of Crocuses. Hyacinths for bedding can be bought for this purpose in distinct colours, also Tulips and Crocuses would be used in a mass; a few of the best varieties of the latter are Large Yellow, which flowers early. Bride of Abydos is a very fine white variety, coming next to the former; and Othello is a splendid dark blue sort which is particularly effective in bold masses. Towards the end of October or early in November dig the beds to the depth of 18 inches, where the soil is heavy and wet adding some well-decayed manure, loam, wood ashes, leaf soil, and plenty of sand for heavy soils. Hyacinths may be planted about 9 inches apart and 4 inches deep, placing a little sand under each bulb. Tulips should be planted in the same manner, excepting that the distance should be 6 inches apart. Crocuses may even be closer, say 4 inches wide and 3 inches deep. Over the beds place a thin layer of cocoa-nut fibre for protection during the winter; a much neater appearance is given to the beds than by using manure for this purpose.

A few suggestions only shall be given as to arrangement, but that so much depends upon personal taste and the plants which are appreciated. Most kinds show to the best advantage when used in bold masses, as, for instance, the centre of a bed filled with purple-coloured Violas edged with a broad band of white Violas, or the centre of a circular bed filled with dark Wallflowers edged with a broad band of *Alyssum saxatile*. Particularly rich is these two colours in combination. An oval-shaped bed with the centre of *Cheiranthus alpinus*, next to this a broad band of purple or blue Violas with a margin of White Daisies would complete this arrangement. A small circle might be filled with Aubrietias, either of the three varieties named are very effective so massed; dark Wallflowers and *Myosotis* do well together. Daisies are well suited for edgings or planting *en masse* in one bed, having due regard to arrangement of the colours. *Myosotis* as a central mass with a broad band of *Silene pendula* is very telling. Dark Wallflowers, *Myosotis*, and white Daisies harmonise well together.—E. MOLYNEUX.

BUSH APPLES.

I HAVE often sent an account of my experience with bees to the Journal, but I have not hitherto placed before its readers any matter horticultural. I cannot, however, refrain from sending a few lines just as the season for planting approaches regarding a small plantation of bush Apples. Five years ago I planted a number of pyramid and bush Apple and Pear trees, grafted on the Crab and Pear respectively. Some of these on my shallow soil have done very well and are bearing a fair quantity of fruit, but many are showing signs of canker, necessitating annual lifting. A number of standard trees planted at the same time are in the same condition. Half must be done away with. The soil here is a peaty loam, on the average about 15 inches deep, resting on a dry hard subsoil of sand and gravel. Two years ago I determined to plant a plot with bushes on a dwarfing stock and watch the result. I obtained from Messrs. Bunyard and Son of Maidstone a number of good trees grafted on Rivers' Paradise stocks. The principal varieties planted were Lord Grosvenor, a beautiful Codlin shaped Apple, ripening just before Lord Suffield, of which latter variety some trees were put in; Lord Derby, a splendid baking Apple, coming into use from now on to Christmas; Peasgood's Nonesuch, Wellington, Loddington or Stone's Apple, Cox's Pomona, Tower of Glamis, and Cox's Orange Pippin.

These bushes were planted nearly on the surface, well staked, mounded up, mulched, and left unpruned (excepting the cutting off clean of fractured branches) for the first season after planting. All of them bore fruit, which was well thinned last summer, only leaving two or three on each bush to test the sorts. They made

good growth, which was duly stopped about the end of June to cause the formation of fruit spurs, and the leaders pruned back early in October last. The bushes were kept well open to sun and wind. This has not been generally a good Apple year, but these bushes have been pictures of fruitfulness, the admiration of all who saw them. Summer pruning was carried out as last year, and although they have yielded a splendid lot of sound large fruit, they have made strong short-jointed growth, much of which shows embryo fruit buds on the current year's extension. Several fine fruit were also formed and well matured on the growth made last year. Notably on Lord Grosvenor bushes fruit was borne by the wood of the year before, and this principally at the terminal buds of rather long spurs, other fruit buds forming behind the bearing bud during the present summer. All the bushes carried a fine show of Apples, but those which I wish particularly to recommend to planters of small gardens are Lord Grosvenor, Lord Derby, and Peasgood's Nonesuch. On three bushes of each of the three sorts above named the yield was as follows:—Lord Grosvenor ninety-seven Apples, all of good size, most of them very large baking fruit; Lord Derby sixty-five, all large fruit, the largest Apple weighing 14½ ozs.; Peasgood's Nonesuch fifty-four, none small, some large, and many weighing about 1 lb., the largest turning the scale at 18 ozs.

Some will think that such a crop must exhaust the trees. Such is not the case, the wood is thoroughly ripened, even that which has been made since the branches were stopped early in July. Some growths started again since that date, being 8 to 10 inches long and well ripened to the points. The culture has consisted of keeping the bushes well open by a judicious thinning of the growth, and a few applications of liquid manure over the mulch during the swelling of the fruit. The trees are planted 8 feet apart, and the ground was cropped with Potatoes between the rows of bushes and kept firm, but hoe-weeded within 2 feet of the trees throughout the season. The great amount of pleasure to be got by those who love their gardens from a plantation of such dwarf fruit trees must be apparent to many readers of this Journal, and this is why I have written these few lines in order that others may be induced to plant in places where the natural advantages are not all that could be wished for fruit-growing. Fruit, certainly inferior to many borne by these bushes, was selling in Brighton for 1½d. and 2d. each. The bushes of Cox's Pomona and of Cox's Orange bore less fruit than those specially mentioned above, but the Apples were all fine specimens of their kind. Pomona well deserves its description given in Messrs. Bunyard's catalogue, "Very prolific and handsome." Its shape is very attractive, and the lovely colouring on the sunny side and rosy streaks on the soft yellowish ground to my mind render it the queen of Apples so far as appearance is concerned. I have yet to test its quality as a good Apple, both for K and T, as the list puts it. I need not speak of the worth of Cox's Orange Pippin; to taste one is ever after to esteem this delicious variety, and it is so much easier to grow than the Ribston Pippin, the Apple of our boyhood.

I cannot conclude this letter without putting in a word for my friends the bees. It is an article of my faith that I owe to them a very great part of the success I ever obtain in the various products of my garden. I well remember how they crowded out during the few short bursts of sunshine which we had during the blossoming season of last spring, and who shall say how many of the big Gooseberries, which I pluck each year would have fallen in their babyhood, had not the busy little sprites visited them at their birth? What small agents does not a good Providence employ to work His wonders and to crown the year with plenty!—P. H. P.

AMBURY.

AFTER reading the note on ambury or Cabbage disease by Mr. Thor. Record, I thought the following might be of use to someone, as it has enabled me to have Cabbage plants entirely free from disease or clubbing. There is some trouble connected with it, but that is as nothing, when the success of a crop depends on having plants healthy and free from blemish. The beds are made to the required size, the soil being fine, trodden down firmly, and the surface made even. We then take three parts of wood ashes and one part of burnt earth, mix together, and spread them on the surface of the beds, half an inch thick. Then sow the seeds, and rake in with a long-toothed iron rake, making all firm with the back of the spade. The plants come very strong through the wood ashes, being well supplied with potash and ammonia imbibed by the burnt earth. They lift with roots, more like small tufts of grass than Cabbage plants, and are very little checked by removal when transplanting them to other beds, or their final quarters, the holes being made an inch deeper than the plant requires, some of the mixture being put in them, and pressed round the roots. The same applies to Cauliflowers when planting them out of boxes or from frames with a trowel. Stir

up some of the mixture in the bottom of the holes, then place in the plant, cover the roots with it, and up the stems, which I have found to keep them free from grubs, and they make additional roots from the stem, where the ashes come in contact with it, in all producing a mass of fibrous roots. This is most effectual in resisting drought on light open soil.—JOHN SWAN, *Kilmacolvin, Renfrewshire.*

COMMON FLOWERS FOR CUTTING.

THOSE who lack the means of providing the finer flowers for cutting might easily cultivate any of those noted in this article. We use quantities of such flowers, and take the opportunity of embodying remarks suggested by experience as to the best methods of culture, and also the uses to which the flowers may be put. We shall take annual flowers first, as being at once the easiest to grow and the cheapest to produce in quantities, and of course of these hardy annuals ought to be the commonest.

It might be thought that Sweet Peas should require no note further than the bare mention of the name to commend them to everybody, but there are a few thoughts about these which may be useful to many. First of all, if one can grow only a few of these it is as well to get the best, and the best for the purpose in view are pure white and crimson-flowered varieties: the whites especially are very useful for many purposes. Then the season when these can be had may be considerably lengthened by attention to a few little points. By sowing about this time flowers may be had much sooner in the year than if sowing be deferred until spring. Thin seeding is also of importance in so far as it renders it much easier to carry the plants through a much longer blooming period than if the plants are too thickly in the ground. But the main point to be observed in order to secure a continued bloom is to remove two or three times during the season all seed pods by cutting plenty of flowers, and by seeing that the plants do not suffer for want of nourishment. Small Peas when cut are useful in various ways; they are capital for wreath-making, may be used in good bouquets, and for furnishing vases are very good indeed, only they must not in the latter case be stuck thickly and evenly together, but gathered in long branchlets, leaf, flower, and bud, and arranged as naturally as possible. With a few flowers of a heavier form added they make a very acceptable change, and they are also very suitable for mixed arrangements with other flowers.

Another extremely good annual is the white Sweet Sultan. This may be sown in spring for autumn flowering, each plant having a clear space allowed of at least a foot each way. These are also useful for wreath and bouquet-making, and are first rate for dotting among other flowers, either in small or large vases, using them with long stalks so as to stand well out from the others. They last well for weeks, are very sweet scented and pretty. The yellow Sweet Sultan is even prettier, but lacks the odour of the white one. The purple is not worth growing. The light coloured varieties of the common Cornflower are useful for variety, and we always grow plants of the blue branching Larkspur; these are sown in spring and given plenty of room, and furnish for several months a supply of deep blue flowers at a season when that colour, is rather scarce.

The Alpine Poppies, of which we have three varieties, are so extremely useful, and it is strange they are so little grown. The white form is the prettiest, and for filling small glasses is quite indispensable. The seeds are sown here in the beginning of April, are sprinkled over the surface of the ground, and then firmed with the back of a spade.

Oenothera Lamarckiana is properly a biennial, though by sowing in a frame and planting out when big enough the plants flower the same year. With us chance seedlings come up wonderfully freely. The flowers are a soft smooth yellow, extremely pretty, and are best cut in long spikes, the flower buds opening quite freely in water.

Chrysanthemums are quite a host of themselves. The common *C. segetum*, although grown so much of late years, is the finest yellow for some purposes we have. The tricolor varieties are extremely showy, gaudy perhaps, but nevertheless they cannot be overlooked as cheap and abundant producers of available flowers. *Burridgeanum* is perhaps the showiest; Lord Beaconsfield, W. E. Gladstone and *atro-coccineum* are all good sorts.

Single Anemones are so easily grown from seed that they may be classed as annuals. Sown thinly on a warm border in March they will bloom the same year, and produce quantities of most lovely flowers for cutting. The common *Honesty* (*Lunaria biennis*) is so useful that a few plants at least should be grown. With us it takes care of itself, any number of seedlings putting in an appearance in various positions.

Of half-hardy annuals none surpasses the Aster for general usefulness. For all purposes the treatment we give to Asters is simple

and effective. The seeds are sown under glass, and may be either in boxes or on beds of prepared soil. When large enough the plants are lifted and dibbled out like Cabbages in the positions they are to flower in. The quilled is the most generally useful, and these may be employed either cut singly with long stalks for mixing with other flowers, cut in branches and used in the same way, or vases may be very prettily filled with one colour arranged quite naturally. Victoria Asters are also grand for cutting, the white variety being quite indispensable, so useful as it is for wreath-making, harvest festivals, &c. The dwarf Pæony White Aster, a form distributed this year for the first time, is very good indeed, and such kinds in fact are of great value. Nothing prettier is to be had than some of the single flowers which crop up among the others.

Nicotiana affinis, sown under glass and transplanted into borders forms very useful flowers for cutting, being pretty, graceful, and sweet. *Humea elegans* is a very old friend, and too much neglected nowadays. It requires to be kept during winter under glass. Its feathery-looking flowers are extremely useful for many purposes, and can be employed in any size of vase.

Single Dahlias are somewhat less popular than they were a few years ago, but they are well worth growing, notwithstanding the recession of the full tide of popularity. It may be noted here that a very simple method of raising a large stock of plants is to do so by means of seed sown in the spring. We raise a good number thus, as we grow them by the hundred, and find that it is possible to reproduce varieties very closely from seeds. We have various shades of yellow toning of almost to white, and those of a scarlet shade which we find most useful. The flowers are rather fugacious, but if cut as soon as open they stand moderately well. It is necessary to pick off all seed pods in order to keep up a long-continued bloom.

Carnations, we may note here, also do well from seed and supply large quantities of bloom. We are at this date cutting from plants sown last January, and the same plants will continue flowering throughout next summer. More will be said of these on another occasion.—B., North Britain.

THE GOOSEBERRY AS A WALL TREE.

To those who have wall space to spare and on which no choicer fruit will thrive I would say, Plant the Gooseberry. It is not often that overmuch pains is bestowed upon this class of fruit tree so as to make it an attractive one about a garden, yet it is amenable to training in almost any fanciful way without in the least affecting its fruiting qualities. I do not advocate its being planted in positions which would be more properly and profitably assigned to choicer kinds of fruit, yet there are many gardens where the walls with a direct northern aspect, and having a soil unsuitable to such things as Plums, Pears, and Morello Cherries, which may well be devoted to the cultivation of the Gooseberry. Take for an instance the chalky soil of the northern part of Herefordshire and some parts of Cambridgeshire, where the surface soil is not more than 1 foot or 18 inches in depth with a substratum of solid chalk. Those in the most favourable aspects of the garden it is useless to plant Peaches, Nectarines, Apricots, or Cherries, unless in specially prepared borders; on the other hand Pears and Plums as well as Apples do fairly well until they get rooted solidly in the chalk, after that they decay and die. I have seen some good examples of Gansel's Bergamot, Brown Beurré, Marie Louise, and Glou Morceau among Pears, and Coe's Golden Drop and Green Gage and Victoria among Plums, while the Gooseberry is thoroughly at home, and never fails to produce a crop, but then this tree likes a dry bottom. Some gardens have the entire length of the northern side of the wall planted with them. The trees are mostly trained fan-shaped, and when properly done a more neat or pretty appearance could not be wished for in tree training. They are mostly pruned on the spur system, which causes the branches to be thickly set with fruit buds. When growth commences in spring the shoots are often found too thick, when a disbudding takes place, and the remaining shoots are tipped or stopped when nearly their full length, thereby throwing the strength back into the fruit and buds. Another advantage is to be found by growing the trees on a north wall—that is, the fruit comes to maturity a stage later than those in the open ground, which therefore prolongs the season.—THOMAS RECORD.

THE CONSTANTINOPLE NUT.

THE species of *Corylus* known in gardens are comparatively few. In the west of Europe we have *C. Avellana*, the common Hazel, which in its numerous varieties affords us both useful and ornamental trees; then in the east, Turkey and Asia Minor, is found *C. Colurna*, the Constantinople nut. Nepal gives us *C. ferox*, while North America yields *C. americana* and *C. rostrata*. These may be taken as types of the Hazels, but except the first-named they are seldom seen in collections of trees, either as

curiosities or ornaments. *C. Colurna* especially might well receive more attention, for when planted in a situation adapted to its requirements it becomes a distinct and handsome tree, which is rendered still more remarkable when fruiting freely. Very rarely can it be seen so finely represented as in the Oxford Botanic Gardens, where an old large and well-proportioned specimen annually produces a heavy crop of nuts in pendulous clusters. The nuts are enveloped in and almost concealed by a large and deeply cut involucre, the segments of which are curiously twisted and curled, as shown in the illustration (fig. 56). This character is strongly developed; but it is not peculiar to *C. Colurna*, for in the Frizzled Filbert, *C. Avellana crispa*, and the Indian Hazel, *C. ferox*, a similarly cut involucre is produced. A variety or hybrid named *intermedia* is thought to have resulted from a cross between *C. Avellana* and



Fig. 56.—The Constantinople Nut.

C. Colurna, and another form termed *arborescens* is distinguished by its involucre being very finely cut, by the spreading habit of the tree, and its rapid growth.

The tree of *C. Colurna* in the Oxford Botanic Garden is a large spreading specimen, old but healthy and well proportioned, and probably one of the best in this country. There are several at Kew, but we do not remember seeing such a large or handsome specimen either in the Botanic Gardens or the Arboretum. Mr. Baxter informs us that the Oxford specimen of *Corylus Colurna* was in all probability "planted in Dr. John Sibthorp's time, about one hundred years ago. The height is 33 feet and the spread of the branches 44 feet. The stem, which is worked on *Corylus Avellana*, measures 5 feet 4 inches round 3 feet from the ground."

CHRYSANTHEMUM NOTES.

VARIOUS NOTES.—When growers disagree who is to decide? Mr. W. J. Murphy's plan of growing *Belle Paul* is quite opposite to mine, and may suit in Ireland. I prefer growing this variety in a less rich soil than the general collection, and in a fully exposed position. I doubt if Mr. W. J. Murphy has the true variety, as he states his plant only grows 4 feet, whereas the true one grows 6 to 7 (when not stopped). In habit it resembles *Fair Maid of Guernsey* more than any variety I know. When grown near a wall or building it is more liable to be attacked with

red spider or scorched with heat during hot weather. This is my experience in the south of England. Mr. Murphy should add to his early-flowering Chrysanthemums *Flora*, a Pompon, one of the most free-flowering and earliest I know. It has been in bloom with me since the 15th of July, and now, the 23rd October, is a mass of flowers.

"C. S., *Bristol*," should regulate the time of "taking the buds" by the time he requires them to bloom. Early varieties when required during mid-season, say November the 15th, should be taken from lateral buds, and late sorts from crown buds. Dates are of little use, as seasons vary, also localities, and few growers will find time to refer to them. I have come to the conclusion that "T. P." has left the whole of the buds surrounding the central, and not disbudded, hence the Hen-and-chickens or bouquet of flowers.

Belle Paule, again. I should imagine that your correspondent "B. D. K.'s" plants of the above were attacked with red spider, or scalded during the very hot weather we had in August. I have often known the variety *Fleur de Marie* to perform the freaks described by "B. D. K." The plants grow freely until hot weather begins, and then gradually become weak, and the leaves assume a scalded appearance and often die. The cause of this I should like to know from some other growers of experience, as I could never satisfy myself with my own conclusions. Belle Paule is the correct name of the Japanese variety, but I had it from the French under the name of Belle Pauline. Messrs. Thibaut et Keteeler should read MM. Thibaut et Keteeler. The first is part English and part French.

Anrantium I see is changed in the Society's catalogue to *Aurantia*. Why this change? I had this variety sent me from Salter of Hammersmith about eighteen years ago under the first name, *Aurantium*. *Magnum Bonum* still retains its termination of "um." If *Magnum Bonum* is right, why is it that *Roseum superbum* is wrong, and changed to the one found in the Society's catalogue?—ROBT. OWEN, *The Floral Nurseries, Maidenhead*.

HEN AND CHICKENS CHRYSANTHEMUMS.—It may interest "T. P." to know that last year I had forty plants of Japanese Chrysanthemums that gave me hen-and-chicken buds. The buds were "taken" the first week in August; they did not develop perfect flowers and had to be cut down. This year not a bud was taken till the third week in August, and I have no blooms of the above description. But I believe that to have early-flowering varieties at their best in the first week of November the buds should not be taken till the first week in September, as on October 21st I had a few plants of James Salter and Elaine at their best.—A. L. G.

CHRYSANTHEMUM EMPEROR.—TAKING THE BUDS.—I am pleased to see that all are agreed that Emperor is not a hybrid Anemone. Can *Sœur Melanie* and other hybrid Pompoms be shown in a class for Pompoms? and, if so, would it be awarded the full number of points? I have sent a bloom, which appears to me more like a small reflexed than a Pompon. I also send wood and flower of a Queen of England, which you will see has many centres, and, from the notes in this week's Journal, there seems to be many about, and think by comparing notes we may find out the reason. Can it be through taking the buds too early? I wrote in the middle of May asking advice, as I thought they were making the first breaks too early, asking whether it would not be best to stop the breaks in June, so as to retard the crown buds. Mr. Molyneux advised to let them grow, and if they set too early to take them up to the next. The Queen family and other incurved commenced setting early in August, and as I wanted some early in the season and some late, I divided them. The plants that showed before the 10th of August of the Queens were taken up to the next bud, and now look promising for good if small flowers. Queen of England and Alfred Salter, taken on the 16th, are like the bloom sent. Empress of India, Lord Alcester, and Golden Empress, taken four and six days later, look much better, and I think will finish some big but rough flowers. The nearer I got to the 1st of September, Mr. Molyneux's date, the better they promise. Princess Teck and Hero of Stoke Newington, taken August 13th, are just showing colour, the centres being scaly, like the Queens, while buds of the same varieties, taken September 6th and 9th, are commencing to open, and look well. Barbara, taken August 11th, looks as if it would finish a good flower. At one time I thought they would be of no use. They have shown colour for four weeks, and they will take quite two more to finish them, as the centre is full of small florets. Cherab, taken August 14th, also promises a good flower. I do not see any resemblance between Belle Paule and Eve as Mr. Murphy says there is.—CHRYSANTHEMUM, *Sussex*.

NATIONAL CHRYSANTHEMUM SOCIETY'S CATALOGUE.—I thank "B. D. K." for his somewhat kindly criticism on this catalogue, in the preparation of which I took a small part, but I think he misinterprets my meaning when I complained, as he terms it, of the public taking little interest in the work. The difficulty mostly experienced in the preparation was to make the classifications and descriptions tally as nearly as possible with what we considered to be the general opinion amongst growers upon various controversial points. The first issue of this work was from time to time rather severely criticised, and I own there was much in it that required amending, and my complaint was meant to convey the query, "Where were the critics when they were mostly wanted?" Some of "B. D. K.'s" remarks are inconsistent. He first tells us what we ought to have done, and then blames us for what

actually was done in the direction he points out. I will answer the few queries in "B. D. K.'s" notes. He refers to the absurdity of the name Messrs. Thibaut et Keteeler having been demonstrated in the columns of a contemporary. I read most of the leading gardening papers, but I do not recollect having seen these demonstrations, but I would ask, Is there any more absurdity in the name of Messrs. Thibaut et Keteeler than in the names of Madame John Laing (his own quotation), Mons. John Laing, Mons. N. Davis, Madame Cannell, &c.? These are English names, and yet they are allowed to have French prefixes. With regard to Belle Paule, the reason we did not apply to M. Marrouch was because, unfortunately for the Chrysanthemum interest, this greatest of all Chrysanthemum raisers, to whom we owe so many of our superb back row flowers, died some time since, as already mentioned in the *Journal of Horticulture*, nor would there have been any necessity had he been alive, for the question was settled twelve months ago by referring to several of the French catalogues, including M. Marrouch's own agents, and that of his successors, to whom his collection was sold to. Independent of this information, I fail to see why Pauline, being a common female name in France, it should be the correct name in this instance. Monsieur Delaux is a Frenchman, and does he not know his own language when he gives us the names of Mons. Paul Fabre (masculine), and Mdlle. Paule Dutour (feminine)? Next as to Triomphe de la Rue des Châlets. If "B. D. K." will refer to the "Horticultural Directory," published at 171, Fleet Street, he will find Messrs. Pertuze's place of business is in the Rue des Châlets, and that the Triomphe was no doubt named after the nursery it was raised in. This is not surmised, however, for we have the confirmation in his catalogue. Next as to Bertie Randatler. Madame is taken from this name, because here we actually had one of those absurdities "B. D. K." speaks of, and I am surprised at his inconsistency. Bertier is a man's name, and when we search the records, as he would have us do, we find two distinct flowers, Bertier Randatler and Madame Berthier, which have been confused in this country. Lastly, as to the terminations "um" and "a" that seem to puzzle many people. We were called upon to settle this among other questions, and as we had not the benefit of "B. D. K.'s" help, we spent some six weeks in corresponding with Latin and French scholars, and were able to arrive at a conclusion on the subject.

I think "B. D. K." will thus perceive that the catalogue has not been compiled in the clumsy way he thinks; and considering the work took over five months of correspondence with every raiser in France that could in any way help us in the matter, I think "B. D. K." might himself have taken rather more pains in his researches before venturing to criticise.—N. DAVIS, *Camberwell*.

TAKING CHRYSANTHEMUM BUDS.—Your correspondent, "C. L., *Bristol*," appears to have made a mistake in "taking" the buds of his Chrysanthemums at too early a date. I consider he is to blame entirely for this. If he had followed my advice a little more closely he would perhaps not have found it necessary to condemn the dates I advised; and another thing I should like to impress upon him, that when he has had a little more experience he will find that if he wishes to have good blooms of the varieties he names first in his note he will be compelled to have them fully expanded by the time he states they are fully out, as these varieties are naturally rather early in blooming. I will now point out where "C. L." acted wrongly, and in consequence does not do justice to my advice. He says the buds were showing by the 1st of August. Now, there is a wide difference in this date and the time I noted—the 18th of August. Where I named the 18th inst. I quoted the varieties which were better for that selection of bud-taking. From the 1st to the 18th of August is a long time to a Chrysanthemum plant at that season of the year receiving proper attention, which "C. L.'s" plants did not have, or the buds would not have remained six days without being "taken" or removed. Perhaps he thinks this of no importance; if so, he makes a great mistake, and in consequence condemns my advice as being wrong. Now, surely this cannot be right and just. It would be better were he to act upon it first strictly, and I still contend, in spite of all "C. L." can say against it, that the times I gave are the best in a general way. One cannot be expected to search into all parts of every county in England and ascertain what times meet the views of every grower of Chrysanthemums. The "three growers from Devonshire" will continue to find as long as they reside in that part how difficult it is to obtain blooms in the middle of November fit to compete in the best company grown from crown buds as far south as the county named. "C. L." seems to consider that because the "gardener who is both a grower and exhibitor of these flowers" had "taken" none of his buds at the time of his visit, the last week in August, my advice was altogether wrong. Perhaps "C. L." would do better to wait and see if the authority he quotes proves by his own produce that his blooms are superior to those "taken" at the time I advise.

CHRYSANTHEMUM EMPEROR.—I should like to inform Mr. Davis that the reason my colleagues and myself disqualified the stand of Chrysanthemum blooms at the Crystal Palace Show last year, which contained the "supposed" Emperor, was, that we did not consider it was Emperor, but some other variety named in mistake. This was the simple reason. The point was well considered before we arrived at the conclusion that the flower did not belong to the Show Anemones, but to the Anemone Japanese. I know that Emperor in its true form is a first-class variety. In my note, p. 338, I said the "supposed" bloom of Emperor was not "true." What I meant was this, that it was not correctly named; it was staged in all good faith, but we did not consider it was that variety. Certainly I should not disqualify a stand of blooms containing

one variety so altered by imperfect cultivation as to be not generally recognised as the true sort, I should consider it a bad flower, and "point" it accordingly; but when a bloom has not the slightest resemblance to the variety which it is supposed to represent, it is hardly right to admit it.

I think Mr. Davis contradicts himself on p. 362. He says, "A white Princess of Wales shown by itself should not be disqualified, but if shown on the same stand as a white Mrs. Heale it should be." Now I ask, What is the difference between showing the white Princess by itself and showing it on the same stand with Mrs. Heale? The contention Mr. Davis sets up is that because the flower is white, and he knows when it is white it is "out of character," he will disqualify it, but a little earlier in the paragraph says he would not disqualify Emperor if shown out of character. I am afraid this latter admission anent Princess of Wales when white, hardly corroborates his previous opinion. When two blooms in one stand are true to the section which they represent there is then only one way when they can properly be disqualified, and that is when they are considered to be both of the same variety.

CHRYSANTHEMUM BELLE PAULE.—Mr. Owen is more fortunate with this variety than many growers in procuring bloom buds. I know a great number of growers who had an abundance of flowers from it last year, and this season very few promise to open, except in cases where, owing to the lateness of the setting of the buds (terminals) they will be of little use for exhibition. There is a great difference between flowers of this variety produced from terminal buds and from crown buds. My experience differs considerably from that of Mr. Owen. With me it is not a late variety, nor does it produce the best blooms from lateral buds. To show that it is not entirely a late variety I know where several are in bloom at the present time, and last year it was in good order early in November, and with many other growers likewise. Ours were all from crown buds last season; therefore I do not think that the selection of the buds is the cause of failure with this variety, but I do think that failure would occur to many people if they selected only the lateral buds, I mean failure to procure blooms good enough in quality to stage in competition.—E. MOLYNEUX.

PROPAGATING MADAME DESGRANGE CHRYSANTHEMUM.—In reply to "G. S., *Selkirk, N.B.*," who wishes to know how to propagate this variety and have it in bloom by the end of June or early in July, Mr. Muir sends the following note:—"At first when the stock is limited propagation must be done in the usual way by taking the cuttings in spring, rooting them, and topping and propagating again; but when they are plentiful, as they are here now, propagation in the ordinary way is avoided, and they are simply increased by lifting the old plants in March or April, dividing them into many pieces with a root attached to each, and replanting. From this it will be seen that plants raised in this way are much in advance of cuttings rooted in March, April, or maybe the early part of May, and by dividing them in this way there is no difficulty in having them to bloom from June onwards."

LADY SELBORNE.—For decorative purposes this variety, in either a cut state or growing on the plants, is unequalled at a time when the early blooms, Madame Desgrange and La Vierge, are fading, about the beginning of October, and just before the regular November blooming varieties properly develop. It is superior to Madame Desgrange in some respects, its form being more graceful, and its snowy whiteness renders it acceptable for cutting for any purpose, either using singly in specimen glasses, wreaths, or for harvest thanksgiving decorations. It is of free growth, producing its blossoms in abundance as a bush plant, but the finest specimens are obtained by growing the plants on what is termed the "big bloom" method—that is, striking the cuttings at the ordinary time in December, or even in January or February, allowing the plants to go without topping till they make their first break, then selecting three of the strongest shoots, removing all others, and when the growths break again naturally select three additional shoots, and from these take one flower from each stem, removing all other buds. Blooms produced from plants thus treated are much superior to those grown upon plants that are not disbudded, and amply repay for the loss in numbers which are obtained by not disbudding: 8-inch or 9-inch pots are large enough for one plant. Two may be grown in a 10½-inch pot, while three will do in a 12-inch pot, with the requisite assistance in the way of feeding with liquid manures.—E. MOLYNEUX.

BRAMLEY'S SEEDLING APPLE.

REPLYING to your correspondent's inquiry, p. 339, as to whether this variety is distinct from Warner's King, I should say there is no question; the only question is, Has he worked the true variety? Bramley's Seedling was raised in the neighbourhood of Southwell, Notts many years ago, and was made known to the public by the enterprise of Mr. Merryweather, nurseryman of that place, who exhibited fruit of it at the Apple Congress, Chiswick, and was awarded a first-class certificate by the R.H.S. I have seen trees twenty years old and orchards almost wholly planted with this kind, so it is pretty well known. The foliage does somewhat resemble Warner's King, but is not quite so dark in colour; the fruit is harder and heavier than Warner's. The tree is a heavy and regular bearer, but unless on the Paradise stock not suited for garden culture, as it is a rampant grower. For planting on the outside row of an orchard of standard trees nothing could be better, as it is hardy in itself, and would break the wind from its less vigorous companions. I think the question of habit of growth is one of importance, and one which is comparatively but little studied. How often one sees Apples planted as standards which are only fit for dwarf culture, and *vice versa*. But to return. All old inhabitants of

Southwell, who are lovers of fruits, when leaving the district, carry away a Bramley's Seedling. This summer I walked into a large garden, almost an orchard, in Lincolnshire, and asked the proprietor at once if he was a Nottinghamshire man, for his orchard was all Bramley's, no other kind. I found he came from the neighbourhood of Southwell, and had taken his original trees with him. Bramley's is a good well tried variety, but in my humble opinion will in the future play second fiddle to the New Northern Greening.—A. H. PEARSON, *Chilwell, Notts.*



THE practical articles on the CULTIVATION OF THE CHRYSANTHEMUM by MR. E. MOLYNEUX that have appeared in our pages will be issued in a few days in the form of a neatly bound volume of 110 pages, which will be sold at the low price of a shilling each, or post free 1s. 2d. from the author or from this office. Orders are now being booked, and will be executed in rotation.

— **TEA ROSES FOR POTS.**—An amateur has read "with great interest the discussion that has taken place in the *Journal of Horticulture* on the experience of Rose growers during the past season, and especially the remarks of 'D., Deal,' in last week's issue. I would be very much obliged if 'D., Deal,' or some other rosarian of experience would give the names through the *Journal* of three dozen good Teas for pot culture to afford blooms for cutting."

— **MESSRS. J. BACKHOUSE & SONS, York,** referring to the illustration of *CATTLEYA TRIANÆ BACKHOUSIANA* in the preceding issue of this *Journal*, remark that in the typical variety "the petals are heavily flaked with deep purplish crimson. In the labellum also there is a streak of intense purple passing backwards up the tube, nearly white on each side and shading into clear lemon as it approaches the purple front."

— **WE** are informed that the Executive Council of the Liverpool INTERNATIONAL EXHIBITION have awarded to Mr. John Matthews of Weston-super-Mare a silver medal for the terra-cotta ornaments which he is showing at the Exhibition. This exhibit has attracted much attention at Liverpool, and has been generally admired. The medal now awarded makes the fourteenth which Mr. Matthews has received for his products.

— **MR. E. JENKINS** wishes to state that in his note on "BEDDING VIOLAS" in the last issue he has "wrongly described the variety 'Columbine,' which in reality is white striped with lilac, and the description there given for Columbine actually belongs to the variety called 'Clown.'"

— **WE** learn that at the Liverpool SHIPPERIES EXHIBITION Mr J. Bramham has been awarded the gold medal for his Allerton Priory boiler, and a silver medal for general excellence in wirework, both these being the highest awards.

— **IN** referring to the LIVERPOOL AUTUMN SHOW last week it was stated that it would be held in St. James's Hall, a clerical error for St. George's Hall, where the Show will be held on the dates named.

— **AFTER** a long period of ill health and an apparent recovery MR. Z. STEVENS OF TRENTHAM GARDENS died somewhat suddenly on the 20th instant, in his fifty-third year. For over twenty years he had held the position of head gardener to the Duke of Sutherland at Trentham, and had distinguished himself in the culture of Orchids and fruit, and gained the reputation of a skilful practitioner. Mr. Stevens spent some years of his early career in Trentham as journeyman and foreman, but subsequently left to enter the service of Messrs. Veitch & Sons at Chelsea. When Mr. Henderson retired from the charge of the Trentham Gardens Mr. Stevens was appointed his successor.

— **FOR** such a late period in the season Messrs. H. Cannell and Sons have a remarkable show of TUBEROUS BEGONIAS at Swanley, quite dazzling in their brilliant shades of scarlet, orange, and crimson, while in rose, pink, blush cream, and white there are abundant soft tints to modify the brighter hues. The flowers too are of wonderful size for the middle of October, after a continuous flowering of several months. Bright as

the Zonal Pelargoniums are in other houses, the Begonias in comparison render them almost dull. For a really effective display of varied colours nothing can surpass a first-rate strain of Tuberous Begonias.

— THE first annual CHRYSANTHEMUM SHOW AT HITCHIN will be held in the Corn Exchange on Thursday, November 18th, this year. Twenty classes are enumerated in the schedule, the prizes ranging from 20s. to 1s.

— WE are requested to state that the death of MR. GEO. KNIGHT, gardener to W. Peachey, Esq., of Ebernoe occurred on the 22nd of September at the age of seventy-seven. He was gardener at Ebernoe fifty-two years, and is succeeded by Mr. H. Williamson from the Royal Gardens, Kew.

— THE Honorary Secretary of the proposed SUTTON (Surrey) CHRYSANTHEMUM SHOW informs us that in consequence of the inability of the Committee to obtain a suitable place the exhibition that was announced cannot be held.

— "FOREMAN" writes, "Having a fancy to test novelties that are sent out every year, I obtained seeds of A NEW MELON from one of our leading nurserymen called La Favourite, a green-fleshed variety. The seed was sown on the 1st of May, and the plants when fit were pricked off into 3-inch pots. When ready to be planted out they were placed in two different position, three in 12-inch pots facing the west, two in a Melon frame facing south-east. The fruits grew rapidly to the end of July, when they ought to have begun to change their appearance, but strange to say, out of fourteen fine even fruits not one seemed inclined to change. I let them hang till the end of August, with no change whatever, and so they were cut off from the plants. Those in the frame were left till the second week of September, with the same result, quite green and unfit for table. I should like to know if any gardeners who have been growing this variety have experienced any difficulty in getting it to such perfection as described in the catalogues. I must state that other sorts have done remarkably well placed in a similar position. Just to mention a few of the best—William Tillery, Read's Scarlet Flesh, McIndoe's Best of All, and Scarlet Premier, the last-named coming in very quickly.

— WE have received the first number of a new weekly gardening paper published at Berlin, entitled *Der Praktische Gartenfreund*, which appears to have the literary support of a number of the most important gardeners in Germany. It is edited by Mr. Th. Lange. We wish it success.

— ZONAL PELARGONIUMS FOR WINTER FLOWERING.—"G." writes:—"For brightness and enlivening other flowers these are indispensable. Having tried most of the varieties, I find the following are the best:—John Gibbons, orange scarlet; Henry Jacoby, crimson; Surprise, salmon; Aida, white, suffused rosy pink; Lady Bosworth, bright rose; Lady Sheffield, pink; Queen of the Belgians, white. Those have single flowers. Of doubles, F. V. Raspail, scarlet; Emile de Girardin, rose pink; the Lord Mayor, purple pink; President Leon Simon, orange scarlet; Grand Chan Faideherbe, crimson; Etendard, claret; Belle Nancienne, salmon red, white margin; Le Cygne, white. In autumn and winter there is nothing that can vie with Zonal Pelargoniums. The following are very fine:—Lord Rosebery, cerise red; Swanley Gem, rosy salmon, white centre; Kentish Fire, crimson scarlet; Lord Chesterfield, magenta; Edith Pearson, rosy red, tinted salmon; Golden Glory, scarlet suffused orange; Commander-in-Chief, rich scarlet; Atala, orange scarlet; Mrs. Gordon, crimson, white eye; Ajax, scarlet; Metis, crimson; and Favourite, cerise scarlet. In a temperature of 50° to 55° they bloom all the winter."

— A HINT TO PLANTERS.—It has been brought to our notice that as the prices of trees are generally low this year and labour also cheap, the circumstances are favourable for extensive operations in planting. There is no doubt that a great deal of planting might be done to ultimate advantage, and the sooner the work is in progress the better.

— "J. A. W., Alderminster," writes as follows on JUDGING FRUIT AND POTATOES. "We are now in the Rose and fruit catalogue season. My letter bag is 'bulged out' every morning with catalogues. I do not consign them to my waste paper basket, for one can learn much from them. But there is something which I object to be found in every catalogue—e.g., say it is the description of an Apple, 'Large, highly coloured, free bearer, good keeper; second quality only, but indispensable for exhibition.' Potato this time. Well, we all know how

many prizes International Kidney has won; but I ask, On how many soils can it be grown fit for culinary use? Surely fruit and vegetables are meant to be eaten rather than looked at and admired, and I am strongly of opinion that, *ceteris paribus*, quality should in every instance take priority of size, appearance, or shape. Beauty is only skin deep. When will judges refuse to be attracted by the pretty face?"

— THE Autumn Show of the WINCHESTER HORTICULTURAL SOCIETY will be held on November 16th and 17th. The chief prizes for Chrysanthemums are 60s., 40s., 25s., and 15s., for groups of plants arranged for effect, and similar amounts for twenty-four cut blooms in not less than eighteen varieties. We observe a class for twelve blooms in not less than eight varieties for persons who have not won a prize for Chrysanthemums in the open classes at any exhibition. Prizes are also offered for fruit, miscellaneous plants, and floral decorations.

— MR. STEPHEN CASTLE has sent us from the West Lynn Vineyard, King's Lynn, some interesting samples of VARIATIONS IN GROS MAROC GRAPE. Three bunches are before us of this variety, and between two of them the difference, both in size and shape of the berries, are equally as pronounced as in Mr. Chaffin's two bunches of the same variety as grown by Mr. William Taylor and exhibited at the Crystal Palace and South Kensington this year. The larger of the two bunches from Bath was regarded as Gros Colman by not a few gardeners who inspected the exhibit and compared the Grapes with others in the classes for the two varieties mentioned. In that case Mr. Taylor informs us that Mr. McIndoe has indicated the cause of the variation. The largest bunch sent to us from West Lynn almost exactly resembles the supposed doubtful Gros Maroc bunch from Bath. The berries are as large and as round as good average samples of Gros Colman, and two experienced Grape growers who inspected the bunch pronounced it Gros Colman. This bunch of Gros Maroc was cut from a Vine inarched on a Hamburgh in apparently robust health, but which produces red Grapes—that is to say, the fruit on the Hamburgh rod is not coloured, while Gros Maroc supported by the same roots is excellently coloured. How is that? The other two bunches of Gros Maroc are from Vines on their own roots. The berries of one are round, or nearly so, and small, resembling in appearance second-rate Black Hamburghs, while the berries of the other bunch are distinctly oval, quite as much so as characteristic examples of Mrs. Pince are. The Vine bearing these oval-shaped berries has been fed with chemicals, that producing the smaller and round berries not having had such assistance. As regards quality, the oval-shaped fruit far exceeds the other from the Vine on its own roots, and is quite equal, if not superior, in flavour to the very fine Gros Colman-like Grapes cut from the Vine worked on the "red" Hamburgh. This, and Mr. Chaffin's bunch that has been the subject of discussion, are the finest examples of Gros Maroc we have seen, and the berries of both, with the exception of one or two in each bunch, were round. Mr. Castle does not say the whole of the bunches on the three Vines are like those before us, but we presume such is the case, and not one of them exactly represents Gros Maroc in its typical or normal form, though we have no doubt that all of them are of this variety. It is very evident that this Grape is subject to considerable variation, and that the shape of the berry alone is not a sufficient test of identity. We are obliged to Mr. Castle for the samples referred to.

— THE PRICES OF FRUIT AND VEGETABLES have fallen considerably this season, as can be judged by the following figures supplied by a Covent Garden firm. Of course, the fruit market is especially liable to fluctuations, and it must not be assumed that the prices of this year will be the prices of next. But irregularities are becoming less. A glut of fruit of any particular kind in this country nowadays means the stoppage of importations, and, on the other hand, any deficiency of our own crops immediately sets up a stream from abroad. Though prices go up and down a good deal therefore, they do not vary as they once did, and there is a constant tendency downwards, due to greater competition, more extensive growths, and the opening up of new sources of supply. The criterion pointed to is that afforded by the average prices paid by the jam manufacturers. In 1878 to 1880 these manufacturers had to pay £18 to £20 a ton for Gooseberries; this year they have been buying them at from £4 to £6 a ton. Black Currants they bought at £28 to £32 a ton; this year at £10 to £12. Red Currants formerly fetched £18 to £26; this year £10 to £12. Strawberries, which a few years ago fetched £28 to £35, have this year averaged £16 to £20; Raspberries have fallen from an average of from £35 to £42 to an average of

£12 to £15; and Plums from prices ranging from £14 to £28, to £4 or £5 a ton. Apples have not materially fallen, though even in these the maximum has been £8 a ton instead of £10, as they were six or eight years ago; and importations from America, which fetched from 20s. to 25s. a barrel, have this year sold at from 10s. to 12s. 6d. These are the jam manufacturers' figures, and they indicate roughly the variations in the cost of fruit to the general public. Taken together with the low price of sugar, they certainly ought to indicate a very cheap supply of jam this winter.

— THIS year has been quite exceptional, and these figures must be read in the light of that fact. But it is unquestionable that the past few years have witnessed a remarkable development in the popular demand for fruit, and that demand has called forth a supply decidedly in excess. There is general testimony to the effect that the average price of fruit never was so low as during the past few years. And pretty much the same may be said with respect to vegetables. There has been a great depreciation in this market, particularly in the matter of Potatoes, the most important of vegetables. There is a difficulty in presenting figures with regard to them, just as there is with fruit. Ten years ago there was a dearth of home-grown Potatoes, which were fetching £8, £9, and £10 a ton in the wholesale market. From the year 1875 till 1879 we imported largely from Germany, paying for Potatoes far inferior to our own from £4 to £7 a ton. The best English Potatoes, such as ten years ago were fetching £8 or £10 a ton, are now selling at from 45s. to 80s. a ton. A comparatively small quantity of a superior kind are fetching from 80s. to 100s., but the bulk of the present supply are selling at from £2 to £4 a ton. Several other kinds of vegetables are almost equally cheap, and though in all such things we are greatly dependent on seasons, there are unmistakable and very decided downward tendency.

HEATING BY HOT WATER.

WATERTIGHT ASHPITS.—HOT v. COLD WATER.

I WISH to thank your correspondent, not only for his commendatory remarks, but for bringing forward the subject of water in the ashpits. This matter may not have been written about in the various gardening periodicals previous to Mr. Burton's article two years ago, which I do not remember; perhaps he will say in what volume and at what page his notes are to be found. This, however, is not a new practice, for I remember having to keep ashpits full of water some sixteen or seventeen years ago, and have more recently had to carry out the same practice in other gardens. The system may not be general, it is nevertheless carried out in many gardens. I prefer stoking with water in the ashpit, if only for the sake of reducing the quantity of dust about the fire when cleaning and clinkering. If my observations have been correct the fire burns more brightly and clearly when the water in the ashpit is comparatively cool than when it is raised to a high temperature by absorbing heat from the fuel. The fire more resembles that of a cold frosty night, the draught also appears better. Cool water beneath the bars would have a tendency to keep them cooler than when heated vapour only reached them, the temperature of which it would be difficult to estimate, for it would be increased materially in its passage from the water to the bars.

Again, a steady flow in and out was advised for the purpose of saving labour in keeping the ashpit full of water. To accomplish this under boilers capable of heating 8000 or 10,000 feet of 4-inch piping would entail considerable labour. When firing hard, even when the ashpit was full to commence with, say at 6 P.M., it would be evaporated long before the morning, hence the value of a constant flow in. This, however, might be remedied by deep ashpits that would contain a good volume of water, but the flow in and out would be as practicable as this method and would insure the ashpit being kept full. If advantages arise from having the ashpit full of water, the bars would be benefited in a small degree only if empty half its time. It is to guard against this uncertainty that a flow in was advised. The outlet was advised to carry off superfluous water; it was not my intention to convey the idea that a full stream should be allowed to be constantly running in and out. This would mean a large waste of water, which I condemn. But it was intended that the flow in would be more than equal to the evaporation, so that a little would pass out to keep the water much cooler than would otherwise be the case. It would be very difficult indeed to keep the water cold directly under a large mass of burning fuel, where the heat would be intense. The water would not enter at a lower temperature than 47° to 50°, and I did not for a moment think anyone would conclude that I intended it to remain at this temperature without absorbing heat from the fire above. What I intended to convey briefly was a prevention of those high temperatures Mr. Burton has pointed out as having taken place in his own practice. High temperatures cause enormous evaporation, and the greater the latter the more the labour required to keep the ashpit supplied with water, unless some such plan as I have advised is carried into effect.

Where the water supply is deficient and the drainage of a stokehole impossible I have not, and do not, advise the use of water in the ashpit by a flow in and out to prove a nuisance. It would be better to

have none. Where the stokehole is drained and the flow of water into the ashpit steady, it would be essential to have an outlet, so that the overflow and evaporation would be equal to the inlet. This would keep the water cooler than could possibly be the case by Mr. Burton's system. This is what I mean by keeping the water cool. I am of opinion that the cooler it is kept the better chance it will have of keeping the bars firm and hard.

I may have observed wrongly on these points, and shall not be surprised if the conclusions to which I have arrived are proved to be more imaginary than real. Because I am already certain that for small boilers, or say those capable of heating 1500 or 2000 feet of 4-inch piping—I mean boilers fully capable of doing this work, not those that may be made to do it by hard firing only—need not have water in the ashpit. Mr. Burton's boiler has worked four years on his principle with water in the ashpit and the bars are sound. I have a gold medal boiler that was put in eight years ago last spring for heating the conservatory that contains 1500 feet of 4-inch piping, and the fire bars are perfectly sound, and have the appearance of lasting for some considerable time yet, for they look as good as they were at first. Now, in this ashpit not one drop of water has been employed.

From Mr. Burton's remarks we would conclude that bad stoking was the result of the bars becoming "hoisted" or raised out of their place, for if the clinkers are the cause in his and other cases they are not in mine. The chief cause of "hoisted" bars is the great heat to which they are subjected, which causes them to expand. The majority have a small projection on each side of the centre, and when the bars become jammed as well as the ends by expansion the remainder of the bar is twisted, or the whole bar is lifted out of its position. In our large boilers the bars are in a season badly burnt, and become so twisted that they have to be replaced. When new bars are cast they will be made for these boilers on a slightly different principle, but whether they will act remains to be proved, and therefore nothing further on the subject will be said at present.

Turning again to the subject of water in the ashpit, it will be very interesting to me if others will state their views on the subject, for I have doubts whether any real benefits arise from it or not. I did not intend that sentence to have appeared in my paper, but it was overlooked when revising it for the press. No water is used under any of the large Cornish form of boilers used for steam purposes, and greater heat is maintained than we frequently employ for heating our fruit and plant houses; in fact, I have never seen water in the ashpits of the boilers used, either for ships, locomotives, or any boiler for generating steam, and I think if the advantages arising from such a practice were great it would have been adopted for these long ago. The fire bars used for these boilers are thinner than we employ in gardens, expansion will therefore be less and the bars less liable to become twisted. There is something in this, I think; what does Mr. Burton, "Thinker," and others say? I could the better understand the value of the hot vapour advised by Mr. Burton if the bars absorbed moisture, and contracted when exposed to the direct heat of the fuel, and coiled up by the increase of temperature expelling moisture from their pores. The bars here coil up or drop in the centre, but this is due entirely to expansion. There is a considerable difference between the heat maintained in large boilers that are required to heat large quantities of pipes a good distance from the furnace than is the case with those of a smaller size with probably not one-third the quantity of piping to heat, and that perhaps no great distance from the fire. It is in these very large boilers only that the bars become badly burned and twisted by the intense heat to which they are subjected. I have never known the bars in smaller boilers suffer to any great extent, and if they will last eight or ten years there is little reason to complain of them.—WM. BARDNEY.

I HAVE been studying for three years in an economical point of view the "watertight ashpits," and after what Mr. Bardney and Mr. E. Burton have written I thought I may venture to give your readers my views on the subject. The continual wheeling into the stokehole of coke, the stoking, the taking away clinkers, twisted and burnt furnace bars, the late hours in cold weather to those on duty, the expense of coke, and carting from the station at inconvenient times, comprising a sum of £150 annually, all these things determined me to make a new departure in our system of firing. I wrote to Swansea for a truck of anthracite coal. The men said it would not burn. Not to be beaten I did the stoking myself (but I was) and had to mix coke with the coal. I was not satisfied, and had watertight ashpits made with cement the length and width of the furnace, and 18 inches deep. The change so far has been great. We can now burn coal only, and from close observation we notice that the more steam rises from the water under the bars the brighter the fuel burns in the furnace. We have learned that by drawing out the damper, opening the ashpit door 2 inches, the fire burns best and brightest. The heat from the fine glow can be retained when necessary by almost closing the damper. We have in use gold medal boilers and one common saddle. I went specially last winter to St. Margarets, East Grinstead, to see two large furnaces that heat a large building. The watertight ashpits have been in use for three years, previous to that the furnace bars had at least to be renewed annually, costing £12 a furnace, but for the three past winters the same bars have been in constant use and was then sound. Mr. Laing informed me that a greater heat can be had now than before the watertight ashpits were made. Welsh coal is also used, considering it to be more economical.—ALBION.

I HAVE not seen many ashpits under boilers for heating glass houses formed to contain water, but I know it to be a plan worthy of being generally adopted. Here we make our own gas, and as I have to see to

the management of it I know a little of how matters work, and each ashpit is made with bricks and cemented to hold water. They will hold about six gallons, and they are never allowed to become empty when the fires are on; but they only require to be filled twice in the twenty-four hours, and this does not entail much labour; but it is a great advantage to have it, as the moisture underneath the bars prevents their burning or becoming crooked, and very few clinkers are formed, although a great deal of small rubbishy coal is used. The fires are large and very strong, and are more severe in their action on the grate than any boiler fire, as there is no banking down in the gas house, and yet the water keeps all going on smoothly for years. The introduction of a constant stream of water under the bars may have its advantages, but the plan I speak of answers so well that I would never be inclined to introduce any other mode of working.—J. MUIR.

ROSE MARIE BAUMANN.

IN reading with much interest and general agreement the admirable notes upon Roses for October 14th, I must confess to great astonishment when I came to "Now for Marie Baumann." She has been thoroughly tested, and is pronounced "sometimes respectable." Imagine her indignation! The reigning queen of the last twenty years, the head of the poll I do not know how often, the victor of a hundred fights, come down to faint praise like this! It reminds me of the slip of the chisel by which a highly respected British matron was represented as "remarkable for her chastity," instead of "charity."

I only remember Marie Baumann being once beaten in a Rose election, and that by Maréchal Niel, when Teas and hybrids were taken together. I quite admit an inferiority to A. K. Williams. There is no Rose equal to that. From the first frost-damaged bud of spring to the last weak attempt of autumn it always comes true. For size, colour, shape, and substance, the four great requisites, it is unequalled; but I would submit that Marie Baumann is not very far behind.

In my own limited but long experience I have had it in winning boxes more often than any other Rose I could name. There is another Rose nearly related, and now also being pushed into the background by newcomers, which I prefer to it when perfect; but Alfred Colomb is not seen once in twenty times in perfection. When true to type to my mind it is unequalled for colour, the red seems to flow from it; it almost answers to the description of a Rose on fire.

Marie Baumann is accused of mildew. I have never found it worse than its neighbours; but I gladly endorse the immunity of Ulrich Brunner, that wonderful seedling from Paul Neyron. We must speak of a Rose as we find it, and certainly one garden's experience is not that of another; but were I condemned to one exhibition Rose, bar A. K. and Maréchal Niel, it would certainly be Marie Baumann. I should have hoped sometimes still of the best Rose in the show, and very often of winning with a stand of twelve or six of the same kind. What Mr. Horace says of his friend Lalage I must still say of my other friend, perhaps quite as "respectable"—

"Place me where on the ice-bound plain
No tree is cheered by summer breezes,
Where Jove descends in sleety rain,
Or sullen freezes;—

"Place me where none can live for heat,
'Neath Phœbus' rosy chariot plant me;
That smile so sweet, that form so neat,
Shall still enchant me."

—A. C.

REVIEW OF GRAPES.

I TRUST that Mr. McIndoe does not feel hurt in any way on account of the conclusions at which he and two "well-known Grape exhibitors" arrived in reference to the doubtful bunch of Gros Maroc Grape in a collection at the September Crystal Palace Show not having been accepted by me as being absolutely correct. I would remind your correspondent that the fact of the said doubtful bunch having been awarded, in connection with the unquestionable bunch of Gros Maroc, first prize in the class provided for that variety at South Kensington the second week in September, does not necessarily prove that the two bunches were the same variety, though to those unacquainted with the circumstances connected with the "censorship" at both the Palace and South Kensington Shows it would appear to do. I may be permitted to say there is no reader of the Journal better pleased at Mr. Taylor's success in the Grape classes at the shows last month than I, and I wish him every success in the future. It is simply the grounds given by Mr. McIndoe in support of the conclusions at which he and the two "well-known Grape exhibitors" arrived that induced me to say anything in the matter, as I could not fall in with his (Mr. McIndoe's) views regarding the cause of the difference in the two bunches of Grapes.

I admitted in my previous note what all practical gardeners will admit—namely, that ripeness or unripeness of the wood has a good deal to do with the production of compact or loose bunches; but further than this I cannot go, not even to oblige Mr. McIndoe, by saying that the condition of the wood would alter the "shape and formation" of the berries—that is to say, an unripe weak shoot would, according to your correspondent's statement at page 321, produce a small bunch of Gros Maroc Grapes, consisting of oval and heavily bloomed berries, while the ripe strong shoot of the same Grape Vine or variety produces a large bunch, consisting of round and lightly bloomed berries. How can Mr. McIndoe

prove this? It may ease Mr. McIndoe's mind to know that he and the two "well-known exhibitors" were not the only Grape-growers at the Crystal Palace Show who took the "trouble" to compare the bunches in question with those of Gros Maroc and Gros Colman in the classes provided for them, and to say that the "back of the berries and footstalks" were noticed and acknowledged to be characteristic constituents of the bunches of the respective varieties by—AN EXHIBITOR.

WITH regard to the two bunches of Gros Maroc shown by me at the Crystal Palace and South Kensington, I have to say that they were both grown on a Vine raised from an eye in the spring of 1884. They were the only two bunches of that variety on the place, and although there are several Vines of Gros Colman, some old and some young, none of its fruit was coloured at the time. Had I been sufficiently dishonest to stage one bunch under a wrong name, surely it would not have taken an extraordinary stretch of conscience to put up another to match it. The larger bunch was grown on the leader, which was very strong, and the berries during the second swelling laid on a remarkable amount of flesh, and grew out of the normal shape. I have before occasionally noticed a tendency with oval Grapes to become less oval on young vigorous Vines.—WM. TAYLOR.

MAXILLARIA SANDERIANA.

AT the Orchid Conference last year Baron Schröder exhibited amongst many other choice novelties and fine specimens, a plant of a new Maxillaria, which was named in honour of Mr. F. Sander of St. Albans. It was greatly admired for its distinct and bold character, a first-class certificate being awarded as a fitting recognition of its merits. The species has been exhibited on some occasions since, notably by C. Dorman, Esq., at the June meeting of the Royal Horticultural Society this year, when its peculiar characters were again well shown. The plant is in the way of *M. grandiflora*, and has been aptly compared to *Lycaste Skiuveri* in the size and general form of the flowers. It is dwarf in habit, with strong lanceolate leaves and short pseudo-bulbs. The sepals are broad, ivory white, stained and spotted with very dark heavy purplish crimson at the base; the petals are much smaller, with the spots of a similar colour on a white ground, but more scattered than on the sepals. The lip is a dark reddish purple. The bold appearance of the flower and its wax-like substance render it one of the most handsome and distinct of the genus. It was introduced from Peru.

TREES AND SHRUBS FOR LAWNS.

CEDARS.—In young trees they are beautiful; at their best they yield to none in majestic grandeur, and in old age are singularly picturesque.

The Cedar of Lebanon (*Cedrus Libani*), a noble spreading tree with a flat top. The width is as great as the height, many noble specimens being found in this country of a very massive and sublime aspect; 60 to 80 feet.

The Silver or Mount Atlas Cedar (*Cedrus atlantica*), resembles the Cedar of Lebanon in general appearance, but does not assume so fully the shelf-like disposition of its branches. It is also of freer growth and more silvery appearance. It will probably attain to larger proportions than the Cedar of Lebanon.

The Deodar or Indian Cedar (*Cedrus Deodara*), is perhaps the most noble of all drooping Conifers. As a single specimen it is unsurpassed in beauty, the foliage having a peculiarly silvery appearance. There is a variety of this—viz., robusta, with longer and larger leaves, and more glaucous, and though it is more vigorous it is not so dense in habit, a large tree requiring space for proper development.

The Cedars like a good soil and water near the surface. The Deodar thrives only for a time on shallow soils, and is not suited for an exposed situation, indeed it requires shelter.

CHILI PINE.—The Chili Pine (*Araucaria imbricata*) is one of the noblest of trees. Its symmetrical and unique form is most picturesque. It does not thrive in shallow soil, liking a good deep soil and cool bottom, but free from stagnant water. On a wet base and shallow soil it is much given to the loss of its lower branches.

SILVER FIRS.—Regularity and symmetry are the peculiar characteristics of these, the branches being horizontal to the stem, and are pyramids in comparison with the Cedar of Lebanon, the branches being spreading at the base and diminishing gradually upwards to a point. They are well adapted for specimens.

The Noble Silver Fir (*Picea nobilis*), is perhaps the most beautiful of all, especially in its var. *glauca*. Its rapid growth, and the fine contrast of the silver on the young branches, and the massive deep colour of the old is very effective; indeed they are models of beauty.

The Lovely Silver Fir (*Picea amabilis*).—Truly beautiful, of dense habit, and not so spreading as many, the foliage being deep green above and silvery beneath, imparting a very striking and beautiful effect. Large tree.

Nordmann's Silver Fir (*Picea Nordmanniana*), is of fine symmetrical habit, forming a majestic and handsome specimen. It is very effective.

Perhaps the finest of the Silver Firs is *Picea concolor violacea*. In its young growths it is quite charming and of compact growth. It is of comparatively recent introduction, and apparently very hardy. Large tree.

The Pinsapo Fir (*Picea Pinsapo*).—Densely branched, the branches very thickly placed in whorls, and spreading horizontally, which from its perfect symmetry is strikingly handsome, being a round or flat cone-shaped tree of great beauty. It is also very distinct. There is a variety (*P. Pinsapo glauca*) with all the leaves of a silvery or glaucous colour. Requires space laterally. Not tall, but spreading.

The Superb Silver Fir (*Picea magnifica*), is much after the *P. nobilis* style, but is more robust, and certainly is very beautiful. In limited collections the two need not be grown, especially as lawn trees, notwithstanding it is quite distinct.

The Silver Firs delight in a strong moist loam and a cool bottom or clay. On shallow soils they have a tendency to become yellow and lose their leads, which is very determined in *P. Nordmanniana*, the worst of it being that the trees thrive well enough for a few years, and in eight years or so they assume a dingy colour in early summer.

SPRUCE FIRS.—The White Spruce (*Abies alba*).—Fine pyramid shape, fast growing, and forming a fine tree of a beautiful glaucous-whitish hue, which shows to great advantage in association with Pines. It is very hardy, but like all the Spruces is not nearly so fine in a bleak or sheltered situation. It is, perhaps, best seen on a north aspect, or with others and equally tall trees to the south, and its fine appearance is then brought out

The Corsican Pine (*Pinus Laricio*).—This forms a handsome pyramidal tree, grows more quickly than any Pine I know, and will stand wind even better than the Austrian Pine. It, however, is not nearly so dense in growth, and is much more pyramidal in habit. For bleak situations this and the Austrian Pine are invaluable, and that must be my apology for directing attention to them, as to have lawn trees they must have shelter in some localities, and none furnish it better than those under notice. Keep them thinned so that they can retain their lower branches.

The Taurian Pine (*Pinus Pallasiana*).—A large pyramidal tree, but with a somewhat roundish head, compact in growth, but the branches are disposed irregularly, and being robust have a singular appearance. It is of stiff habit, the leaves dark bluish green, several inches long.

Bentham's Pine (*Pinus Benthamiana*).—Noble in aspect, its long dark green leaves closely set on stout somewhat spreading branches are singularly if not grotesquely beautiful.

The Swiss Stone Pine (*Pinus Cembra*).—A very handsome dense-growing tree, and can hardly be dispensed with in ornamental scenery. It has a peculiar fitness for knolls on slopes, especially where the scenery is a water one. The Siberian Stone Pine (*P. Cembra sibirica*) is of slower growth, and is very ornamental from its glaucous green leaves.



Fig. 57.—MAXILLARIA SANDERIANA.

very strikingly. We have the blue or glaucous variety of dense habit and smaller dimensions, which is very beautiful from its bluish green foliage. It is very fine as a lawn tree.

The Douglas Spruce (*Abies Douglassi*).—Conical in form, graceful from its numerous pendulous branches covered with bright green foliage. A fast growing and most beautiful Fir, making a grand specimen. Large tree.

Engelman's Glaucous Spruce Fir (*Abies Engelmanni glauca*).—Dense glaucous blue tinted foliage, yet of free hardy growth, rendering this one of most lovely of the Spruces, if not the most beautiful of the family. Japanese Spruce (*Abies polita*) is very distinct, and is to Spruces what *Picea Pinsapo* is to the Silver Firs, being very beautiful if for nothing less than its decided distinctness. It promises to be very handsome. It is quite hardy and of free growth. The Oriental Spruce (*Abies orientalis*) is a beautiful and densely branched tree, and very ornamental. Large tree.

The Spruces thrive best in a moist soil, and preferably light, but from their shallow rooting will grow in most any kinds of soil except gravelly and hot soils, in which they are subject to red spider, and soon assume a stunted appearance; in fact they like a cool moist soil, and with shelter attain noble proportions, indeed there are few finer trees than the Norway Spruce (*Abies excelsa*) as a specimen. Lord Clanbrasil's Spruce (*Abies Clanbrasiliana*) is a dense bush, useful for lawns, never exceeding 4 feet in height, and there are many other dwarf forms.

THE PINES.—The Austrian Pine (*Pinus austriaca*).—I consider this the most useful of the Pine family from an ornamental and sheltering point of view, and for forming a background its rich dark foliage is unique. It will grow anywhere near the sea, and at a high elevation on mountains, on clay soil, and on sandy, on peat soil, and on limestone. It is, indeed, invaluable. It forms a dense tree, closely branched, thickly clothed with dark glossy green leaves. As a specimen it is superb.

The Lofty Bhotan Pine (*Pinus excelsa*).—Free growing, very spreading, withal pyramidal. It is very handsome, its silvery slender long leaves giving it a silvery-grey colour. Though its branches are very flexible it does not succeed well in an exposed situation. Large tree, requiring much lateral space.

The Pines, being hill trees, like a soil from which water drains freely, and they luxuriate in ground that will not support Spruce or Silver Firs; but they will grow in clay soil or any other, only not saturated with water.

THE MAMMOTH TREE.—*Wellingtonia gigantea* is, perhaps, the best known of the Conifers and most prized. It is very beautiful, forming an exceedingly symmetrical cone or sugar-loaf of a pleasing bluish-green colour. It is not suited to exposed situations, for after it attains some height it is driven more or less from the perpendicular towards the east, and becomes less plentifully furnished. It seems to require a deep soil, and in such only have I seen it healthy after a quarter century growth. On shallow soils it grows well for a time, and is very beautiful. It requires shelter from the west in exposed situations, and is more of a valley than hill tree. The Weeping Wellingtonia is very fine, and is perhaps the best of the weeping Conifers, unless it be the Pendulous-branched Spruce (*Abies excelsa inverta*), which is very elegant.

THE CYPRESS.—Lawson's Cypress (*Cupressus Lawsoniana*) is decidedly the most graceful of lawn trees. There are many varieties. *Argentea* is suffused with a charming glaucous tint, and is not so free in growth as the species; *alba pendula*, glaucous, drooping; *aurea variegata*, of moderate growth; *Allumi*, a fine form; *compacta*, a close-growing variety; *Frazeri*, of free growth; the beautiful round-headed *gracilis*; the purple-tinted *pincherrima*; *Silver Queen*, very silvery and beautiful; *lutea*, with its golden tint, and of free even vigorous growth; *nana* and *nana glauca*, the

two last very dwarf and neat, and some others. *C. Lawsoniana erecta viridis* is of upright habit, of a beautiful green hue: the variety *stricta* is very fine, forming very handsome specimens. The Lawson's Cypress, though it succeeds most anywhere, does not do in exposed bleak situations. It is indeed a valley tree, or needs shelter from strong winds; large tree in favourable situations. Varieties described as vigorous also require space.

The Nootka Sound Cypress (*Cyprinus nutkaensis*).—Erectness with gracefulness are the characteristics of this tree. It is of darker hue than *C. Lawsoniana*, and a tall beautiful tree, none finer for specimens. It is very hardy. There is a variety *viridis* with brighter green foliage very pleasing, and there are dwarf forms that are beautiful. The variegated form affords variety of a kind that may well be dispensed with. Charming as they may be in other trees, the variegation in Conifers is not taking. Large tree, or medium large.—G. ABBEY.

(To be continued.)

APPLE AMERICAN MOTHER.

Two years ago I wrote to you about this splendid Apple. Again I have some beautiful fruit, the colour not quite so rich as before perhaps, but you will judge from the specimens for yourself. Archdeacon Lea (my archdeacon), was surprised at the wonderful flavour of this Apple when he tasted it here last week, and we are most of us aware of his experience in fruit culture, and his refined "taste" in matters horticultural.—J. A. W., *Alderminster*.

[The fruits are of good average size, but only one of them well coloured, the others possibly having been shaded. It is undoubtedly a rich Apple, and not being very firm in the flesh, is esteemed by persons advanced in years. Dr. Hogg describes this variety in the "Fruit Manual," and publishes a word of caution in respect to "Mother" Apples which may perhaps be usefully cited here:—"American Mother (Mother Apple; Queen Anne; Gardener's Apple).—Fruit medium size, 2½ inches wide, and the same in height; conical, even, and slightly undulating on its surface, and generally longer on one side of the axis than the other. Skin golden yellow, covered with mottles and streaks of crimson on the side next the sun, and strewed with russet dots. Eye small, closed and tapering, set in a narrow basin. Stamens median; tube conical, inclining to funnel-shape. Stalk half an inch long, very slender, inserted in a deep cavity. Flesh yellowish white, remarkably tender, crisp, and breaking, very juicy, sweet, and with a balsamic aroma. Cells elliptical, abaxile, wide, and Codlin-like. One of the finest dessert Apples in October. In shape it resembles Adams's Pearmain. This is an American Apple, and one of the few that ripen well in this country. I may here state that the indiscriminate introduction and recommendation of American fruits has led to grievous disappointment, and growers cannot exercise too much caution in the reception of advice on this subject. I have distinguished this as the 'American' Mother Apple, as there are other varieties in this country known as the Mother Apple. It originated at Boston, Massachusetts."]

THE CHRYSANTHEMUM OUTLOOK.

In the north of London the Chrysanthemums are somewhat late, especially as regards the trade collections, but in private gardens a great difference is observable in the respective forwardness of the blooms, for while some seem likely to be well timed for the show season others will be past their best before the competitions commence. Mr. B. S. Williams, Upper Holloway, and Messrs. Cutbush & Son, Highgate, have extensive collections under glass, but as they have only been recently housed it will be fully a fortnight before they can be expected to be in their most effective condition. At both nurseries the principal object is to show the value of the principal varieties for conservatory decoration, and with this end in view the plants are grown freely and informally, with very little disbudding, and they thus indicate characters that are lost under the more rigid system of cultivation as trained specimens, or to yield "show" blooms. Abundance of flowers, bright, fresh, pleasing colours, and compact habit are characters that can be appreciated in scores of gardens where no effort is made to produce sensational blooms.

FINSBURY PARK.

Amongst the public displays of Chrysanthemums that have obtained a high reputation for the good culture of the plants and their fine blooms, that at Finsbury Park, under the superintendence of Mr. Cochrane, has gained a prominent position, and its credit is well maintained this season. A convenient structure with a glazed span roof, contains about 1600 plants in 500 varieties of all types, Incurved, Japanese, Anemones, and Pompons, the plants remarkable throughout for their sturdy, healthy, ample rich green foliage, and general compact habit. They are arranged in two bank-like groups, one on each side of a central path, extending the whole length of the house, with a margin of Pompons that supply an agreeable finish to banks. In previous years there has been a row of pillars in the centre of the path supporting the roof, but by employing metal ties across the rafters the roof has been rendered sufficiently firm to enable the pillars to be safely removed, so that an uninterrupted general view can be obtained of the exhibition from either end of the house. This is a great improvement, and by keeping the very numerous visitors passing in one direction only, all crowding and inconvenience are avoided. That some regulations are needed may be judged from the fact that on fine Sundays the show is visited by 9000 to 10,000 persons.

The plants are somewhat dwarfer than usual this year, being thus better adapted for arrangement, and the varieties have been very tastefully disposed to insure the harmony or contrast of colours. Numbers of fine blooms are now open, but the majority are not yet expanded, and a good display will be maintained for at least three weeks from this date if the weather prove favourable. The Japanese varieties are the best represented at present, and the great feature just now are the enormous blooms of Comte de Germiny, huge globular specimens from 20 to 24 inches in circumference. There are about four dozen of these great blooms, and as the plants are placed in two groups on opposite sides of the path they have a most telling effect. Many of the florets are 1 inch in diameter, and some are 1½ inch across, incurving almost as regularly as in that type. The skilful grower, Mr. Mardlin, states that blooms of this variety can be had still larger, and thinks he can produce some astonishing results another season. Other Japanese that contribute materially to the display are Marguerite Marrouch, deep red, yellow reverse; La Charmeuse, deep purple crimson; M. Moussilac, intensely dark red; La France, a large full bloom with flat florets, rose crimson, white beneath; Gloire Rayonnante, long tubular florets, rose mauve; Mad. Eugène Pourquie, fluted twisted florets, gold and bronze; Bouquet Estival, narrow fluted florets, pink and white, very free and early, useful for decoration; Agréments de la Nature, bright clear yellow; M. Henri Jacotot, intense crimson maroon, L'Or du Rhin, deep gold, medium size, but free; Gloire de Toulouse, crimson; Brise du Matin, James Salter, Lady Selborne, and Margot. Of the incurved, Mrs. G. Rundle, G. Glenny, Lord Alcester, and Refulgence are very satisfactory. The Pompons are scarcely out yet, but that useful variety Soeur Mèlainie is expanding fast. All who wish to see a really well grown and representative collection of Chrysanthemums should visit Finsbury Park within the next week or ten days, and they will find ample to repay them for their trouble.

SWANLEY.

Whatever plants Messrs. Cannell & Sons take in hand are certain to be grown extensively and well. Not a few scores or hundreds, but thousands are needed to make a display proportionate to the resources of the establishment. So it is with the Chrysanthemums; 6000 plants are grown for the annual show in the Swanley Nursery, and to these are appropriated four span houses, three 100 feet long each, and one 150 feet long. The plants are arranged to form a large central bed in each house, with smaller specimens at the sides. Some hundreds of varieties are represented, comprising all the leading novelties; but a careful system of selection is adopted, and in consequence many of these new introductions have to be discarded each year, or are found to be too much like other older varieties to merit distinct names. At the same time any improvement is instantly noted, as often by a little extra care in cultivation another year the difference may be intensified, and beauties more highly developed.

The Japanese are also the most forward in the nursery at this early date, and although the bulk of the plants are still in the bud stage, there are numbers such as James Salter, Lady Selborne, Mdle. Lacroix, M. Henri Jacotot, Bouquet Fait, Madame de Sevin, M. Moussilac, Alexandre Dufour, Beauté des Jardins, and the early La Vierge that help to make an interesting floral display. The early Japanese, William Holmes, which has been honoured with four certificates this season, has been in excellent condition, with fine deep richly coloured blooms, but it is now past its best, and will evidently be useless for the November shows. As a conservatory plant it will be greatly valued, for it is of compact habit, flowers freely, and the colour is bright and fresh, contrasting admirably with the early white decorative varieties like La Vierge and Mrs. Cullingford. A new Japanese variety from De Reydellet, named La Triomphante, is promising, and likely to make a good exhibition bloom. The florets are broad and flat, streaked with purple on a silvery white ground, very full and of good size. Mr. W. Clark, one of Delaux's novelties, is a pleasing Japanese of a rosy salmon or fawn colour, with a yellow reverse; it varies in tint on different plants, but is very distinct in all stages. Madame Rozain, another new Japanese, has broad bronzy red florets and a yellow reverse, bold and fresh in colour. Two Japanese said to be named Samuel Henshaw and Mr. W. Barr are worthy of mention. The former is of a purplish mauve tint with a white reverse, the florets curious, flat at the upper part, but with a tendency to quilling at the base. Mr. W. Barr is of a fine reddish bronze colour, likely to make a good bloom, but was not sufficiently expanded at the time of our visit.

In Anemones, single varieties and Pompons, Messrs. Cannell & Sons also have several novelties of merit, to which we shall have occasion to refer another week.

SWANMORE PARK.

All the plants here are arranged effectively in a series of houses. Complaints had reached Mr. Molyneux of hard buds in the Queen family, but his blooms appeared to be expanding freely. The plants are generally not so tall as in other years, but the wood and foliage indicate thorough ripeness, while the blooms promised to be as good in quality as in former years. There was not nearly so many expanded as at the same time last year. Madame C. Audiguier, M. Astorg, Balmoreau, Soleil Levant, Meg Merrilies, Peter the Great were the most advanced among the Japanese; and incurved were represented by Prince Alfred, Bronze Queen of England, Refulgence, Mr. Bunn, Jeanne d'Arc, very fine. Mr. Molyneux was evidently much pleased with the notes of your reporter when visiting Morden Park, anent his remarks on the manner in which Mr. Gibson carries his honours and his extremely happy mood when losing. He said, "Gibson is the best loser I know, and perhaps I

have had more opportunities of testing this than any other man, and I hope he will win at Kingston this year, as he richly deserves to do."—VISITOR.

INNER TEMPLE GARDENS.

Mr. Newton has a very good display of *Chrysanthemums* in the Inner Temple Gardens, about 700 plants being arranged in the house devoted to them near the Thames Embankment. Over 400 varieties are represented, including all the best old and new varieties. The plants are in excellent health, well clothed with vigorous foliage, and the blooms already opened are very creditable specimens, numbers of fine promising buds having yet to expand. They have made much progress in the past few days, and now there is a varied and handsome exhibition that will continue attractive for over a fortnight to come. No artificial heat is provided in the show house, but great care is exercised in ventilation, with the result that the blooms keep well and very little trouble is experienced with damp. Abundant means of ventilation is provided at the base of the house at the back, thus avoiding admitting smuts and dirt to disfigure the blooms, as would be the case with ventilation in the roof.

The varieties most noticeable just now are mostly Japanese, such as Lakmé, bright orange scarlet; James Salter, very abundant and good; J. H. Laing, creamy white with a yellowish centre; Mdle. Lacroix, Chinaman, M. Freeman, a Japanese with incurving florets, pink, silver reverse; Fair Maid of Guernsey, Alexandre Dufour, Mad. de Sevin, Margot, fine handsome deep blooms; Val d'Andorre, grand blooms coming on; and Source d'Or, fresh and bright in colour. In the reflexed, Webb's Queen is good, of a pale blush tint or white; Crimson King is also fine, and Golden Christine. Of incurved, Prince Alfred, Empress of India, Mrs. G. Rundle, and G. Glenney are the best at present.

EXETER APPLE AND PEAR SHOW.

OCTOBER 21ST AND 22ND.

THIS Exhibition was held in the large market, Fore Street, Exeter, and was in all respects a success. The entries have steadily increased annually, showing that it is gaining in popularity, and this year there were about ninety exhibitors, representing the counties of Devon, Kent, Hereford, Somerset, Dorset, and Cornwall. The average size of the Apples was above that of last year, though several collections last year contained fruit much larger than any shown this season. Colour was absent to a very marked degree, but cleanliness was everywhere apparent, showing a decided improvement. Pears in the dessert classes were extra good. Culinary varieties were much smaller than usual. About forty dishes of Canadian fruit was also staged, some of extraordinary size, and the colour such as is rarely seen in our English-grown fruit.

APPLES (twenty-four distinct varieties).—Messrs. Bunyard & Co., Maidstone, Kent, were first with a very clean, even, and handsome collection, well meriting the honour conferred on them. The following varieties were included:—Grenadier, Gloria Mundi, large; Pott's Seedling, Reinette de Canada, Beauty of Kent, large; Lord Suffield, Tower of Glamis, extra good; Stirling Castle, New Hawthornden, very fine; Ecklinville, Alexander, a splendid dish, beautifully coloured; Peasgood's Nonesuch, very fine; Warner's King, Loddington, very large; Tibbet's Pearmain, a very large, handsome fruit, almost covered with a deep dull red; Lady Henniker, Gospatric, Cox's Pomona, highly coloured; Saltmarsh's Queen, Golden Noble, Melon Apple, Lord Derby, fine; Cellini, large and well coloured; and Lane's Prince Albert. Mr. J. Watkins, Withington, was second, his collection containing many good dishes of fruit, which generally had more colour than any others. Among his best were Striped Beefing, Green Costard, Red Costard, deep, conical fruit; Mère de Ménage, good; Blenheim Orange, the best dish in the Show; and Yorkshire Beauty. Third Mr. C. Slater, Heavitree, Exeter, who followed closely, having Peasgood's Nonesuch, grand; Afriston, Gravenstein, Lady Henniker, Golden Noble, &c.

Twelve dishes distinct.—First Messrs. Bunyard, who had Lord Derby, Warner's King, Loddington, Saltmarsh's Queen, and Alexander, extra fine. Second Mr. Watkins; third Mr. H. Berwick, Sidmouth. Twelve dishes dessert varieties, distinct.—First Messrs. Bunyard, whose best dishes were Cox's Orange Pippin, very fine; Herefordshire Crimson Greening, fine in colour; Melon Apple, Lady Henniker, Ribston Pippin, Worcester Pearmain, a lovely colour; King of the Pippins, Wealthy (American), high colour; Washington, fine; Blenheim Orange, and Colonel Vaughan, a fine conical and high-coloured fruit. Second Mr. Slater, third Mr. J. Scott, Merriott. Twelve culinary varieties.—Really a repetition of class 2. First Messrs. Bunyard, again staging fine examples of Stirling Castle, Lord Derby, Gloria Mundi, Beauty of Kent, Saltmarsh's Queen, Warner's King, New Hawthornden, high colour; Cox's Pomona, Ecklinville, Prince Albert, and Alexander. Second Mr. Watkins. Third Mr. D. C. Powell, Powderham, Exeter. Nine dishes dessert (prize given by Messrs. Bunyard).—First Mr. Slater, second Mr. H. Berwick. Twelve dishes cider Apples.—First Mr. E. P. Uglov; second Mr. Garland, gardener to Sir T. D. Acland; third Mr. B. Salter.

Eighteen dishes distinct (private growers).—First Mr. Geo. Brooks, gardener to A. Vaughan Lee, Esq., Dillington Park, Ilminster, who staged a very good collection, his best dishes being Lady Henniker, best in the Show; Warner's King, Mère de Ménage, Royal Russet, Afriston, Cox's Orange Pippin, Peasgood's Nonesuch, fine and highly coloured; Cellini, Royal Somerset, Alexander, and Beauty of Wilts. Second Mr. Garland, who had as his best dishes Blenheim Orange, fine and well coloured; Mère de Ménage, also high colour; and Cox's Pomona. Third Mr. Slee, gardener to E. V. Hawkins, Esq., Edgerton Park. Nine dishes dessert.—First Mr. Geo. Brooks, who had many unknown varieties and very similar to each other. Second Mr. Garland, who had Alexander Russet, a fine distinct, handsome, and good keeping variety. Nine culinary varieties.—First Mr. Truman, Countess Weir, whose Gloria Mundi was best in the Show; he had good dishes also of Afriston, Ecklinville, B. Orange, Flower of Kent, Beauty of Wilts, &c. Second Mr. A. C. Williams, gardener to W. C. Sims, Esq., Clyst St. George. Nine distinct, also a repetition of

Class 9.—First Mr. J. Baker, gardener to Mrs. Rowe, Lafrowda. Second Mr. P. Slade, gardener to W. H. Cocks, Esq., Broad Clyst. Third Mr. J. Blythe, Ide. One dish of Apples (Devonshire cottagers).—First Mr. J. Hitchcot, Lowson, with Blenheim Orange. Second W. Gibbings, Topsham, with Warner's King. Third Mr. S. Ster.

Single Dishes.—Heaviest dish of five. First Mr. W. Blackmore, with Warner's King weighing 1 lb., 6 ozs., 5 drms. Second Messrs. Bunyard, with the same variety. Third Mr. J. Powlesland, gardener to C. J. Luscombe, Esq., Hill's Court, with Gloria Mundi.

Dish of Best Flavoured Apples (twenty-five competitors).—First Miss Matthews, Crediton, with Cox's Orange Pippin. Second Messrs. Bunyard, also same variety. Third Mr. T. Taylor. Afriston (seven competitors).—First Mr. G. H. May, Topsham. Second Mr. J. Baker. Blenheim Orange (twenty-eight competitors).—First Mr. J. Beer, Cullompton. Second Mr. A. C. Williams. Golden Noble (seven competitors).—First Mr. D. C. Powell. Second Mr. C. Slater. Lord Suffield (twelve competitors).—First Messrs. Bunyard. Second Mr. J. Watkins. Old Hawthornden (six competitors).—First Mr. J. Fyer, whose dish happened to be none other than Dumelow's Seedling. Second Messrs. Bunyard. Warner's King (twelve competitors, all staging very fine fruits).—First Mr. W. Blackmore. Second Messrs. Bunyard. Dumelow's Seedling (twenty-one competitors).—First Mr. Truman, whose fruits were far ahead of any other. Second Mr. T. Gillard, gardener to R. N. G. Baker, Esq., Heavitree. Any other variety culinary (thirty-one competitors).—First Mr. Geo. Brooks, with Peasgood's Nonesuch. Second Mr. Lalway, gardener to C. R. Collins, Esq., Cullompton, with a fine dish of Alexander. Cornish Gilliflower (twenty competitors).—First Mr. W. R. Baker, gardener to Rev. P. L. D. Acland. Second Mr. T. Taylor, whose dish comprised only one true Cornish Gilliflower, and four of a local sort called Red Ribbed Greening, very similar. Court Pendu Plat (nine competitors).—Not one good dish was staged. First Mr. Slater. Second Mr. J. Hayman, gardener to Mrs. Pinder, St. Germain's House. Cox's Orange Pippin (twenty-four competitors).—First Messrs. Bunyard and Co. Second Mr. T. Gillard. Gravenstein (seven competitors).—Mr. J. Stenner, Broadclyst. Second Mr. Garland. King of the Pippins (seventeen competitors).—In this class was exhibited a great diversity of shape and colour. First Messrs. Bunyard. Second Mr. J. Searle, Crediton. Margil (nine competitors).—Generally very small. First Mr. J. Mogridge, gardener to Mrs. Ord, Topsham. Second Messrs. Bunyard. Mère de Ménage (four competitors).—First Mr. J. Searle, very fine. Second Mr. Watkins. Ribston Pippin (thirty competitors).—First Messrs. Bunyard, fine but colourless. Second Mr. S. J. Wright, gardener to C. Lee-Campbell, Esq., Ross. Any other sort dessert (forty-three competitors).—First B. C. Gidley, Esq., with Gidley's Pearmain; raised by exhibitor. Second, Mr. J. Hall, Cullompton. A great many dishes were far too large for competition in dessert classes.

PEARS.—Twelve dishes distinct. Messrs. Bunyard, who were again first with very fine fruits, including Beurré Diel, Beurré Bachelier, Doyenné du Comice, fine; Beurré Superfin, Beurré d'Ecully, and Beurré Clairgeau, Durondeau, Gros Calebasse, Marie Louise d'Uccle, Louise Bonne of Jersey, and Catillac. Second Mr. Garland, who had fine Pitmaston Duchess, Beurré Bosc, and Winter Nelis, fine as his best. Third Mr. Slater. Class 32 (seventeen competitors).—Six dishes distinct, dessert. First Mr. R. Salter, gardener to J. Carver, Esq., Chilton, Polden. Second Mr. Garland, Third Mr. H. Berwick. Class 33.—Three dishes distinct, dessert (nineteen competitors). First Mr. D. C. Powell with Beurré Clairgeau, highly coloured; Marie Louise, large and well coloured; and Muir Fowl's Egg. Second Mr. F. Bradshaw. Three dishes distinct, culinary (seven competitors).—First Mr. A. C. Williams. Second Mr. W. Slee.

SINGLE DISHES.—Catillac (eleven competitors).—First Mr. Ham, Broadclyst, with superb fruits, evidently from a wall, second Mr. J. Searle. Uvedale St. Germain (twelve competitors).—First Mr. G. Brooks, second Mr. J. Powlesland. Any other sort culinary (nine competitors).—First Mr. Truman with Black Worcester, second Mr. Berwick with Verulam. Beurré Diel (seventeen competitors).—First Mr. Geeson, gardener to Lord Haldon, Haldon House, a very fine dish indeed; second Mr. G. Brooks. Doyenné du Comice (six competitors).—First Mr. G. Brooks, second Mr. A. C. Williams; the position of these two exhibitors should have been reversed, the second prize fruits being magnificent. Easter Beurré (nine competitors).—First Mr. J. Searle with a splendid dish, grown on cordons, on a cob wall coped with thatch; second Mr. J. Ham. Glou Morceau (seven competitors).—First Mr. Smith, gardener to Lady Fletcher, Yalding; second Mr. G. Brooks. Josephine de Malines (nine competitors).—First Mr. A. C. Williams, second Mr. J. Hall. Knight's Monarch (four competitors).—First Mr. A. C. Williams, second Mr. G. Brooks. Louise Bonne of Jersey (eighteen competitors).—First Mr. Garland, second Mr. W. Mortimer, gardener to Col. W. Thompson. Marie Louise (twenty-two competitors).—First Mr. R. Smith, very fine; second Mr. J. Osmond, gardener to Rev. P. Williams, Reive. Pitmaston Duchess (ten competitors).—First Mr. A. C. Williams, second Mr. R. Salter; the dishes in this class were generally small for this variety. Winter Nelis (twelve competitors).—First Mr. R. Smith with fine fruits; second Mr. J. Morgan, Wellington. Any other sort dessert (forty-one competitors).—First Mr. Bunyard with Beurré Clairgeau, very large and handsome; second Mr. J. Morgan with Maréchal de Cour, fine. Five Quinces (four competitors).—First Mr. C. Slater, second Mr. Bowers, gardener to Sir G. Clay, Bart., Cerne. Twelve Tomatoes (seven competitors).—First Mr. Truman with a grand dish of Stamfordian; second Mr. Garland, also with a grand dish of Hackwood Park. Medlars (eleven competitors).—First Rev. B. W. Wrey, second Mr. H. Mounsdon, gardener to F. Bradshaw, Esq., Sifton Park, both with the large Dutch variety.—CORRESPONDENT.

THOUGHTS ON CURRENT TOPICS.

I THINK my first thoughts are due to Mr. Iggulden on the trenching question. When I suggested increased depth of soil and increased warmth as the twin cause of his Lettuces and Kidney Beans growing so well on Celery ridges, our valorous friend retorts that I "must have forgotten that the ridges are only a trifle above the ordinary ground level, the soil thrown out of the trenches being a comparatively thin addition to the ridges between them." I did not forget anything of the kind.

It was not necessary. The addition of soil to the ridges is not denied, nor can it be denied that it is rich surface soil added to rich surface soil, making the depth of good soil greater than on the level, and if that is not an advantage I do not know what is. Again, if the Celery trenches are not thrown out till May, as is often the case, or even April, the surface quite warm before being covered with the layer of soil taken from them, and the ridges are thus several degrees warmer 3 or 4 inches or more below the surface than the soil is at that depth on the level. This increased depth of good soil, however slight it may be, coupled with the distinct gain in earth heat, is of enormous advantage in land that is naturally heavy and wet in inciting the growth of whatever may be sown or planted. I wonder if your correspondent is still "surprised" that a double dose of good soil or warmed rich surface soil should make his Lettuces grow? If he is he had better not attach the slightest importance to "gentle bottom heat" in starting his Cucumbers or other plants, which ordinary gardeners consider are benefited by such assistance.

THE truth of the matter is, that the soil with which Mr. Iggulden has to deal is too cold for the free growth of crops early in the season, and the sun is long in warming it; indeed, it never can warm it to any great depth. The soil is adhesive and wet, and the sun's rays are employed in evaporating the water. Not one degree can the earth's temperature be raised till the water is extracted. Instead of that the surface is being made colder, for there can be no evaporation without a fall in temperature. If a pint of water is evaporated from 100 lbs. of soil the land is left 10° colder than it would be if the water passed away by filtration. Grasp that fact and think it over. The importance of drained and warmed land will then be evident, and if draining cannot be done in the orthodox way it may to a great extent be accomplished by ridging and cropping on the ridges.

By far the most important of all elements in making crops grow is warm moist air. Air cannot enter waterlogged ground; but let the water pass away by filtration and the air will follow, because 15 lbs. in weight of it presses on every square inch of surface. Exclude air from the earth, and decaying animal and vegetable matter therein is plant poison; admit air and it is converted into plant food. I believe the more these statements are thought about the more clearly they will be recognised as facts, and as such incontrovertible. It is easy enough to contradict and express disbelief. That can be done without any mental effort. In fact, mere contradictions usually betray want of thought and a lack of knowledge of the true scientific principles on which all sound practice is founded.

THE great fact to remember, and in my opinion it is the greatest of all facts in connection with culture, yet one which we seldom see stated is this—namely, that at the least 80 per cent. of plant food is supplied by the air in the form of rain and gases that act as solvents of the matter locked up in the soil. The deeper the air can penetrate freely with its warmth, hence life-giving power, the more food is conveyed, and that in immeasurably the cheapest of all forms, and it only needs the presence of moisture for its absorption. If soil, no matter whether it is at Marston or elsewhere, is not improved by being dug more than a spade deep, it is fundamentally out of condition, and this the quicker and better growth of crops on ridges between Celery trenches conclusively proves, and proves another thing too—that it is amenable to improvement by deepening and aëration. To say it is only a "trifle" deeper is no answer; it is really a corroboration of what it is intended to confute, because obviously if a mere trifle tells so markedly a still greater addition or depth of equally good soil, say another "trifle," must of necessity be still more efficacious.

NOW, let me venture to give Mr. Iggulden and all persons similarly situated a little what he may term "practical" advice. It is this. If they cannot convey the water out of the land by filtration and increase its porosity for the admission of warmth and air by a well conducted system of drainage, let them throw it into a series of ridges when the surface is dry and warm in spring, and crop on those ridges, and they will get a better return with half the manure than can be obtained by cropping on the level with a double dose, no matter whether they grow Lettuces, or Potatoes, or Onions, or Roses, or Gooseberries, or Peas; in fact, I expect nothing in strong, cold, adhesive, waterlogged soil. That is the condition, and this fully comprehended, I may venture to say that if the change does not result in improvement it will be time I gave up thinking altogether; and I do not know that I should quarrel much with those of my readers who may answer in response, "And a good job, too."

BUT I do not intend ceasing to "think" if I can help it, or to refrain from expressing my thoughts just at present, and I am going to direct my attention for a few moments to the subject of one of Mr. Muir's paragraphs (page 322)—Onions. There is nothing like beginning with a bold statement for arresting attention, therefore I make bold to assert that the "improvers" of Onions are spoiling them. They are on the wrong track altogether, and Mr. Muir appears inclined to help them along the road to ruin. An entirely false standard of excellence is being set up by exhibitors and judges at shows, and cultivators are induced to grow just what is not wanted by the multitude in the markets, consumers turning for what they do want to the produce of Spain, Portugal, Holland, and other countries. A few more "improvements," and a few more prizes for them, and English Onions will be as flat as pancakes. It is time a protest was entered against this spoiling of a valuable crop. Foreign competition is denounced in words, but invited in practice, and there is

no wonder at the increasing importations of Onions. Greengrocers know very well what the public like—bright, firm, round hulbs, not the flat cake-like "specimens" which "judges" delight to honour.

FOR years past the leading seedsmen have been devoting their attention to the improvement of the root crops of the farm, and flat Swedes and Turnips are obsolete, while one of the chief merits of Mangold Wurtzels is that of attaining to a great size out of the ground. Weight above the soil is the test of excellence. There is no question as to that being a sound estimate of value from whatever point of view the subject is regarded. But a directly opposite course appears to be taken in the "improvement" of Onions, and the standard of excellence seems to be covering the greatest extent of ground with the hulbs, and getting as little produce as possible above it, as though there were no room upwards for Onions to swell. Look at them on the exhibition table, with their backs turned to visitors like so many white plates, as if the upper or face side was not fit to be seen, and yet these flattened monstrosities, with a minimum of kernel and a maximum of husk, are held up as models. Truly the Onion growers on the Continent who flourish at our expense must think the English a peculiar people. I write with a full consciousness of the risk incurred in thus striking at the flats—I mean the flat Onions—in provoking a mighty onslaught from their defenders, and am prepared to take the consequences.

TURNING to my doughty opponent "Utilitarian," I am sorry to have overlooked what he appears to have intended—namely, his admission of a mistake in respect to the Windsor Pear as a market variety, and I should regret very sincerely if I should even seem to reproach anyone under such circumstances. I have the utmost respect for "Utilitarian" and all such able defenders of their views who make me press down my "thinking cap" more firmly in maintaining a position, and I feel certain that similar feelings are entertained towards myself by most, if not all, who feel it their duty or pleasure to combat my notions, for I am proud to feel there are as true gentlemen among gardeners as in any other class of society, notwithstanding a sprinkling of the other sort, the existence of which I sorrowfully admit. I felt "Utilitarian's" rebuke on page 336 rather keenly, because I regard him as one of the right sort, and apologise for my oversight. We now start fair again, and I am going to say what I think about his pet Beurré Capiaumont Pear. I have nothing to say against the richness of the Seckle, as invited, and wonder who has; nor of the hardy and useful Swan's Egg and Aston Town as orchard standards; but I repeat that, as a rule, and taking the samples as generally produced over a wide area, Beurré Capiaumont is "poor and poor looking." I agree fully that "estimates should be founded on experience," and that being so, let not my opponent take refuge again in quoting authorities against me. I am suspected of taking my "promptings from the sunny south," as if this or any other Pear coloured better in the north. Mind you are not caught tripping, Mr. Utilitarian. I take my stand on gathering bushels of fruit from standards and giving most of it to the pigs, as it would not be eaten by their masters. This was north of the 53rd parallel of latitude, therefore not in the "sunny south;" fine healthy trees, too, in good soil, not scraggy overcrowded examples in barren land. I consider Beurré Capiaumont a greatly overrated Pear, and if I had land intended for growing fruit for market, and "Utilitarian" should be moved to offer me fifty or a hundred trees of it, and plant them for nothing in the middle of the ground, I should respectfully decline the proffered kindness on the score of utility.

IT is only in the sunny south that well-coloured samples of this Pear can be seen. I have seen a few attractive specimens; but look through the prize list of any good show, or turn to the records of the Pear Congress, and it will be seen how comparatively scarce they are. It is very different with "good and good-looking" Pears. It is beside the question to refer to fruit from "trees on a wall" as evidence of quality. The theme of your correspondent was "Pears for market," and the bulk of these are not grown against walls. Moreover, where walls exist they can be better occupied—namely, with first-rate Pears, and no one that I know who has had much "experience" would place Beurré Capiaumont in that category.

THERE is one purpose, and only one, for which I would plant trees of the variety under notice—namely, shelter. The tree is hardy, and a close upright grower. Orchards in exposed positions require protection from high winds. Forest trees are sometimes planted for this. A row of standard Beurré Capiaumont Pears 12 feet apart, and another row of dwarfs 6 feet asunder, about 8 feet in front of the others, would form a magnificent hedge furnished from the ground to a height of 40 feet upwards, and the sheltered side would give much fruit of its kind, that might happen to find a sale in some big but poor town, where the multitude pay more regard to bulk for money than to quality, and in that case the Pears as a screen would be better than Poplars. I am not able to go beyond that in recommending Beurré Capiaumont for market or anything else. The Pear hedge is "prompted by experience," and I have a little more on an extensive plantation of this Pear; but I had, perhaps, better keep it in reserve, for I presume "Utilitarian" will have another cut in.

I HAVE to thank your correspondent and others for the information they have been so good as to supply in respect to the Yorkshire Beauty Apple. I know Greenup's Pippin very well, and good and attractive it is, but I had also sent to me another Apple as the Yorkshire Beauty, which I identified as the Coham, and I was anxious to know whether

this or Greenup's was the recognised "Beauty," and the point is settled. I now recommend them both as good and perfectly distinct, indeed, as two of the best Apples in cultivation. The Cobham is very much like the Blenheim Pippin, but not so flat, and generally brighter in colour.

I ALWAYS admire a neat retort, and anything better in its way I have not seen for a long time than a short sentence by "D., Deal," on page 359. Relative to the division of one prize between two exhibitors, your correspondent says, "One writer suggested that such things were sometimes done to make it pleasant for both parties. I think this betrays a great ignorance of human nature, for the inevitable result is dissatisfaction, each probably thinking that he ought to have the whole prize." That is rather clever because of the doubtful element in the case, as to whether the gentle insinuation of "ignorance" is intended for myself as the "writer" alluded to, or to the judges who do such curious things. If the elegant epithet quoted is applied to myself, I bow acceptance; but would remark that the question is not the study of mankind, but the alleged disposition of some judges to extricate themselves from a difficulty in close competition by awarding equal prizes to make things pleasant. I have seen this done more than once, or twice, or thrice, and heard the object avowed in some such words as these—"It's close, very close, indeed a toss up between the two; what are we to do? If we give it to this one, that growls, and if we give it to that one, this grumbles. We shan't do far wrong by making them equal. Agreed!" And the thing is done. That is a simple fact. Such a free and easy way of "judging" is only excusable (if at all) when through loose management the arrangements are not completed till far past the stipulated time, and the adjudicators have to "rush through" the classes as best they can.

In my opinion, and it is arrived at after a close examination of many collections, not of Roses alone, but not excluding them, which have been placed "equal," that there is not a greater per-centage of garden products staged absolutely equal in merit than there is of "dead-heats" in University and other races, or of equal voting in parliamentary divisions. But in practice the disproportion is enormous, and I firmly and honestly believe that more than half the equal awards that are made are wrong. Admitting judges to be competent, the disposition of the awards is a question of taking pains, not begrudging any time that may be necessary in finding out a possible fault, so as to turn the balance either one way or the other. It is extremely close competition that tries the metal of the men who make the awards, and they should face the difficulty and conquer it, not run away under the cover of a split verdict. When silver cups are offered they are awarded in their entirety, and judges ought to feel no more at liberty to divide a money prize than a silver cup. If they do feel justified in acting on a principle of simple justice in one case and of compromise or expediency in another, it would be well to know on what grounds.

YOUR correspondent has, I perceived, accused another writer of "hitting wildly about him" in suggesting that stands of seventy-two to seventy-two, thirty-six against thirty-six Roses, and so on, should be pitted together in competition for a premier prize beyond the ordinary prizes of the schedule. I have not seen this suggestion in the *Journal of Horticulture*, but may have overlooked it. Perhaps the page can be quoted; or, possibly, the suggestion has appeared elsewhere, and if so, it is, I think, a little confusing to criticise in one journal a subject under discussion in another. It may, however, only be "human nature" to do so, and I am not expected to understand that; nor have I observed the "groundless gabble" against exhibition Roses on the one hand, or the "sneers and vapourings" against show Roses on the other, that are brought under notice in a few scathing lines on page 358. I fail to see the force of these forcible "hits," with no "object" for their reception in my mental vision; but I am on delicate ground here, as my inability to comprehend what may be clear to others may be adduced as evidence that, after all, I must only be a shallow—THINKER.

ROYAL HORTICULTURAL SOCIETY.

OCTOBER 26TH AND 27TH.

THE concluding Exhibition of the season at South Kensington was held on Tuesday and Wednesday, and in all respects proved as successful as those that have preceded it in the long and varied series provided this year. It was somewhat too early to expect an extensive display of Chrysanthemums, but most of the blooms and groups contributed were characterised by good quality and bright clear colours. The vegetables, however, constituted the great feature, Potatoes especially being very largely shown both in the classes and not for competition. The class for a collection of vegetables was also remarkably well filled, no less than seventeen competitors staging, the general quality being so even that it was only by a very close and careful scrutiny the three prizewinners could be selected. The special prizes offered by several seed firms also brought a number of exhibits in the Potato classes, and with the collections of Canadian Apples which have been previously noted, all available space in the conservatory was filled.

FRUIT COMMITTEE.—Present: T. F. Rivers, Esq., in the chair, and Messrs. G. Bunyard, Philip Crowley, W. Denning, J. Ellam, G. Goldsmith, T. B. Haywood, G. T. Miles, J. Roberts, A. W. Sutton, H. J. Veitch, J. Willard, C. Ross, and J. Woodbridge.

Messrs. Rivers & Son, Sawbridgeworth, showed fruits of the Wydale Plum, a dark purple, oval shape, medium size variety, but prolific, and of good quality. The Committee considered that this Plum should be more generally known, as it is a valuable late cooking Plum (vote of thanks). Messrs. J. Veitch & Sons, Chelsea, sent a tree in a pot of Apple Prince

Bismarck from under glass, but this was not enough to enable an opinion to be expressed in accordance with the rules of the Committee, and it was requested that the fruit be shown again from trees out of doors. Mr. W. Divers, Ketton Hall, Stamford, was accorded a vote of thanks for handsome fruits of Salwey Peach from a cool house. Messrs. J. Backhouse & Son, York, exhibited a Pear named Backhouse's Beurre, but it was not in suitable condition, and it is desired to see it again. R. Scrase Dickens, Esq., Coulhurst, showed large highly coloured fruits of Apple Hollandbny (vote of thanks). Mr. Laxton, Bedford, exhibited fruits of Pear Laxton's Bergamot, which were passed. W. Roupell, Esq., Harvey Lodge, was awarded a cultural commendation for two well-fruited trees in pots of the Melon Apple. They were on the Paradise stock taken from the open ground. It was stated that the fruit kept until the end of March this year, and it sets its fruit well, as it blooms late. Mr. Roupell also showed some fine well, coloured Muscat of Alexandria Grapes (vote of thanks). Mr. R. Dean-Ealing, showed bunches of Madresfield Court Grapes from Vines out of doors, the berries of fair size and colour (vote of thanks). Mr. R. Fenn, Sulhamstead, exhibited sample bottles of home-made wines prepared from Grapes, Gooseberry, and Rhubarb, a blending of the last two fifteen years old being of good flavour, but the Committee declined to express any opinion respecting them. From the Royal Horticultural Society's Gardens at Chiswick was sent a collection of American Grapes, comprising Ferdinand de Lesseps, Pocklington, Chasselas Rose, Virginia, Lady Washington, Jefferson, Strawberry, and Brighton, the two first named being the best in flavour.

FLORAL COMMITTEE.—Present: G. F. Wilson, Esq., F.R.S., in the chair, and Messrs. H. Bennett, W. Wilks, W. Bealhy, G. Duffield, J. Hudson, H. Herbst, T. Baines, W. Holmes, A. Perry, W. H. Low, H. Low, H. Ballantine, J. Douglas, H. M. Pollett, J. O'Brien, A. Turner, E. Hill, C. Nohle, H. Cannell, and A. J. Lendy.

From R. J. Measures, Esq., Cambridge Lodge, Camberwell (gardener, Mr. Simpkins), came a plant of *Cattleya bicolor marginata*, with greenish sepals and petals, the lip crimson edged with white, the column large and white (vote of thanks). F. G. Tantz, Esq., Studley House, Goldhawk Road, Hammersmith (gardener, Mr. J. C. Cowley), was awarded a cultural commendation for *Dendrobium superbiens*, with a stout pseudo-bulb over 2 feet long, and bearing two racemes of ten deep purplish flowers. Mr. B. S. Williams, Upper Holloway, had five Hybrid Amaryllises of the reticulata type, comprising Pioneer, a cross between Crimson King and Mrs. Garfield, the flowers scarlet, with no veining as in the other forms; Mrs. W. Lee, a bright rose, veining, and suffusion on a white ground; Mrs. Garfield pale rose reticulation on a pure white ground, very delicate and beautiful; *Solandra-flora reticulata*, flower long, veined and suffused with rosy red, and Pirloti, a very distinct form, with deep rose-crimson holdly marked veins and a central white bar in each petal. These varieties form a beautiful group with good foliage, and bloom freely from now onwards to Christmas.

Mr. T. S. Ware, Tottenham, showed some pots of the bright yellow *Sternbergia lutea*, the purplish *Colchium speciosum*, and profusely flowered specimens of *Saxifraga Fortunei* (vote of thanks). Mr. H. B. May, Upper Edmonton, exhibited an elegant crested Fern named *Pteris tremula grandiceps*, which the Committee desire to see again. Messrs. H. Low and Co., Upper Clapton, had a plant of *Warscewiczella cochlearis* with long tapering leaves and narrow white lanceolate sepals and petals, the lip large scoop-like, veined with light purple at the base and a darker shade at the apex. Messrs. W. Cathush & Son, Highgate, had some baskets of *Pernettya mucronata* varieties bearing numerous fruits—red, purple, lilac, mauve, and white. Messrs. Paul & Son, Chesham, showed plants of *Erica Mawana* with large purplish flowers (vote of thanks), and a new pillar Rose, Paul's Single, the blooms large, white, or blush. Herr Max Kolh, Botanic Gardens, Munich, sent a plant of *Anthurium Martianum*, a strong growing with thick lanceolate dark green leaves.

Messrs. H. Cannell & Sons, Swanley, were awarded a bronze medal for a collection of Chrysanthemum blooms, including specimens of several good new Japanese varieties and others like *Beauté des Jardins*, James Salter, Lady Selborne, M. Henri Jacotot, Flambeau, and M. Moussillac which are better known. A cultural commendation was awarded for *Begonia Double White*, a tuberous variety with most symmetrically formed flowers of medium size. The petals are as regularly placed as in a white Camellia or a Gardenia flower, the plant is of excellent compact habit and very floriferous. A bronze medal was adjudged to Messrs. Hooper & Co., Covent Garden, for a group of Carnations in pots, and a box of cut blooms; Dr. Raymond, maroon; A. Alégatière, scarlet; Irma, rose; and Mdle. Carle, white, were the best of the varieties. Mr. R. Owen, Maidenhead, exhibited blooms of Cactus *Dahlia marginata*, a sport from Cochineal, scarlet, edged with a lighter shade, and Chrysanthemum *carinatum* varieties; Cloth of Gold, Cloth of Silver, Yellow Perfection, and Superbum, with some handsome Tuberous *Begonia* blooms. Mr. E. Beckett, Aldenham Park Gardens, Elstree, showed some *Bouvardias*, a pale pink sport from Hogarth being named Blushing Bride; he also had blooms of Chrysanthemum *Curew Underwood*, a bronze sport from Baronne de Prailly. Mr. Molyneux, Bishops Waltham, sent blooms of Chrysanthemum *Marie Louise*, said to be a sport from Bouquet Fait, and of *La Triomphante*, a new Japanese of great promise.

CERTIFICATED PLANTS.

Chrysanthemum William Stevens (Stevens).—A Japanese variety, with flat for slightly fluted florets, bronze red with a yellowish reverse, the bloom large and of good substance.

Bignonia Chamberlayni (C. R. S. Dickens, Esq.).—A capital climbing plant for a conservatory, the leaves elliptical, bright shining green, the flowers tubular or trumpet-shaped, in pendulous racemes.

Cattleya Eldorado virginalis (H. M. Pollett, Esq.).—A variety with pure white well-formed flowers, the lip pale yellow on the throat.

Chrysanthemum Flambeau Toulousaine (R. Owen).—A neat Pompon variety like Model of Perfection, pale clear rose edged with white.

Chrysanthemum Elise Durdan (J. Laing & Co.).—A Pompon previously certificated at the Royal Aquarium and described in the report last week.

Primula Reidi (G. F. Wilson).—An interesting distinct Himalayan *Primula* with small white bell-shaped flowers. The plant shown was very small and had only three flowers. A botanical certificate was awarded for it.

Odontoglossum blepharacanthum (F. G. Tantz, Esq.).—A pretty little Orchid, something in the way of *O. nevium majus*, but with a creamy white ground spotted with chocolate.

Chrysanthemum Buttercup (J. Veitch & Sons).—A variety raised by Mr. Salter, and apparently intermediate between the Japanese and reflexed types, though it is more likely to be classed in the latter. The florets are flat and bright yellow.

Rhododendron jasminiflorum carminatum (J. Veitch & Sons).—A charming addition to the varieties of the greenhouse Rhododendrons, with long flowers of a deep crimson hue, borne in large trusses.

Crataegus tatarica (J. Veitch & Sons).—A Hawthorn remarkable for the size of its fruits, which are somewhat oval in form, over 1 inch in the larger diameter, and bright red in colour. The leaves are large and deeply cut into broad lobes.

THE CHRYSANTHEMUM AND VEGETABLE SHOW.

The leading class was for a group of Chrysanthemums in pots, and of the four competitors Mr. N. Davis of Camberwell was an easy first with a tasteful arrangement of plants bearing large and bright blooms representing a large number of the best varieties. Mr. Stevens of Putney was second with good plants and blooms, but not quite sufficient diversity of colours. Mr. Townsend, Putney, being third. Seven collections of twenty-four blooms were entered, the premier prize being secured by Mr. J. Ridout, gardener to T. B. Haywood, Esq., Woodhouse Lodge, Reigate, with beautiful blooms of the following:—Back row—Madame A. Sevin, Criterion, La Triomphante, Comte de Germiny, Coquette de Castille, Jeanne Delaux, Elaine, and Dormillion. Second row—Dr. Macary, J. Laing, Madame B. Rendatler, Bouquet Fait, Mdle. Lacroix, Wm. Robinson, M. Tarin, and Maiden's Blush. Front row—Lady Selborne, M. Freeman, Lakme, Phœbus, Margot, M. Astorg, Triomphe du Nord, and Chang. Mr. E. S. Cole, Woodside, Bristol, was a good second, also with Japanese varieties; the third prizewinner, Mr. J. McKenzie, Linton Gardens, Maidstone, having twelve incurred and twelve Japanese, but the former were not in good condition.

In the vegetable classes, as already remarked, the competition was very keen and the quality of the exhibits very even. With six heads of Celery there were fourteen exhibitors, Mr. W. Pope, Highclere Gardens, Newbury, leading with a variety like Major Clarke's Red, very solid and clean; Mr. R. Timbs, Amersham, and Mr. Richards, Somerley Gardens, Ringwood, following closely. For Parsnips Mr. W. Meads, Beckett Park Gardens, Shrivenham, was first amongst seventeen competitors, showing Sutton's Student in excellent condition. Mr. Lye, Sydmonton Court Gardens, Newbury, was second with Elcombe's Improved, and Mr. G. Bloxham, Bletchley, third. Carrots were staged by twenty-seven exhibitors, Mr. Neighbour, Bickley, taking the first place with Sutton's Intermediate; Mr. Robins of Aylesbury, and Mr. J. Barker, Bampton, Oxford, being second and third. Twenty-six entered with Turnips, Mr. May, gardener to Capt. Le Blanc, Barnet, having the best, medium size, even samples of Snowball; Mr. E. S. Wiles, Banbury, following with Early Six Weeks, and Mr. Bloxham being third. Of Onions twenty lots of nine each were staged, Mr. W. Finlay, Faversham, taking first honours for Sheldwick. Mr. G. Neal, Bampton, Oxford, second, and Mr. G. Haines, Highworth, third, with Wroxton. With Brussels Sprouts (fifteen entries), Mr. Finlay was first for Wroxton, Mr. Lye second with Argburgh, and Mr. Pope third.

The prizes offered for Beet were also keenly contested, and twenty-five dishes of six roots were staged. Mr. Neighbour was first for very beautiful even specimens of moderate size, Mr. C. J. Waite second with Pragnell's Exhibition, and Mr. Haines third with Pine Apple. There was much diversity in the character of the Cauliflowers from the sixteen exhibitors, but the premier heads from Mr. A. Miller, Rood Ashton Gardens, Trowbridge, were of medium size and pure white; Messrs. G. T. Miles and Meads following with similar specimens, but many of the others were large, coarse, and of bad colour. Mr. Miles had the best Leeks, beautifully blanched heavy samples; Mr. C. Ross, Welford Park Gardens, Newbury, was second with Ayton Castle, and Mr. C. J. Waite third with Sutton's Prizetaker, all the specimens being good. Tomatoes were capitally shown by thirteen competitors, the leading fruits being Selected Trophy from Mr. R. Farrance, Chadwell, very handsome fruits of rich colour. Reading Perfection was also admirably shown in the second prize dish.

In the class for a collection of eight sorts of vegetables twenty-two exhibitors entered, and seventeen of these competed at the Show, their produce collectively forming an exceedingly fine display of well-grown vegetables. Mr. G. T. Miles secured first honours for handsome samples of Leicester Red Celery, Imported Brussels Sprouts, Stamfordian Tomatoes, Veitch's Autumn Giant Cauliflowers, Cave's Pinesfield Onions, Sutton's New Intermediate Carrots, Chancellor Potatoes, and Lyon Leeks. Mr. Neighbour took the second place, his Reading Perfection Tomatoes, Sutton's New Intermediate Carrots, and Ne Plus Ultra Peas being the most notable dishes; Mr. S. Haines was third, staging Perfection Tomatoes, very fine.

Potatoes alone constituted an exhibition of considerable extent, and the display was an eminently satisfactory one, the tubers very even, with few rough samples. For twelve varieties Mr. J. Hughes, Eydon Hall Gardens, won first honours amongst sixteen competitors, showing excellent tubers of Mr. Bresee, M.P., Hughes' Purple Perfection, Snowdrop, Reading Russet, Sutton's Seedling, London Hero, Edgcote Purple, Adirondack, Sutton's First and Best, Chancellor, and Prizetaker. Messrs. E. S. Wiles, W. Kerr, Dargavel, and W. Ellington, Mildenhall, followed in the order named. Twenty-one collections of six varieties were entered, and these again were very close in merit, Mr. Hughes leading with Reading Russet, Mr. Bresee, Sutton's Seedling, Chancellor, Purple Perfection, and London Hero, followed by Messrs. E. G. Wiles, and C. W. Howard, Canterbury.

The special prizes offered for Potatoes and vegetables were numerous and the entries were correspondingly abundant. Messrs. Sutton & Sons, Reading, contributed prizes in seven classes, all of which were remarkably well filled, and brought some very satisfactory produce together. For a dish of Sutton's Seedling and Sutton's Abundance Potatoes there were nine entries, Messrs. E. G. Wiles, J. Hughes, and E. Chopping, Sittingbourne, securing the prizes for excellent specimen tubers. In the next class, for a collection of nine varieties selected from the following:—Ringleader, First and Best, Early Border, Early Market, Fillbasket, Woodstock Kidney, Early Regent, Prizetaker, Lady Truscott, Seedling, Abundance, Favourite, Harlequin,

Magnet, King of Potatoes, Reading Russet, Fiftyfold, Magnum Bonnm, Reading Hero, Redskin Flourball, Eclipse, Reading Ruby; all Messrs. Sutton's varieties. Seven prizes were offered, which were won by Messrs. J. Hughes, E. S. Wiles, Chopping, G. Allen, Meads, C. W. Howard, and S. Haines, in that order, all contributing very handsome tubers, but the first collection was extraordinary for their even form and clean character. There were eleven entries.

For three sticks of Sutton's White Gem Celery there were eleven entries, Mr. G. H. Richards being first with solid white samples; Mr. C. Osman second, and C. J. Waite third. With Sutton's Dark Red Beet, Messrs. C. J. Waite, J. Hughes, and G. T. Miles were the prize-takers amongst seventeen exhibitors. Sutton's new Intermediate Carrots were shown by twenty-three competitors, Messrs. Neighbour, W. Robins, G. H. Richards, and Baker winning the four prizes for very handsome roots. Sutton's Prizetaker Leeks came from eight growers, Mr. C. J. Waite being first with superb samples, such as are seldom seen at shows in the south; Mr. G. T. Miles was second, and J. Spottiswood third. Sutton's Student Parsnip was well represented by thirteen exhibitors, Mr. Kingsmill, Mr. Richards, and Mr. S. Haines being the successful competitors.

Messrs. J. Carter & Co., High Holborn, offered prizes for the best four dishes of Potatoes, to comprise Carter's Ashtop Fluke, Sukreta, Village Blacksmith, and Cetewayo, which were accorded to Mr. J. Gilbert, Freshwater, Isle of Wight; Mr. Beckett, Amersham; Mr. C. J. Waite, and Mr. W. Jacobs of Petworth, amongst six exhibitors. Mr. C. Fidler, Reading, contributed prizes in three classes, which brought a good number of entries. For nine dishes to include Fidler's Reading Giant, Snow Queen, and General Gordon, Messrs. E. G. Wiles, J. Hughes, G. Allan, and W. Kerr were the winners. For six dishes, to include Fidler's Reading Giant and Perfection, Mr. Hughes was first, his other varieties being Large Red, Crimson Beauty, Snowdrop, and Reading Russet; Messrs. Wiles, Ross, and Allen followed. With three dishes to include Fidler's Perfection, General Gordon, and Bountiful, Mr. Wiles was again to the fore, Messrs. Hughes and Allen following. Many very beautiful samples were entered in these classes. Mr. H. Deverill, Banbury, contributed prizes for Onions Rousham Park Hero, Anglo White Spanish, Main Crop, and the Wroxton, which were won by Messrs. H. Wingrove, J. Bunney, T. Doherty, and E. S. Wiles, with large bulbs such as Mr. Deverill has so frequently shown.

MISCELLANEOUS.

Messrs. Sutton & Sons, Reading, had an extensive and interesting display of Potatoes arranged in groups as follows—American varieties, Sutton's Seedlings, not in commerce, including over thirty sorts, mostly of handsome appearance, thirty dishes of varieties sent out by this firm, a selection of English varieties for exhibition, and a selection of varieties recommended to be cultivated for their quality and flavour. A silver-gilt Banksian medal was awarded to Messrs. Sutton & Sons for this exhibit, and a similar medal was adjudged to the Canadian Commissioners for the large collection of Canadian Apples that have been referred to in the two previous issues of this Journal. A silver Banksian medal was awarded to Messrs. J. Carter and Co., High Holborn, for a series of partly dried Tobacco plants representing seventeen varieties, and sixty dishes of Potatoes, including some fine samples of the leading exhibition and garden varieties. An equal award was granted to Mr. C. Fidler, Reading, for a large collection of fine Potatoes, including his own varieties. From Chiswick came fifty varieties of Potatoes, representing many curiosities of the "Fir Apple," "Asperge," and "Vitelotte" types. Mr. A. Fenn, Sulhamstead, had a selection of thirty varieties of Potatoes, raised by himself, a large proportion of which have taken a high place in the favour of cultivators. Messrs. E. Lee & Son, Hammersmith, had a few varieties of Potatoes, and Mr. Deverill and Mr. Miller were awarded cultural commendations for large well-grown samples of Onions.

SOME NEW ROSES.

It is to be hoped that the new Roses distributed this spring may prove of more value than last year's novelties, for, with two or three exceptions, the varieties of 1885 must be pronounced a very moderate lot. Whether owing to the damage they experienced in the spring frosts, or whether, as may reasonably be feared, owing to inherent lack of merit, they have not shown to advantage either in the garden or at the exhibitions. However, it is a difficult matter to show new Roses well at the few shows where classes are provided for them, since these shows generally fall towards the middle of July, and the novelties, having been budded in the previous May or early June, are usually at their best about the third week in June. This is the case in a propitious season; but if the plants are damaged by late frosts—and from being the forwardest they are the most liable to injury—they do not recover in time to be shown at all. So that probably amateurs will soon altogether give up buying new Roses until they have become public favourites at a short price.

Of the Roses sent out this spring (1886) the only ones that have been seen at all in character out of doors are some of the Tea-scented varieties:—

CLAUDIUS LEVET, T. (Cl. Levet).—A deep pointed flower, clear rose colour with paler base, but little shaded with yellow; quite full and probably good; vigorous.

COMTESSE DE FRIGNEUSE, T. (Guillot).—A good type of flower with very large deep petals of a clear bright yellow colour. The flowers seen so far are inclined to be rather thin, but if it comes full in the summer it should be a great acquisition.

COMTESSE HORACE DE CHOISEUL, T. (Levêque).—A sturdy growing plant, flowering freely on stiff erect stems. Flowers of good size and of great substance, deep petaled with pointed

centre, and of a uniform pale rose colour; a vigorous and promising variety.

MARGUERITE RAMET, T. (Cl. Levet).—A pretty rosy Tea with pale centre, flowering on stiff stems, so that it is effective in the garden; very free flowering.

MARQUISE DE VIVENS, T. (Dubreuil).—A shaded rosy Tea that comes with a great reputation from France, and which seems very much in the way of Madame de Watteville, having petals shading from a yellowish white base to a rosy margin, sometimes twisted together over the centre. The fact of two medals having been awarded to this variety in France would seem to indicate that it is of considerable merit.

SOUVENIR DE VICTOR HUGO, T. (Bonnaire).—A pretty variety that both grows and flowers extremely freely, producing a profusion of flesh-tinted rose blossoms with yellowish base. If it does not flower too freely to attain size it should be an acquisition; and it certainly is useful as a free garden plant.

THE BRIDE, T. (May).—This is likely to be the Rose of the year, and to take permanently a prominent position among Tea-scented varieties. It is described as a sport from Catherine Mermet, a description entirely borne out by the habit of the plant and by the form of the flower, and at the same time, unlike most sports, it seems to be quite as good as its parent. The flowers are very large and are freely produced; in fact, only differing from Catherine Mermet in their colour, which is white, shaded with pale lemon towards the base. It has made good growth and flowered freely this autumn, and may be confidently expected to give a good account of itself next season.

VISCOUNTESS FOLKESTONE, T. (Bennett).—A Rose of much the build of Souvenir d'un Ami, but deeper coloured and without the lilac shade, being more a salmon pink.

AMERICAN BEAUTY, H.T. (May).—This is the only hybrid variety among this year's novelties from abroad that has flowered in character out of doors with me in addition to the Teas above mentioned. It is a thorough Perpetual, producing large deep rose flowers with a brighter centre, the back of the petals pale, but prominently veined, as in Cheshunt Hybrid. It is extraordinarily fragrant and every growth carries bloom, so that being of large size it should be valuable if the lilac tint underlying its brighter colour do not become too obtrusive.

As has been said, the foreign novelties distributed in this country in the spring of 1885 contain very little of interest, and would hardly be worth recording, except as what to avoid. Taking them in alphabetical order:—

ALEXANDRINE BRÜEL, T. (Levet, père).—A not very vigorous variety of Gloire de Dijon race, which produces numerous small white flowers that open perfectly flat; of little value.

ANNETTE MURAT, T. (Levet, père).—Another of the same race, of immense vigour, producing large citron yellow flowers which have here been very rough and coarse, in the way of the old "Monplaisir."

BARONESS NATHANIEL DE ROTHSCHILD, H.P. (Pernet, père).—A large coarse Rose of La Reine type and colour; not at all wanted.

COMTESSE CAHEN D'ANVERS, H.P. (Veuve Ledéchaux).—A seedling from La Reine, of good size and globular form, but rather a dull Rose and inclined to come rough. How far distinct from others of its colour it is as yet difficult to say, but it is very perpetual, though but little fragrant.

DOCTEUR DOR, H.P. (Liabaud).—This was well exhibited as a handsome Horace Vernet-like Rose, and may be a useful dark.

LONGFELLOW, H.P. (Paul & Son).—A vigorous dark purple form of Charles Lefebvre, quite distinct in colour.

MADAME D. WETTSTEIN, H.P. (Levet, père).—The Rose of the year especially to avoid. The tallest plant in the row of maidens is about 9 inches high; the cupped flower is semi-double only and a dull dark red in colour, and the plant has no constitution to speak of.

MADAME MASSICAULT, H.P. (Schwartz).—A Rose of distinct colour, a pale flesh pink flower which, if in a more favourable season it comes rather larger, will be worth growing. The habit of the plant is something after Etienne Levet, and it is thoroughly autumnal.

MONS. HOSTE, H.P. (Liabaud).—An uninteresting crimson Rose, fairly freely produced on very thorny wood.

PRINCESSE AMELIE D'ORLEANS, H.P. (Lévêque & Fils).—A smooth-wooded dwarf-growing light Rose of no value.

PRINCESS DE BEARN, H.P. (Lévêque & Fils).—A pretty crimson shaded darker, free and vigorous, but too thin.

ROSE BUTTON, lucida fl.pl. (Veitch).—Is a charming small cluster Rose for the garden and for cutting.

SOUVENIR D'ALPHONSE LAVALLEE, H.P. (Ch. Verdier).—A vigorous free dark maroon, fine colour, but shell petaled.

SOUVENIR DE GABRIELLE DREVET, T. (Guillot fils).—A ray of light in the dull collection. A very pretty Tea and quite distinct; flowers with a yellowish base, shading to a deep flesh at the margin of the petals, of good size, and flowering freely.

VICTOR HUGO, H.P. (Schwartz).—The best of the H.P.'s, of gorgeous colour, crimson shaded with velvety black; if large enough, one of the best really dark H.P.'s.—T. W. G.

CHRYSANTHEMUM SHOWS.

THE following shows have been advertised in our columns, and schedules have been sent to us, from which we have taken the dates:—

NOVEMBER.

2nd and 3rd, Ealing	12th, Reading
" " London Corn Exchange	16th and 17th, Winchester
3rd and 4th, Havant	" " Brighton
" " Highgate	" " Putney
4th, Brixton	17th and 18th, Bristol
4th and 5th, Stoke Newington	17th, 18th, and 19th, Newport, county
5th and 6th, Crystal Palace	York
9th and 10th, Kingston-on-Thames	18th, Hitchin
10th and 11th, National Chrysanthemum Society	18th and 19th, Hull
10th and 11th, Bath	18th, Chiswick
11th and 12th, Richmond	" Taunton
" " Portsmouth	19th and 20th, Sheffield
12th and 13th, Huddersfield	20th, Kettering
" " Canterbury	22nd and 23rd, Leeds
	23rd and 24th, Liverpool

PLANTING VINES FOR FORCING.

TO-DAY, while looking through some of the back numbers of the Journal, I saw some writings by Mr. W. Bardney, entitled, "Young Vines for Early Forcing," in vols. x. and xi., third series, at pages 528 and 40. I shall feel indebted to him if he will kindly give me, through the Journal, a little advice with regard to the following. I have a span house 50 feet by 12 feet, with a partition dividing it into two, leaving one 20 and the other 30 feet. The path was excavated 3 feet deep, bricked up each side, $4\frac{1}{2}$ inch brickwork, the remaining sides not taken out, but surfaced with cinder ashes, so forming stages for the plants to stand upon. After reading the articles mentioned, I have decided to take out one of these beds of earth, or rather chalk, for such it is, and turn this part of the house, which is 30 feet long, into Vines. Now these side beds are each 4 feet 6 inches wide. Would Mr. Bardney advise me to take this out to the depth of the path, which is 3 feet, or only a part of it? What I thought of doing was to take the chalk out the 3 feet deep. This will then leave me a border space 30 feet long, 4 feet 6 inches wide, and 3 feet deep, but I do not propose to fill it all in again with mould at once, but would fill it to about the depth Mr. Bardney says is sufficient for some few years—viz., 20 inches, as I thought by not filling in all at once I should have a good space left for an annual top-dressing. He advocates planting early enough for the Vines to become somewhat established before they lose their leaves, but I am afraid I am too late to accomplish this this autumn. Should I be acting wisely to buy some Vines at once in pots, wait until they have broken well in the spring, say April, then plant them in border?—VITIS.

[The chalk should be taken out to the depth of 2 feet 6 inches, allowing a slope of 3 inches towards the drain provided for carrying away superfluous water. The bottom should be concreted, and for this purpose I mix together a heap of clinkers broken fine, or broken bricks, or both, with a quantity of lime, mixing the whole well together as if making mortar, and then spread it about 3 inches thick, beating it level on the surface with the back of a shovel. About 9 inches of drainage should be placed at the base after the concrete has hardened, and then a depth for soil will be left of 1 foot 9 inches, and 3 inches less toward either the front or walk, according to whichever way the base is allowed to fall to the drain. As the border is 4 feet 6 inches wide, the portion to be made might be 2 feet wide and 18 inches in depth when first made, which will allow for top-dressing when the border has settled down. One or two additions can then be made to the width of the border after the first portion has become full of roots and the Vines require additional food until the whole space has been filled up. It is surprising what a length of time the first portion will last them, providing they are top-dressed annually and fed during the growing season with stimulants after the first two seasons. It is immaterial whether the chalk is taken out as described, or only to the depth of 1 foot 9 inches, which will allow provision for drainage, and 1 foot or 14 inches of soil over the entire bed for the Vines to root in. If the Vines are to be grown on the principle that I described for early work, I should advise the latter plan to be followed, for the depth of soil given will be equivalent to the quantity advised in the Journals to which you have referred. I should advise the Vines to be purchased at once and wintered under glass, and start them into growth about the end of January, and plant them out when they have made about 2 inches of growth. This is if the Vines are intended for early forcing the following season; if not, do not start them into growth before the beginning of March. If I wanted fruit—that is, a few bunches next season, I should purchase a certain number of fruiting canes that have been well ripened, and an equal number of planting canes, and plant them out alternately; the planting canes to be disbudded nearly close back their full length, which, if allowed to extend for some distance at the top would produce excellent fruit the following year.—W. B.]



HARDY FRUIT GARDEN.

PROFITABLE FRUIT.—In planting fruit for market avoid a large collection of sorts, and plant only such as are well known to be very prolific of fruit, come into bearing early, yield fruit which commands a prompt and brisk sale, and which are found to answer in most kinds of soil and situation.

DESSERT APPLES.—Devonshire Quarrenden, Kerry Pippin, Margil, Yellow Ingestrie, Worcester Pearmain, Kentish Pippin, Sugarloaf Pippin, Red Astrachan, King of Pippins, Cox's Orange Pippin, Wyken Pippin, Sturmer Pippin, Count Pendu Plat, and Lord Burghley.

KITCHEN APPLES.—Duchess of Oldenburgh, Early Julyan, Keswick Codlin, Manx Codlin, Cellini, Lord Suffield, New Hawthornden, Cox's Pomona, Warner's King, Grenadier, Stirling Castle, Small's Admirable, Ecklinville, Golden Nohle, Lord Derby, Queen Caroline, Dumelow's Seedling, Northern Greening, Smart's Prince Albert.

PEARS.—Summer Doyenné, Lammas, Jargonelle, Williams' Bon Chrétien, Colmar d'Été, Hessele, Beurré Capiaumont, Beurré Clairgeau, Aston Town, Fertility, Eyewood, Bishop's Thumb, Broompark, Louise Bonne of Jersey, Duchesse d'Angoulême, Beurré Hardy, Doyenné du Comice.

PLUMS.—Rivers' Early Prolific, Victoria, Early Orleans, The Ozar, Mitchelson's, Prince Englebert, Belgian Purple, Denhigh, Pershore, White Magnum Bonum, Pond's Seedling, The Sultan, Green Gage, Autumn Compôte, Belle de Septembre, Prince of Wales, Grand Duke, Goliath, Cooper's Large or La Delicieuse, Corse's Nota Bene. Damsons.—Crittenden's, Rivers' Early.

CHERRIES.—Frogmore Early, Elton, Governor Wood, Adam's Crown, Bigarreau Napoleon, Werder's Early Black, Black Bigarreau, Black Tartarian, Belle Magnifique.

BUSH FRUITS.—Gooseberries.—Whitesmith, Early Sulphur, Red Warrington, Rifeman, Crown Bob, Lancashire Lad.

BLACK CURRANTS.—Lee's Prolific, Black Naples, Black Champion. Red Currants.—Knight's Large Red, Red Dutch, Raby Castle. Raspberries.—Prince of Wales, Carter's Prolific, Fastolf.

There are certain kinds of fruit which may be planted by the acre with a feeling of certainty that the return upon our outlay will be quick and abundant. Of such we would take such Apples as Margil, Keswick Codlin, Duchess of Oldenburgh, Warner's King, and such Pears as Williams' Bon Chrétien, Beurré Clairgeau, and Louise Bonne of Jersey. Rivers' Early Prolific Plum, and Crittenden Damson, and Red Warrington Gooseberry should also be planted extensively. For the assistance of those of our readers who may be planting a collection of hardy fruit we append additional lists of really fine sorts of Apples and Pears new and old.

APPLES.—Striped Beefing, Scarlet Pearmain, Reinette Van Mons, Pine Golden Pippin, Pine Apple Russet, Pearson's Plate, Norfolk Beefing, Nonesuch, Nonpareil, Mannington's Pearmain, Irish Peach, Hubbard's Pearmain, Hambledon Deux Ans, Gravenstein, Gooseberry Apple, Golden Russet, Golden Reinette, Golden Pippin, Golden Harvey, Adam's Pearmain, Alfriston, Api, Ashmead's Kernel, Barcelona Pearmain, Beauty of Kent, Bedfordshire Foundling, Bess Pool, Brabant Bellefleur, Calville Malingre, Claygate Pearmain, Coe's Golden Drop, Court of Wick, Dr. Hogg, Downton Pippin, Early Harvest, Early Joe, Emperor Alexander, Fairy, Lemon Pippin, Fearn's Pippin.

PEARS.—Beurré Sterkmans, Beurré d'Amanlis, Beurré Rance, Duchesse d'Orleans, Red Doyenné, Van Mons Leon Leclerc, Dr. Trousseau, Gansel's Bergamot, Pitmaston Duchess, Dr. Hogg Bergamot, Summer Beurré d'Aremberg, Brown Beurré, Beurré Hardy, Beurré Diel, Beurré d'Anjou, Bergamotte Espéren, Belle Julie, Baronne de Mello, Autumn Bergamot, Althorp Crassanne, Doyenné Defay, Emile d'Heyst, Hampden's Bergamot, Napoleon, Passe Colmar, Suffolk Thorn.

FRUIT FORCING.

VINES.—*Early Vines.*—Those for affording fruit in April must now be started, whether they be in pots or planted out. Vines in pots are unquestionably the best for this early forcing, and with good culture they afford fruit little inferior to that from permanently planted Vines. In the case of those in pots we advise the pots to be stood on pillars of loose bricks, and a bed of leaves or litter should be sweetened as advised in a former calendar and placed so that the heat about the pots will not at any time exceed a temperature of 70° to 75°, and at the commencement 65°. The canes should be suspended over the fermenting materials in a horizontal position to insure a regular break. Syringe three times a day, keeping every part of the house moist by sprinkling in bright weather. In order to insure regularity of starting somewhat higher temperature is necessary at this than later in the season—50° to 55° at night and 60° to 65° by day is not too high to begin with. Those planted out should have the inside border thoroughly soaked with water at a temperature of 90°; and in the case of weakly Vines a soaking of tepid liquid manure is beneficial, alike from enriching the soil as from the food supplied being conducive of a good break. The border or floor of the house should be covered with leaves and litter in a state of fermentation, occasionally turning the material and adding fresh. The ammonia-charged

atmosphere is very beneficial to the Vines, and it makes a considerable difference in the fuel used. The outside border must have a covering of leaves, litter, or fern sloping from the house outwards, and be covered with shutters, tarpaulin, or thatch, so as to throw off the rain or snow. Fermenting material is not indispensable, nor is bottom heat for those in pots; but it accelerates forcing operations considerably, and is a great aid in maintaining a moist genial atmosphere.

Vines for Starting in December.—The house should be prepared without delay for a start. Give the Vines early and complete rest, nothing contributing so much to this as pruning. In pruning two eyes are ample for affording useful bunches, but if the Vines are wanted to give large bunches longer pruning may be practised, also when the eyes at the base of the shoots are not plump; but what is gained in size of bunch is lost in compactness, size of berry, and high finish. Large bunches are generally loose, uneven in size of berry, and do not finish satisfactorily. The Vines should be stripped of the loose bark, and be washed with soft soap and warm water. A solution 4 ozs. to the gallon is strong enough, and if there is not any scale or mealy bug it will be all that is necessary. If, however, there has been any scale or mealy bug a dressing of some insecticide must follow, and it should be repeated before the Vines are started. The woodwork must be thoroughly cleansed, and the walls limewashed. The surface soil should be removed down to the roots and fresh lumpy loam supplied, with some half-inch bones—about a twentieth, and a similar proportion of wood ashes. Keep the house cool, admitting air freely except when frost prevails.

Houses of Ripe Grapes.—Remove dead and decayed foliage from the Vines where ripe Grapes are hanging, and look over the bunches frequently for the removal of decayed berries. A temperature of about 50° artificially will be the most suitable, losing no opportunity of admitting air when the days are fine, turning on the heat so as to cause a gentle warmth in the pipes, and so insure a circulation of air and the expelling of damp, turning off the heat at midday or soon after, so as to allow the pipes to cool, and the temperature at night not kept above 50° or even less on cold nights. The fault of a low night temperature is that the succeeding day being bright, and the heat not being turned on in good time, the sun heats the atmosphere much quicker than the Grapes, and any moisture in the atmosphere is condensed on the berries, and which can only be avoided by turning on the heat and admitting air early. In dull damp weather it will be necessary to keep a gentle warmth in the pipes, but the house closed, in which case the moisture will be condensed on the glass instead of the Grapes.

Ripening the Wood.—Any Vines not yet hard and brown in the wood should be kept closely stopped, fire heat being still applied accompanied with free ventilation. The laterals should by degrees be brought down to the principal buds, which will have a tendency to cause rest, especially if air is freely admitted at night, the house being kept rather warm, but not close, by day, as that would have a tendency to induce growth.

CUCUMBERS.—Maintain a temperature of 70°, falling 5° on cold nights, 70° by 75° by day, artificially, advancing to 80° and 85° with sun heat. Admit a little air at the top of the house whenever the weather is favourable, but it must be done without lowering the temperature, it being better to shut off the top heat for an hour or two when the sun is powerful than admit air when the wind is very cold. Except on very fine days the syringe should be laid aside, using it chiefly for damping the paths, walls, and other surfaces in the morning and afternoon in warm bright weather, keeping the evaporation troughs filled with liquid manure. The water given to the roots must be of the same temperature as the house, as also must the soil that is used for covering the roots.

The autumn fruiterers being now in full bearing must not be over-cropped, therefore remove the fruit when it attains a useable size, also all deformed fruit. Examine the plants at least once a week for the removal of bad leaves, and for stopping and cutting away the superfluous growths. Let the winter fruiterers advance well up the trellis before stopping them, training the side growths right and left of the stem, and not too closely, so as to insure well developed foliage. Allow few or no male blossoms, but remove them with tendrils as they appear, and add fresh warmed soil as often as the roots have fairly covered the surface of the bed.

PINES.—Liberal ventilation should be afforded to houses or pits containing young plants whenever the weather is favourable, and avoid too much moisture, as over-damping, keeping the houses constantly saturated, is more injurious than otherwise. Water will not now be often required, yet the plants should be examined every week or ten days, watering such as require it, as too great dryness is very pernicious, causing a stunted growth, which is not easily if ever made free. In the fruiting department lose no opportunity of closing the house at 85°, keeping the night temperature at 70°, or a few degrees less in cold weather. Remove all the superfluous suckers, retaining one only, the best on each plant. Suckers that appear on successional plants before the fruit is visible should be removed, except an increase of stock is urgent, and then the fruit is more or less sacrificed to the suckers.

At this time of the year it is usual to make new beds and prepare them for the young plants. Tan is the best material, retaining its heat longer than any other. In forming beds of it place lightly together. Oak or Beech leaves are a good substitute for tan, which should now be collected and as dry as possible. In forming beds of leaves they should be firmly preserved, so that they may not sink much, and also to regulate the heat, and preventing it from becoming too violent and soon spent.

PLANT HOUSES.

Epiphyllums.—Plants that have their flower buds in a forward state are very effective, when in bloom, arranged with *Adiantum cucuatum*.

The Epiphyllums should rise well above the latter, and then their brilliant flowers are displayed to the best advantage. Later plants should be kept perfectly cool, and must have less water at their roots than has been the case up to the present time, or they will suffer considerably. On the other hand, however, they must not suffer by an insufficient supply, or the roots will die, and it is a mistake to dry these plants until they shrivel. Young plants grafted in the spring, if they have been grown in heat, will have made heads fully 1 foot across, but will not yet be sufficiently ripened to flower profusely. As growth becomes completed give them a cooler and drier position to harden the growth, and they will flower freely enough towards the spring. Those having strong stocks should graft them at once. The best method is to grow a plant or plants strong and remove all side shoots as they appear until it has extended some yards along the roof of a warm house, and then cut the plant into lengths of 9 inches or 1 foot, according to the length of stem required. These will be stiff stout cuttings that would bear a good-sized head without a stake. All eyes from the axils of the leaves should be removed when the cuttings are inserted singly in the centre of 3-inch pots. At the same time, as the cuttings are inserted they should be grafted by splitting the stock at the top and fixing a strong scion of Epiphyllum, that branches in three different directions between the stock, which should be kept in position with a little matting. When the stock are rooted the scion and stock will also have become united. Scarcely one in a hundred will fail by this method if placed in a close frame in heat.

Calceolarias.—Room is now more plentiful than has been the case for some time past, and the earliest of these should be transferred into 5-inch pots without delay. They will do in cold frames for some time, as they are not so liable to damp as many plants. Those in various stages should be potted if they need more root room. The smallest now in pans and boxes will be better placed into pots, so that they will become established before the approach of winter. These do well in fibry loam, one-third leaf mould and one-seventh of manure, with a little sand added. A sharp look out must be kept for aphides, which should be destroyed directly they are observed. Fumigate only when the foliage is dry.

Cinerarias.—The earliest plants should be in a forward state, and if placed where the temperature ranges about 50° at night they will quickly come into bloom. A few will be most useful during November, especially blues, which should be raised in quantity for flowering in the autumn. Those not wanted in flower must be kept perfectly cool, but where the foliage can be preserved from damp. All plants that have filled their largest pots with roots should have weak stimulants every time water is needed. Later batches may be transferred into larger pots according to their size and the purpose for which they may be required. A good batch placed now in 5 and 6-inch, from 3 and 4-inch pots, will be very useful stuff in the spring. Young stock still in boxes may be placed into the last named size, and then potted into larger after the turn of the year.

Bulbs.—The latest Hyacinths, Tulips, and Narcissi should be potted without further delay. No advantage will be gained by keeping them out of the soil any longer. The last batch of Romans should also be potted.

Lily of the Valley.—Home-grown clumps that have been prepared for forcing by growing them in pots may now be started into growth. They should be plunged in brisk bottom heat, and the crowns covered with a few inches of cocoa-cut fibre refuse. Imported single crowns and clumps will soon be to hand, and should be potted or boxed. The former for early work should be laid thickly into boxes and pans amongst leaf mould or fibre, while the latter should be potted. For later flowering a dozen or fifteen single crowns should be placed evenly into each 5-inch pot if these are preferred to the clumps. After these are potted or boxed they should be stood outside until after they have been exposed to a good frost. *Spiraea japonica* and *Dielytra spectabilis* may also be potted into 5 and 6-inch pots, and exposed the same as advised for Lily of the Valley.

THE BEE-KEEPER.

HIVE MAKING FOR WORKING MEN.

ALTHOUGH outside cases are of a very old date, and still serve the purpose of preserving bees much better than double-cases, many bee-keepers adhere to use the latter hives, notwithstanding the fact that they possess many disadvantages. They are in the first place more costly and difficult to make than the single-cased hives, and very much more difficult to handle or move about; while, the most important of all, they do not preserve the bees from damp so well as those having outside cases, or even a simple covering of straw surmounted by a good projecting waterproof roof.

The shape of a hive should be such as to have all the honey stored overhead and above the brood. Such a hive is narrow and easily carried about. The horizontal sections of such a hive, to insure the combs against collapsing during transit or under a broiling sun, should not be more than 6 inches deep in the clear. Another advantage these shallow boxes have is that the upper ones can be removed after fully sealed out; hence there is no

waste of comb. A hive should be rigid in all its parts, and secure against bees escaping when shut in, which may be easily done with thorough ventilation. Moreover, they must be perfectly smooth on the top, and the spaces between the bars closed by slides. Every hive may carry its own stand, but be detachable if desired. This gives the bee-keeper greater control over his hives in many respects than when fixed, and admits of any portion of the hive being renewed or repaired without being put to the trouble of breaking up the whole hive before that is effected. These are but a few of the advantages a hive should possess, and will be found in the one I am about to describe, which for cheapness and efficiency I have never seen surpassed. I had it in use from thirty to forty years ago, and have taken them to the moors and other places, distances of seventy to eighty miles, without a single mishap as to breakdown of comb or bees being smothered.

The cost of the materials and price for a hive of three divisions and stand containing ventilating floor will be—two pairs of brass butts and nails, 3d.; sides for divisions and stands 5 feet 1 inch by 6½ by ¾ and of white pine, 1s.; if of yellow pine, 3s. 6d.; four posts, 9 inches by 2 by 1½ and bottom, 3d.; wood for frames, 6d.; nails and perforated zinc with alighting board, 8d.; tackets for keeping frames proper distance from each other, round headed and 1000 to the pound, 1d. Total 2s. 9d.

The tools required for making a hive of this sort need not be many, nor need the wood be planed, because if thoroughly dried a rub with sand paper will give quite a neat surface either for paint or without. As every division should have a sliding mouthpiece a pair of ¾ match ploughs should be at hand. A small circular saw would do nearly all the other necessary work and checking, but even without that a common hand saw and checking plane will be all that is necessary.

Many amateurs think that unless hives are dovetailed they would be imperfect. This cannot be so, as if properly checked and nailed they are better adapted for outside than if dovetailed. Nailing holds the joints together and excludes rain far better than when dovetailed.

It is important that the heart side of the wood be kept outermost. Keeping that in view the amateur should gauge the boards to the proper and equal breadth. When that is done mark off the lengths of the sides and ends of the box. I make my hives 15¼ inches square outside measure or 14 inches inside, which gives 1½ inch from centre to centre of each bar unless the outer spaces, which measure quarter of an inch more. When the frames are made the top bars, 1¼ inch broad by half an inch thick (this weight is necessary to prevent the combs collapsing when the slightest pressure is put upon them, as occurs with lighter ones, and is often the ruin of the hive). Tackets of the size mentioned are driven in near the lower edge of the top bar opposite the end piece of the frame. The end pieces could be made to preserve the proper distances, but tackets are cheaper and the frames are more easily lifted out and in. A larger tacklet is put in the hive at four corners opposite those in the frames, and care should be taken that the frames are easy, as no dividing boards are necessary in these hives. Ten blocks of wood are required to fill in the crown of the hive of the same depth as the thickness of the top bars 1 by 3-16 thick. These blocks must have a check taken out opposite the tackets on the under side, so that they will rest upon the same level as the frames. Being a little narrower than the space between the bars, gives sufficient opening for the ascent of vitiated air in an insensible manner, and reduces propolis to a minimum.

Returning to the squaring and cutting the pieces for hives and stand, mark off the pieces for the fronts and backs at 15¼ long. Square and cut them accurately, then on the top edge check a piece out the half thickness of the wood and half an inch deep, so that the frames be flush with the top of the hive. The ends of the same must be checked the same depth on the thickness, but of the exact thickness of the sides, which ought to be five-eighths of an inch. The front piece should now be reduced half an inch and the groove run in a lower edge for a sliding mouthpiece, which should be easy and made to match by the plough, which forms the feather. That is all the work necessary to prepare the fronts and backs. The sides only require to be cut exactly to one-sixteenth of an inch longer than the top bars, so that the latter be not jammed. The parts for the stand require no checking on the top edge, but the piece for the back should be an inch or so narrower, for the purpose of allowing the false floor to be flush with the under edge and held by a button. When these pieces are all checked as described, are ready to be nailed, and the best nails for the purpose are the steel oval-shaped, nailed both ways, and a little slanted dovetail ways. When nailed properly together the series consists of four

boxes minus tops or bottom, three of them having a rabbet on top edge front and back half the thickness of the wood by half an inch deep, the front one in three of them having the entrance the whole width of the box half an inch high fitted with a sliding mouthpiece.

To complete the stand lay the four little posts that form the feet upon their edge, and at the distance from top, which will cause the folding floor to shut flush with the back and bottom edge of stand, which should be about 1 inch narrower than the others. Make two saw cuts that will when cleaned out form a groove one-eighth of an inch deep and wide. After the feet are firmly nailed in their places from the outside fit a thin piece of wood half an inch broader than posts to form a stop for the folding bottom. Now take a piece of thin wood and cut to the size, then nail firmly to two bars of wood, on to which the hinges must be screwed. A stop now may be placed at the back opposite the hinges, and a wooden button secures and keeps the bottom in its place. A screw nail being put into one of the feet serves as a stop to prevent it falling close to the ground or being dragged when the hive is moved about. The perforated zinc may be slightly tacked on the top edges, which if desired may have a little well soldered on for feeding from below; or if desired before the zinc is fastened a little piece is cut out of the top of the stand a quarter of an inch deep from the zinc, so as to admit a fountain feeder to be pushed in, when the bees will sip the syrup through the perforations. A little block of wood or tin slide closes the opening when not required for feeding. This method of feeding is handy, and a large number of hives may be fed at any time quickly and with little trouble.

A fillet should be nailed underneath the alighting board, which should be hinged so as to fold up out of the way when in transit. The divisions may be made rigid to one another with hooping, having three holes, back flap hinges, which holds down out of the way when manipulating; or, better still, brass clasps of the "Von Deussen" style, which cost about 1½d. each. The making of the frames requires exactness. The wood for the top bars, half inch thick, should be clean and free from knots, and cut to the exact length one-sixteenth shorter than sides of the hive were cut. Plane one side of the board, then shoot one edge straight and square with the ends; then cut in strips 1¼ inch broad, having previously made a draught on face five-eighths and one-sixteenth from the ends, where the hole must be bored for the ends of the frame, mark the centre with a gage, and enter the piece at the intersection. After these are bored a groove one-eighth of an inch wide and deep should be made with a circular saw. Failing the circular, the groove should be made with a plough plane before cutting into strips, but always after the hole has been bored. The end pieces for the frame should need not be more than 5½ inches long by 1 inch thick. Make a tenon on one end and on the other two across, one on each corner. No bottom rail is required with shallow hives, but if beyond 8 inches deep should have them. After the block is thus prepared cut into little clefts a quarter of an inch thick; then dip the tenon into glue and drive into the top bar, so that they form a right angle with it. The pieces for closing the spaces between the bars are of the same length, and if the raggle is cut and the board to suit the distance tacked, then cut into strips three-sixteenths of an inch thick. The hive after being fitted with foundation is finished, and any artisan can make in five hours. When made will prove to be a hive superior for bee-husbandry to any ten times its price; and when covered externally with a hackle of some sort and surmounted with a sheet of galvanised iron, which costs about 9d., cannot be surpassed for keeping bees dry, comfortable, and healthy.

Some people may, however, prefer an outside case, and there is none better than the one made for the "best hive in creation," but for cheapness and efficiency a few thin boards not more than 4 inches broad by quarter of an inch thick, having their bottom edges beveled inwards for a drip and planed on outside nailed on posts overlapping each other half an inch or so cannot be surpassed, and will not cost more off the saw, including posts, 2 by 6 long by 2 by ½ than 1s. 8d. If a cheap roof is wanted a sheet of iron bent over two circular end pieces of wood, and held in its place by four screws, makes a perfect roof, providing air courses are left above. If a better thing is wanted then a square frame is necessary, and it covered with lead or zinc. If the bee-keeper is of an artistic turn of mind the outside cases can be made very ornamental by tracing designs upon the case and employing fir cones and acorns to complete them. In that case a projecting Swiss roof will be desirable.

Altogether such work does not add to the utility of the cases. It forms a pleasant pastime and prepares them for other work, which may in the end prove more remunerative than keeping bees.—A. LANARKSHIRE BEE-KEEPER.

TRADE CATALOGUES RECEIVED.

James Dickson, "Newton" Nurseries, Chester.—*Catalogue of Forest and Ornamental Trees, Evergreens, &c.*
Charles Turner, Slough.—*Catalogue of Roses and Fruit Trees.*
J. Cheal & Sons, Crawley, Sussex.—*Catalogue of Trees and Shrubs, Roses, and Fruit Trees.*
James Cocker & Sons, Aberdeen.—*Catalogue of Roses.*
Cooling & Sons, Bath.—*Catalogue of Roses and Fruit Trees.*
James Dickson & Son, Chester.—*Catalogue of Forest Trees for 1886-7.*
Dammann & Co., Naples.—*Illustrated Seed Catalogue.*
Ewing & Co., Havant, Hampshire.—*Price List of Nursery Stock, Roses, and Hardy Trees and Shrubs.*



* * * All correspondence should be directed either to "THE EDITOR" or to "THE PUBLISHER." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

Books (S. S.).—The "Cottage Gardener's Dictionary" will probably suit you, as it not only contains a "little of most things" as you say, but gives copious information on the culture of important plants and crops. It can be had from this office price 7s. 6d., post free 8s. 3d. (W. R.).—Write to Mr. William Paul, Waltham Cross Nurseries, Herts.

Birkenhead's Beetle Trap (E. F.).—This simple but excellent contrivance for catching beetles and other nocturnal crawlers is advertised in another column.

Seedling Pear (H. B.).—The texture of the flesh is too watery, and the juice has sweetness without richness of flavour, neither has it any aroma. It is inferior to a great many of the midseason Pears that are now in use.

Cement Joints for Hot-water Pipes (W. H.).—We have seen at least a mile in length of pipes fixed with cement joints, and nothing could answer better. We have also seen some failures, the result of inferior material or workmanship. If the work is well done we have no doubt it will answer, but it should not be entrusted to inexperienced persons.

Vines not Thriving (C. G., Mansfield).—The roughness of the leaves is not evidence of the presence of the phylloxera, nor do we find any traces of this great scourge of the Vine on the roots. Possibly the canes were left too long when planted, and the numerous "breaks" exhausted the sap from them before roots were produced in sufficient numbers to imbibe adequate nourishment for inciting and maintaining strong growths.

Small Mushrooms (Bolton).—It is just possible that you have had the manure too long in preparation and turned it over too frequently, hence weakening it if not drying it too much. See remarks on this subject in the supplement to the fourth edition of *Wright's Mushrooms for the Million*. The fact that a few Mushrooms attain a fair size at the bottom of the bed suggests that the top is too weak or too dry. You might try the effects of weak tepid liquid manure after sweeping off the small "fur-like clusters," and casing with a little stronger soil, might also be advantageous. The temperature is right.

Peaches versus Tomatoes (C. C.).—Peaches do not pay nearly so well as Tomatoes, more particularly as you wish to winter Zonal Pelargoniums and other flowering plants in the house. You could not have a better Peach than Stirling Castle. The Peach would do on one side of the house and the Tomatoes the other, but we do not advise this arrangement, and we should keep to the Zonal Pelargoniums, &c. in winter and Tomatoes in summer, as they would prove most satisfactory and pay best. Your Tomato proved an early and free-cropping variety, producing heavy brightly coloured fruits of good quality, though we are not able to say that it excels some other varieties with which it was grown.

Fruit Buds, Single Cordons, Verbena venosa, Propagation, &c. (F. J.).—Two leaves at the base of a bud do not indicate a fruit bud, nor one leaf at the base of a bud a wood bud. A fruit bud is more round and prominent than a wood bud, which is rarely half the size, very much thinner, and pointed. Single cordons intended for training oblique should be grown a year upright if they are wanted elongated, or they may be trained in the proper position at once. We have tried both, and think the latter the better plan, as the trees get much better furnished at the base than when trained upright. The best time to divide *Verbena venosa* is in spring, or it is readily raised from seed. For destroying the weeds on gravel walks you could not have anything better than Smith's weed killer, which has been frequently advertised. We have no recollection of giving a receipt for making artificial manure. Any of the advertised manures would answer your purpose, and a dressing could be applied now, following the instructions given in each case.

Grapes for Mixed Vinery (Muscat).—As you exclude from the choice Muscat of Alexandria, Black Hamburg, and Alicante, and do not wish for any like Syrian in flavour, our selection is Chasselas Vibert, Dr. Hogg, Duke of Buccleuch, Golden Queen, Foster's Seedling, and Buckland Sweetwater, which are all white; Madresfield Court, Black Prince, Gros Maroo, Alnwick Seedling, Mrs. Pince, Gros Guillaume, and Lady Downe's—the last named are black. If quality is the main object then West's St. Peter's would be preferable to Gros Guillaume. A dozen varieties not in general cultivation are Dr. Hogg, Mrs. Pearson, Black Frontignan, Purple Constantia, all four true Frontignans; Black Muscat (Muscat Hamburg), Madresfield Court, Mrs. Pince, Black Muscat, Chasselas Vibert, Golden Queen, Duke of Buccleuch, Alnwick Seedling, and Gros Maroo.

Planting Rhubarb (Kirk Allen).—Spring is the best time to plant Rhubarb, just when it is beginning to grow, cutting it into as many parts as can be done with one or more crowns and some portion of roots to each. The variety you name—indeed all Rhubarb for forcing—should be planted in rows 3 feet apart every way, it requiring to be grown a couple of years before it is lifted for forcing. The ground must be well manured and trenched as deeply as the good soil allows, the manure being well mixed with the top spit. Double ploughing might answer, but single deep ploughing would hardly be deep enough, especially as the ground is fresh broken. If you want the crowns for sale they are usually not so large as for private forcing, and the distance is reduced to 2 feet apart in the rows, or the plants are placed 2 feet 6 inches apart every way. The stronger and larger the crowns the better they are for forcing.

Chrysanthemum Roots Injured (A Constant Reader).—We are very sorry to hear of the roots of your plants being injured with nitrate of soda; but as you say you have given less than Mr. Molyneux advised, we are unable to account for its ill effect. Mr. Molyneux only advises what he uses and finds safe and good. Both nitrate of soda and sulphate of ammonia are liable to adulteration with salt, and even if not adulterated a small quantity of each will injure the roots of plants if given when the soil is dry. We cannot undertake to analyse chemical manures, and the safe course to adopt in using them is to commence with very small quantities, and try their effect on a few plants at first. Much injury is done by the too free use of powerful stimulants. Mr. Molyneux's blooms at the autumn shows afford conclusive evidence that what he gives is good for the plants, and he recommends nothing that he has not proved. Moreover, strong plants with the pots well filled with active roots are improved by solutions that would injure weak plants with a corresponding scarcity of roots. We suspect you have made some mistake in the use of the fertiliser.

Roses for a Smoky District (A Constant Reader).—The following Hybrid Perpetuals should do well with you:—Ahl Grand, Abel Carriere, Baroness Rothschild, Bessie Johnson, La France, Camille Bernardin, Captain Christy, Docteur Andry, Duke of Edinburgh, Duke of Teck, Fisher Holmes, Charles Lefebvre, François Michelin, General Jacqueminot, John Hopper, Jules Margottin, Louis Van Houtte, Madame Gabriel Luizet, Madame George Paul, Madame Hippolyte Jamain, Madame Victor Verdier, Marie Baumann, Merveille de Lyon, Pride of Waltham, Prince Camille de Rohan, Senateur Vaisse, Stsr of Waltham, Ulrich Brunner, Violette Bouyer, and the old Bourbon Souvenir de la Malmaison. All the varieties named will do well in pots. The varieties of Tea Roses for outside planting for the neighbourhood of a town are somewhat limited. The following Tea and Noisette kinds will do:—Gloire de Dijon, Wm. Allen Richardson, Grace Darling, Madame Falcot, Abricote, Madame Lamhard, Ruhens, and Marie Van Houtte. For pots those named and Niphetos, Safrano, Isabella Sprunt, Souvenir d'un Ami, Souvenir de Paul Neyron, Souvenir d'Elise, Perle des Jardins, Madame Willermoz, Madame Angele Jacquier, Innocente Pirola, Anna Ollivier, Alba Rosea, and Catherine Mernet. It would be very difficult indeed for us to say why your Rose blooms fail to open from the information before us. In planting prepare the soil well, and if the natural soil is poor and unfertile remove it and replace it with good fibry loam and manure with a few half-inch bones added.

Names of Fruits.—The names and addresses of senders of fruit to be named must in all cases be enclosed with the specimens, whether letters referring to the fruit are sent by post or not. The names are not necessarily required for publication, initials sufficing for that. Only six specimens can be named at once, and surplus fruits beyond that number cannot be preserved. (Toole & Co.).—The Apples sent have no numbers attached to them, consequently cannot be named. (Hillside).—The old Orange Pippin. (John Garnett).—Beurre diel. (No Name).—1, Lamb Abbey Pearmain; 2, Claygate Pearmain. (J. G.).—1, Duchesse d'Orleans; 2, Duc de Bordeaux; 4, Fondante d'Automne; 6, Beurre Superfin. (Keswick).—Not known. (T. H.).—1, Golden Pearmain; 2, Lord Suffield; 3, Golden Winter Pearmain; 4, Ord's; 5, Hawthornden. (Constant Reader).—We cannot give you the name of the Grape exactly, but it is one of the Spanish varieties known as Malvoisie, of which there are many. It is not of such excellence in flavour as to make it worth cultivating, as in that respect it is not superior to those that are imported from Spain at this season. (B. O. B.).—2, Seckle; 3, Duc de Bordeaux; 4, Knight's Monarch; 5, Catillac; 6, Bergamotte Espren. (H. H.).—1, Doyenné Boissac; 2, Suffolk Thorn; 3, Althorp Crasanne; 4, Rotten; 5, Fondante de Noël; 6, Hacon's Incomparable. Several packages of fruit have been received without the names of the senders, and consequently cannot be attended to.

Names of Plants.—We only undertake to name species of plants, not varieties that have originated from seed and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in firm boxes. Slightly damp moss or soft green leaves form the best packing, dry cotton wool the worst. Not more than six specimens can be named at once. (H. K.).—1, Insufficient for identification; 2, Viburnum lantana; 3, Leycesteria formosa; 4, Spiraea salicifolia. (G. B.).—Oncidium tigrinum, Cypripedium insigne. (S. R. T.).—Cattleya bicolor. (W. C. Feebles).—Abies Fraseri.

Lanarkshire Stewarton Hives (E. A.).—The price of these hives depends upon the quality of material and workmanship employed. They can be had from a few shillings up to £2, the supers cost from 3s. to 4s. per dozen. Messrs. George Neighbour & Sons supply both hives and supers.

"A Lanarkshire Bee-keeper" does not now make hives for sale, being unable through ill health to follow that avocation. He is, however, glad to assist and by giving advice through the Journal.

COVENT GARDEN MARKET.—OCTOBER 28TH.

TRADE quiet, prices remaining the same. Good samples of Pines in fair demand.

FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples	1 6 to 4 0		Melon	1 0 to 2 0	
Cherries	0 0 to 0 0		Oranges	100 6 to 12 0	
Cobs	50 0 to 55 0		Peaches	6 0 to 12 0	
Currants, Black ..	0 0 to 0 0		Pears	1 0 to 2 0	
" Red	0 0 to 0 0		Pine Apples English ..	3 0 to 4 0	
Figs	0 6 to 0 9		Plums	1 0 to 2 0	
Grapes	0 6 to 3 9		St. Michael Pines ..	4 0 to 6 0	
Lemons	10 0 to 15 0		Strawberries	0 0 to 0 0	

VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Artichokes	1 0 to 0 0		Lettuce	1 0 to 1 6	
Asparagus	0 0 to 0 0		Mushrooms	0 6 to 1 0	
Beans, Kidney ..	2 0 to 3 0		Mustard and Cress punnet	0 2 to 0 0	
Beet, Red	1 0 to 2 0		Onions	0 3 to 0 0	
Broccoli	0 0 to 0 0		Parsley .. dozen bunches	2 0 to 3 0	
Brussels Sprouts ..	0 0 to 0 0		Parsnips	1 0 to 2 0	
Cabbage	1 6 to 0 0		Potatoes	4 0 to 5 0	
Capicums	1 6 to 2 0		" Kidney .. cwt.	4 8 to 5 0	
Carrots	0 4 to 0 0		Rhubarb	0 2 to 0 6	
Cauliflowers	3 0 to 4 0		Salsify	1 0 to 1 0	
Celery	1 6 to 2 0		Scorzonera	1 6 to 0 0	
Coleworts doz. bunches	2 0 to 4 0		Soakale	0 0 to 0 0	
Cucumbers	0 8 to 0 4		Sballots	0 3 to 0 6	
Endive	1 0 to 2 0		Spinach	3 0 to 4 4	
Herbs	0 2 to 0 0		Tomatoes	0 2 to 0 6	
Leeks	0 3 to 0 4		Turnips	0 4 to 0 0	

PLANTS IN POTS.

	s. d.	s. d.		s. d.	s. d.
Aralia Sieboldi ..	9 0 to 18 0		Ficus elastica ..	1 6 to 7 0	
Arbor vitæ (golden)	6 0 to 9 0		Fuchsia	0 0 to 0 0	
" (common)	6 0 to 12 0		Foliage Plants, var. each	2 0 to 10 0	
Asters	6 0 to 9 0		Heliotrope	0 9 to 0 0	
Bedding Plants, var. doz.	0 0 to 0 0		Hydrangea	0 0 to 0 0	
Begonias	4 0 to 9 0		Ivy Geraniums ..	0 0 to 0 0	
Chrysanthemum ..	6 0 to 12 0		Lilium auratum ..	0 0 to 0 0	
Cockscombs	4 0 to 6 0		" lancifolium per doz.	0 0 to 0 0	
Cyperus	4 0 to 12 0		" longiflorum per doz.	0 0 to 0 0	
Dracena terminalis, dozen	30 0 to 60 0		Lobelia	0 0 to 0 0	
" viridis ..	12 0 to 24 0		Marguerite Daisy ..	6 0 to 9 0	
Erica, various ..	9 0 to 12 0		Mignonette	3 0 to 6 0	
" hyemalis per dozen	18 0 to 24 0		Musk	0 0 to 0 0	
" gracilis per dozen	9 0 to 12 0		Myrtles	6 0 to 12 0	
Eucynymus, in var. dozen	6 0 to 18 0		Palms, in var. ..	2 6 to 21 0	
Evergreens, in var. dozen	6 0 to 24 0		Pelargoniums, scarlet, doz.	3 0 to 6 0	
Ferns, in variety ..	4 0 to 18 0		Pelargoniums	0 0 to 0 0	

CUT FLOWERS.

	s. d.	s. d.		s. d.	s. d.
Abutilons .. 12 bunches	2 0 to 4 0		Lily of the Valley, 12 sprays	0 0 to 0 0	
Ageratum .. 12 bunches	0 0 to 0 0		Marguerites .. 12 bunches	2 0 to 6 0	
Arm Lilies .. 12 blooms	4 0 to 8 0		Mignonette .. 12 bunches	1 0 to 8 0	
Asters 12 bunches	6 0 to 8 0		Myosotis 12 bunches	1 6 to 3 0	
Bouvardias .. per bunch	0 6 to 1 0		Narciss, Paper-white bunch	0 4 to 0 6	
Camellias .. 12 blooms	3 0 to 6 0		Pelargoniums, per 12 trusses	0 9 to 1 0	
Carnations .. 12 blooms	1 0 to 3 0		" scarlet, 12 trusses	0 3 to 0 6	
" .. 12 bunches	4 0 to 9 0		Roses 12 bunches	4 0 to 9 0	
Chrysanthemums 12 bunches	4 0 to 9 0		" (indoor), per dozen	0 6 to 2 0	
" .. 12 blooms	1 0 to 6 0		" Tea dozen	0 9 to 1 0	
Cornflower .. 12 bunches	0 0 to 0 0		" red dozen	0 0 to 0 0	
Dahlias .. 12 bunches	2 0 to 4 0		Parma Violets (French)	4 0 to 5 0	
Epiphyllum .. doz. blooms	0 6 to 0 0		Pyrethrum .. 12 bunches	8 0 to 6 0	
Eucharis per dozen	3 0 to 6 0		Stephanotis .. 12 sprays	4 0 to 6 0	
Gardenias .. 12 blooms	3 0 to 5 0		Stocks, various 12 bunches	3 0 to 5 0	
Gladioli .. 12 bunches	9 0 to 12 0		Sunflowers	0 0 to 0 0	
Hyacinths, Roman, 12 sprays	3 0 to 4 0		Sweet Peas .. 12 bunches	0 0 to 0 0	
Lapageria, white, 12 blooms	2 0 to 4 0		Tropeolum .. 12 bunches	1 8 to 2 0	
Lapageria, red .. 12 blooms	1 0 to 2 0		Tuberose .. 12 blooms	0 6 to 1 0	
" longiflorum, 12 blms.	3 0 to 6 0		Violets 12 bunches	1 0 to 0 0	
Lilac (white), French, bunch	6 0 to 8 0		" Czar, French, per bunch	1 0 to 1 6	



SHEEP FOLDING.

REGARDED from whatever point of view we may take of it, this important process of farming bears the most severe test we can apply to it with impunity if only the guidance and management of it is in really skilful hands. For example, in our first paper we dwelt most upon its superiority over farmyard manure upon arable land, yet it plays an even more important part in farming economy when applied to pasture. Old pasture, poverty-stricken and bare, is brought into flourishing condition in a single season by folding. This is done to best advantage during winter if only the

land is naturally sound or has been made so by drainage. We can hardly conceive of a man being content to take it for granted that land is so wet that it cannot be reclaimed by drainage, unless the surface is so flat and low as to be subject to periodical floodings, as in the case of marshes and low-lying land by the margins of rivers. Yet we know upland farms with an undulating surface which are regarded as altogether unsuitable for sheep in winter. In point of fact we have one such farm in hand now, upon which we are told there has been no really sound practical work done within the memory of any living person. Upon this farm the work of improvement goes steadily on. Huge ridges of soil accumulated during a long course of years alongside the deep ditches which intersect the entire farm are being burnt, and the burnt earth is spread upon the surface of the adjacent fields. The "pan" has been broken up by steam cultivation, field after field is being drained into the nearest ditch, and it is our intention eventually to lay down the whole of the upper slopes of this farm to permanent pasture, retaining the lower fields under the plough for green crops, roots, and corn, in suitable proportion for a sheep farm. The surface lends itself admirably to our purpose, for the farm forms the head of a valley, with slopes low and wide, the uplands of the farm sweeping round in a wide semicircle; yet, because the soil is somewhat heavy and retentive of moisture, and the surface so open and treeless as to afford hardly any natural facilities for shelter, it is considered unsuitable for sheep.

We shall proceed with caution in laying down part of this farm in permanent pasture. A selection will be made of one or more fields that are clean, sound, and fertile, and next spring the best mixture of Grasses and Clovers we can procure will be sown there with a corn crop, by means of which we hope to cover the expense of our outlay upon the Grass and Clover seed. In the following season we shall only obtain some grazing for lambs in fold upon our new pasture; but then, apart from the folding, our outlay both for the labour of men and horses will have practically ceased, for that year at any rate, and we shall only have to meet the ordinary demands for tithes and taxes. Meanwhile strenuous efforts will be made to bring the remainder of the land of this farm into as high a condition of cultivation as possible, so that more land may be brought under pasture year by year till our purpose is accomplished.

In thinking out our plans we look forward to possible results, and how we may reasonably hope to attain them. The second year of the young pasture will witness the introduction of the ewe flock upon it in folds immediately after the green crops of spring upon arable land are exhausted. Due care will be taken to have the folds so small as to ensure a sufficiently close clearance of the grass in twenty-four hours, and both lambs and ewes will have enough dry food for condition and growth, the ewes having a mixture of crushed Oats and Beans, with chopped hay and Barley, Oat, or Pea straw, and the lambs some of Mackinder's lamb food, which we find answer better for them than any other dry food we have tried. The lambs will be let run forward before the ewes through lamb gates, and the lamb food also placed forward out of the way of the ewes. This process of folding will be repeated as often as necessary throughout the season of active growth, the sheep and lambs being withdrawn altogether in both the first and second seasons after September or October, according to the state of the weather. It is thus obvious that while we should be able to derive some benefit from the pasture both in the first and second seasons we should be enriching it in the most economical manner, and our labour bill will be reduced to a minimum.

By the third season the sheep folding would have brought it into a suitable condition either for hay, for sheep feeding, or for both, and when the entire young pasturage is so finished the farm will be to all intents and purposes a sheep farm. We may mention in connection with this undertaking that we have in view a certain outlay for sheep shelter in

the form of a few rough but commodious lodges, with dry hard floors, to which the sheep can at all times have access.

(To be continued).

WORK ON THE HOME FARM.

Mangold leaves are being ploughed in for Winter Tares, which should be sown at once to afford us a nice sturdy plant well calculated to pass unscathed through all the trying changes of winter weather. The ploughing in of the leaves of our root crops is altogether preferable to turning sheep on the land to eat them, as is still done generally, so slowly do farmers come to recognise the value of leaves or of green crops as a manure. Yet the lesson is not hard to learn. Throw a few cartloads of Cabbage or Turnip leaves into a heap, and as decay sets in the powerful and very offensive odour arising from the heap shows unmistakably how rich in fertility are the gases escaping into the air from it. Better still, plough in a thick dressing of any green crop, and the effect upon the next crop will be equal to any specially prepared manure we can apply. Ploughs are in full swing on all farms now, either for winter corn or for turning the land up for the winter. As much land as possible will be thrown up into ridges in readiness for early spring work. Depend upon it there can be no better practice with soil that is at all wet or heavy, for after the softening influence of winter weather upon it, it comes to our hand in the best possible condition for a fine seed bed and early sowing. How can we hope to have land ready in good time for sowing spring corn after it has been left in stubble throughout winter? Preparations are being made for more drainage where it is required, and the first step is to select and open out good outfalls. If the main drains empty into ditches, it would be well to first scour the ditches. Not only should this be done for new work, but the mouths of all old drains should be examined, and due care taken that there is nothing in the way to prevent an unchecked flow of water from them. Let everything possible be done to relieve the soil of superfluous water as the first step to all good farming. Attention should also be given to the storage of water for a time of drought, for the carriage of water from a distance is an expensive and laborious undertaking, which an extra pond or two may enable us to avoid. Care should also be taken that drains near yards and buildings are in sound working order. We recently had a drain burst during a storm near a barn, and but for prompt action the water would have flooded the barn floor containing a large quantity of corn ready for market.

SMALL HOLDINGS.

If your agricultural correspondents could give some reliable information on the subject of small holdings I think it might be of interest to some of the readers of this Journal. The great drawback to the "three acres and a cow" scheme is that there is more work than a man can do in his leisure hours, and on the other hand not near enough to occupy the whole of his time. The difficulty in such a case would be to find a master who would employ a man, say, four days a week, leaving him at liberty the other two.

How many acres of land can be well cultivated by one man, so that his whole time is occupied? how much capital per acre would be sufficient? and in what way would it be most advantageously laid out at starting? How much on horses, implements, cows, and other stock, and any other hints that would be of service to any who may be desirous of trying a small holding.—INQUIRER.

SPRATTS PATENT.—At the Liverpool International Exhibition, 1886, Spratts Patent, Limited, were awarded the gold medal for superior excellence in the manufacture of their biscuits, including special mention of the quality of their cabin biscuits.

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude, 111 feet.

DATE.	9 A.M.					IN THE DAY.					Rain
	Barometer at 32° and Sea Level	Hygrometer.		Direction of Wind.	Temp. of Soil at 1 foot.	Shade Temperature.		Radiation Temperature.			
		Dry.	Wet.			Max.	Min.	In sun.	On grass.		
1886.	Inches.	deg.	deg.		deg.	deg.	deg.	deg.	deg.	In.	
October.											
Sunday	17	29.045	49.6	45.8	W.	52.3	55.2	47.7	39.7	44.4	0.010
Monday	18	29.404	52.4	51.1	N. E.	51.8	57.2	44.2	76.1	40.9	0.14
Tuesday	19	29.577	52.6	51.3	N. E.	52.0	54.6	45.6	59.0	37.8	0.010
Wednesday ..	20	29.637	53.1	52.0	N. E.	51.8	58.0	48.2	68.6	42.5	0.017
Thursday	21	29.890	46.4	46.2	W.	51.8	55.7	45.2	82.3	44.0	0.010
Friday	22	30.013	43.1	42.8	S. W.	51.5	55.2	41.7	76.2	35.4	0.024
Saturday	23	30.024	51.6	50.8	E.	50.2	54.3	42.3	62.2	32.3	0.047
		29.659	49.7	48.6		51.6	55.7	45.0	74.0	39.6	0.132

REMARKS.

17th.—Fair, with slight showers.
 18th.—Dull, with brief bright intervals and slight showers.
 19th.—Damp, foggy, and dull.
 20th.—Dull, with slight rain in morning, and some sunshine in early afternoon.
 21st.—Fair morning, fine bright afternoon, damp evening.
 22nd.—Fog early, fine bright morning, foggy afternoon; fair evening.
 23rd.—Wet day; fine evening.
 An unsettled and dull week, giving the impression of more rain than really fell. Temperature about 8° below that of the preceding week, but still nearly 2° above the average.—G. J. SYMONS.



4	TH	Stoke Newington and Brixton Shows.
5	F	Crystal Palace Show (two days).
6	S	
7	SUN	20TH SUNDAY AFTER TRINITY.
8	M	Lambeth Show (three days). [and St. Neots Shows.
9	TU	Royal Hort. Society, Committees at 11 A.M. Kingston, Southampton,
10	W	National Chrysanthemum Society. Croydon and Bath Shows.

DEATH OF MR. GEORGE WILLIAM JOHNSON.

IT is our mournful duty to record the death of the founder of this Journal, Mr. George William Johnson, who passed quietly away at his residence, Waldronhurst, Croydon, on Friday evening last, at the ripe age of eighty-four years. It will be remembered by many of our readers that after a period of thirty-two years of diligent and assiduous editorial labour, Mr. Johnson retired at the end of June, 1881, to benefit by repose that had become a necessity through failing health consequent on advancing years.

If ever a worker earned the right to rest, that worker was Mr. Johnson. For fifty-five years his great intellect and strong mind were in constant activity. Conducting experiments and searching for truth appeared to be the chief work of his life. His capacity for research was enormous, as is evidenced in the compilation of his "History of Gardening," a work which few but himself could have accomplished so well. Yet the best he had to say for it was what another great man said of his own productions—"I see daily 'complete' systems and 'complete' dictionaries; but I cannot discover this perfection in any of my performances, which after all my labour and pains most provokingly still continue incomplete and erroneous." This is characteristic of him whose loss we now deplore. A consciousness of something left undone impressed him, but at the same time impelled him the more determinedly to pursue the object of his search. "Pause, and consider well before you begin anything, but if you once commence never give up, NEVER," was his counsel to an assistant, and that firm, strong, decisive "Never," uttered in a tone not to be forgotten, amply displayed the unflinching resolution of a powerful mind.

But with that strength was gentleness. Few men, perhaps, possessed in an equal degree the power to overawe and to fascinate—to command respect and deference, yet to incite love towards him. "If you want to know anything don't be afraid to ask; if you want any help come to me, and if I can help you I will." Such words, kindly spoken, were the more assuring since everyone to whom they were addressed well knew them to be the expression of real intention. There was no mistaking the moods of our departed friend. If he were joking (and he simply overflowed with humour), it was perfectly transparent, and equally so when he spoke the words of seriousness, and then not one was lightly entered, every sentence being framed so clearly that it could not be misunderstood, every order given with precision to

insure its being carried out, and every promise made bound to be fulfilled.

Mr. Johnson's method of reproving, when occasion arose for its exercise, was original and impressive. No man could speak more sternly than he; no one was more quick to perceive if he caused pain; and then his power of healing the wound was marvellous and magical, and seldom indeed did the recipient of a short lecture leave the room without a smile through some happy phrase or amusing reference that always appeared ready for the occasion. "Who altered this word?" he asked one day on reading a proof; "the Printer, I suppose; send him down." On his presenting himself he was asked if he did alter it, and replied, "Yes, sir, I did; because I thought it wrong." "Never mind that," was the stern retort; "it is your duty to 'follow copy,' and mind you do follow it, even if it flies out of the window." As the window was five storeys high in Fleet Street, the man had to rush out of the room to laugh at the grotesqueness of the proposition. He was not hurt by the interview, but never forgot the rebuke. That was exactly what his superior desired—namely, to accomplish his object without hurting anyone; and he invariably succeeded.

It is generally admitted that when one faculty fails the remainder become the more acute. Mr. Johnson's trouble of late years was deafness; but this was a trouble to others rather than to himself, for it is not easy to imagine a more thoroughly genial, happier man than he was. Full of racy anecdote, apt in humorous quotation, and quick in retort, gloom could not exist in his company. His memory, before his health failed him, was extraordinary; his mind appeared as if a reflex of his library. "What are you searching for?" he would ask, when index after index was consulted, and on being told he would go straight to a volume among thousands, open it, turn deliberately to a page, draw his finger down the lines to the passage containing the information sought for, finding in a few moments what others might not discover in a day or week, and possibly not at all.

Mr. Johnson was, in the strictest sense, a just man, and exhibited his sense of acting on right principles in small, or what might be termed trivial matters, the true test of integrity. For instance, though he and Dr. Hogg worked together like brothers for years, the mutual trust between them being absolute, he would not use an office postage stamp for a private or personal letter, because only half of it was his own. It is these small episodes of life that best display real character, and judged by that severe test Mr. Johnson's stands out sharp and clear as that of a high-minded honourable man.

As a public speaker Mr. Johnson, though seldom heard, especially of late years, was singularly effective. He possessed in a marked degree qualities that if exercised must have made him an orator—a commanding presence, a firm, clear sonorous voice, a fertility of resource, a command of forcible and lofty language, a boundless store of pleasantries, and the power of imparting not only his ideas but his convictions and feelings to others, gaining their sympathy and absorbing their attention.

As a writer he was thoughtful and perspicuous, clothing his ideas in simple language and elegant sentences. Anything approaching to pomposity on the one hand and slang

phrases on the other he avoided himself and abhorred in others. His advice to young men was, "Employ just as many words as make your meaning clear and no more, and if you have a choice of long and unusual words, and of short and simple, always choose the latter." In his work of revision the articles of young gardeners striving to do their best had the same consideration as those of contributors of experience and higher station in life, and he would allow no one, however eminent, to say "smart things" with the object of causing pain to an opponent, though no one admired sprightly, harmless, legitimate retorts better than he did. Young writers he especially protected from keen criticism, and his practice has never been departed from; experienced controversialists he considered quite able to take care of themselves. As writers, all persons were on an equality in Mr. Johnson's estimation, their productions alone being regarded. He would sometimes remark, "When a man tries to look wise beyond his capacity he only reveals his want of knowledge; and when a man, however great, attempts to magnify his greatness, he succeeds in making himself look less than before, but he cannot see it." His epigrammatic observations, which were various, invariably embodied some home truth as in the sentence quoted.

An example of Mr. Johnson's thoughtful style and felicitous expression may be taken at random from his voluminous writings. "There is not," he has recorded, "in the whole of the arts and sciences, one link of their circle so suitable for the occupation of man in a state of innocency as that which embraces the cultivation of plants; and it is an instance of the beneficent providence of the Deity that He assigned a garden as the dwelling of our first created parents. It is no consequence of the fall of Adam that plants require cultivation; he was placed in Paradise to till and to keep it. Then the weed had not sprung up to render the tillage toilsome. Fruit trees which God had 'planted' were the chief objects of care; and it was an employment without labour; combining the preservation of health with amusement; pure without insipidity; constant without sameness. From that period gardens have never ceased to engage the attention of man; and even now that their labours are manifold, they still afford the 'purest of human pleasures.' Whether as a private individual man regulates his garden—or with more extended benefit cultivates his farm—still he participates in pleasure combined with utility, and whilst his time is agreeably occupied, he is benefiting mankind."

That citation from Mr. Johnson's writings not only shows his manner of expression, but is typical of his busy and active life—the acquirement of knowledge as a congenial occupation, in order that he could distribute it for the benefit of mankind.

The following narrative of his life and literary career was prepared and published in 1881; it is reproduced now, with a striking likeness of Mr. Johnson, and we feel assured will be acceptable to new readers and old friends alike at the present time.

For upwards of half a century the name of Mr. G. W. Johnson has been associated with the gardening literature of this country. So early as the year 1826 we find him communicating articles to "Loudon's Gardener's Magazine," and in 1829 he published his "History of Gardening," which is the most complete work on the subject up to the date of its appearance which has been written in the English language.

Mr. George William Johnson was the younger brother of the late Mr. Cuthbert William Johnson, the well-known writer on agricultural subjects. They were the sons of Mr. Wm. Johnson of Widmore House in Kent, where the eldest son was born. Mr. G. W. Johnson was born at Blackheath in Kent, 5th of November, 1802. He was descended from a Durham family long settled at Loup and Cainrow in that county. His grandfather came to London early in the last century, where he established himself as a goldsmith and banker, and having amassed a large fortune he was at the time of his death in 1790 possessed of Easby Abbey in Yorkshire, Welders, near Chalfont St. Giles, in Buckinghamshire, and the Vauxhall Distillery (now Messrs. Burnetts) in Surrey. Mr. G. W. Johnson's father inherited the Vauxhall Distillery and the Buckinghamshire property with a share of the

personal estate, while his uncle succeeded to Easby Abbey and a competency. Some changes in the excise laws by which the trade of the English distillers was injuriously affected induced Mr. Johnson to dispose of the distillery, and being a man of active mind and great ingenuity he embarked in various commercial speculations, of which the celebrated Colebrookdale China Works was one. After some years he retired from these, and eventually established the Salt Works at Heybridge in Essex. Here it was that his two sons, Cuthbert and George, found an occupation suitable to their natural inclinations, for early in life both brothers evinced a strong predilection for the study of practical chemistry and the cultivation of the soil. The Salt Works enabled them to carry out those experiments in the application of salt as a manure, which culminated in a work by Mr. Cuthbert Johnson entitled "The Uses of Salt in Agriculture." One of their most important discoveries was a method for the separation of the sulphate of magnesia or Epsom salt from sea water, by which the price of the article was very much reduced.

We have already stated that Mr. Johnson's connection with the gardening press began in 1826, but before this he had written articles for the *Essex Standard*, published at Chelmsford. His first communication to "Loudon's Magazine" was upon "The Employment of Salt as a Manure in Gardening." In the same journal he began in 1827 a series of papers entitled "Outlines of Horticultural Chemistry," which extended over two volumes. His first independent work was "A History of English Gardening, Chronological, Biographical, Literary, and Critical," published in 1829. It contains a vast amount of information, and exhibits great patience and research on the part of the author. In addition to the record of almost every work on gardening which has issued from the press in this country, together with their various editions, there is a short biographical sketch of the authors, rendering the book full of interest. Mr. Johnson used to tell an anecdote in connection with this work which afforded him great amusement. Some years ago he called at the shop of Pamplin, a second-hand bookseller in Frith Street, Soho, and inquired for a particular edition of a certain work, which the bookseller told him never existed. "It is mentioned in Johnson's 'History of Gardening,'" said Mr. Johnson mildly. "Ah," said Pamplin, "that is not a book of much authority." "I am aware," said Mr. Johnson, "that it has many faults, for I am the author of it!"

While still continuing his connection with the Salt Works Mr. Johnson devoted all his spare time to the pursuit of literature and the cultivation of science. At great Totham where he resided he conducted experiments in gardening, and especially in the application of substances as manure. But the versatility of his mind led him to other pursuits, and he, after great research, wrote a "History of Great Totham," which was printed by Mr. Charles Clarke, at his private press in the village, in 1831. This work is now extremely scarce, and is eagerly sought after by collectors at prices the mention of which provoked a smile on the author's countenance. During his researches at the reading room at the British Museum while the "History of Great Totham" was in progress Mr. Johnson discovered that one Edward Goodshaft had left an estate for the benefit of the poor of the parishes of Great Totham and Little Braxted in Essex. This benefaction had for many years been diverted, and the parishes which were interested in it were ignorant of its existence. It was through Mr. Johnson discovering an extract from the will of Goodshaft that the property was restored. In 1835 he published a memoir of John Selden, which was dedicated to the late Earl of Derby when he was Lord Stanley. In 1839 the two brothers edited an edition of Paley's works with very copious notes, the "Natural Theology" being undertaken by Mr. C. W. Johnson, and the "Evidences of Christianity" by Mr. G. W. Johnson. The latter having for some time been reading for the bar, was called by the Society of Gray's Inn in 1839, and then he proceeded to India when Lord Auckland became Governor-General. He was appointed Professor of Moral and Political Economy in the Hindoo College at Calcutta, and besides being co editor of the *Englishman* newspaper, he edited the *Government Gazette* for Lord Auckland. His residence in Calcutta did not extend beyond three years, and he returned to England in 1842, when he wrote "The Stranger in India," in two vols., which was published by Colburn in 1843.

Before starting for India Mr. Johnson had been consulted by the churchwardens of Braintree in Essex on the question of a rate for the repair of the church which had fallen into disrepair. This became a question of great public importance, and it was on Mr. Johnson's advice that the churchwardens imposed the rate. The church was in a very dilapidated state, so much so as to be thoroughly unsafe. The churchwarden, a Mr. Velly, sum-

moned a meeting of ratepayers of the parish to consider the state of the church, and to propose a special rate for its repair. The parish of Braintree consisted almost entirely of silkweavers who had settled there years before. The majority of these were

what he thought could be done when the case was so urgent. "What shall you do?" said Mr. Johnson, "why, sir, if the case is as urgent as you say it is you ought first to consult an architect, obtain his opinion as to the state of the church, then call a

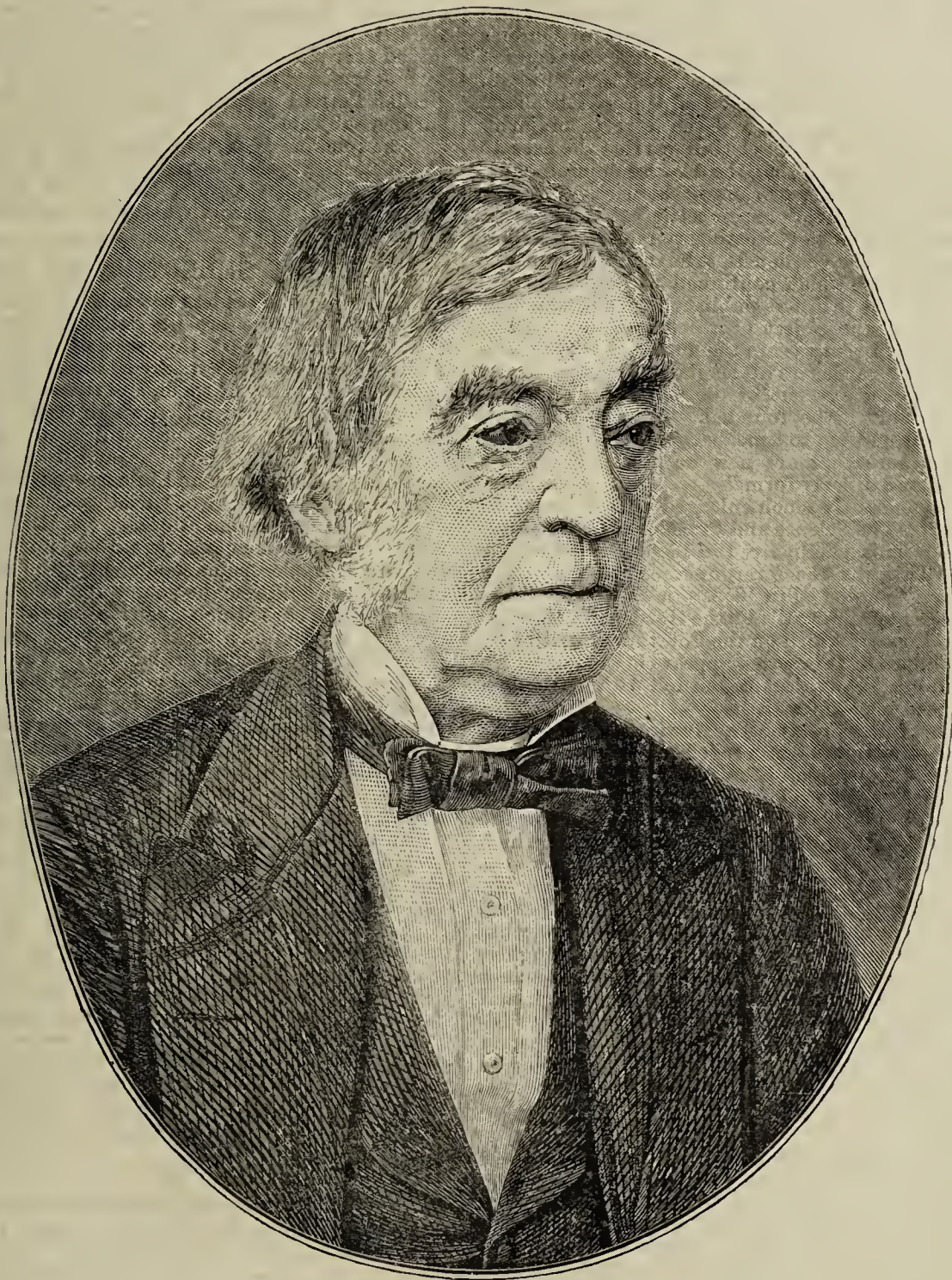


Fig. 58.—THE LATE MR. GEORGE WILLIAM JOHNSON.

dissenters, consequently much averse to helping in anything to do with the church; the question, therefore, when put at the meeting was only agreed to by a very small minority of the ratepayers, the majority refusing to pay a farthing in such a cause. Mr. Velly in despair went to Mr. Johnson to ask him

meeting of ratepayers and inform them of his opinion. If the dissenting majority still ho'd out request the signatures of the church minority consenting to a rate for repairs, and on that minority proceed accordingly."

Mr. Velly acted on Mr. Johnson's advice. He consulted two

architects, who both pronounced the church unsafe and in need of repair; then he called a meeting of ratepayers as arranged, and on the majority refusing as usual to consent to a rate, he obtained the signatures of those who did agree, and with their co-operation the church was restored.

The dissenters indignant at the course taken by the churchwarden, carried the question to a court of law, and the case was heard at Westminster in January, 1846, where it was argued by Sir Fitzroy Kelly, Q.C., Mr. T. Barnes, Q.C., and Mr. T. Arnold for the plaintiffs in prohibition; and by Sir F. Thessiger, Mr. G. W. Johnson, and Mr. W. Ogle for the defendants. Lord Denman and the three other Judges of the Court of Queen's Bench and the Court of Exchequer decided that the opinion given by Mr. Johnson was perfectly correct, and according to precedents dating as far back as the reign of Queen Elizabeth. This decision was appealed against, and the adverse majority being led by Mr. Courtauld of Gosfield Hall, carried the case to the House of Lords, who decided that the adverse opinion must prevail if sustained by a majority of the parishioners.

On his return from India Mr. Johnson settled at Winchester, and again turned his attention to gardening pursuits. His first success was the issue of "The Gardeners' Almanack," published by the Stationers' Company, which continued without interruption from 1844 to 1866. In 1845 was published "The Principles of Practical Gardening," the object of which is thus stated in the preface—"For nearly twenty years the author of these pages has laboured to make the gardeners of England more generally aware than they are, even at present, of the principles on which their practices are or ought to be founded. The results of his early researches have from time to time been made public, and those together with more that are new he now offers to his readers in a collected and orderly form."

This work was subsequently much enlarged and re-issued in 1862 under the title of "The Science and Practice of Gardening." "A Dictionary of Gardening" appeared in 1846 and met with a welcome reception. This was the forerunner of "The Cottage Gardener's Dictionary," published in 1852. In 1847 Mr. Johnson commenced a series of works called "the Gardener's Monthly Volume," the first volume of which on the Potato was written by himself. Twelve volumes of this series appeared, each of which is devoted to some important subject connected with gardening, and written by the best authorities.

On the death of his father-in-law, Mr. Newington Hughes, a banker at Maidstone, Mr. Johnson succeeded to his property, and thus the Fairfax MSS. came into his possession. These consisted of the whole of the correspondence of Ferdinando Lord Fairfax and his son Thomas, the great parliamentarian general during the period of the civil wars. They were discovered in a chest which was sold as old lumber at a sale at Leeds Castle in Kent, the seat of the Fairfax family, on its coming into possession of the late Mr. Wykeham-Martin. The purchaser was a shoemaker of Maidstone, who cut up the letters as he required them to take measurements in his trade. On one occasion when he called on Mr. Hughes, and in his business capacity made use of a portion of an ancient manuscript, the keen eye of the antiquary was arrested, and after an examination of the precious documents Mr. Hughes became the purchaser of them. When they came into Mr. Johnson's possession he offered them to Mr. Richard Bentley with a view to publication, and they were eventually published in four large octavo volumes, the first two of which were edited by Mr. Johnson in 1848.

We come now to a period of Mr. Johnson's career when his name became more familiarly and intimately connected with horticulture. He entertained an opinion that the time had arrived when the gardening taste of the country had so greatly developed among the middle classes that a journal issued weekly, giving advice as to the operations to be attended to in small gardens, would meet with a ready circulation. Mr. Johnson consulted Mr. Orr, at that time an extensive publisher in Paternoster Row, on the subject, and the result of the consultation was the publication on the 5th of October, 1848, of the first number of *The Cottage Gardener*. It was a modest production of twelve pages, but it was stored with wisdom and knowledge communicated by some of the best practical men of the day. The venture was justified by the result, for *The Cottage Gardener* was a wonderful success from the first.

In the year 1851 a friendship sprang up between Mr. Johnson and the present Editor, Dr. Hogg, which through all these years has been a source of unalloyed pleasure and happiness to both. Inspired by the same feelings and actuated by the same motives these two gentlemen, during a period of thirty years, worked in perfect harmony, devoting themselves to the service of the public, and doing whatever seemed to them to contribute to the welfare and enjoyment of a large mass of the population of these

kingdoms and their dependencies. *The Cottage Gardener* continued to prosper and increase in influence and in power. As its field of readers increased its sphere of usefulness widened also, and the work of its Editors was to meet the requirements of those who came to them for instruction. By degrees these requirements rose to a higher standard than was contemplated when *The Cottage Gardener* was first published, and the universal opinion of the public was expressed by a writer in *The Quarterly Review*, when he said that *The Cottage Gardener* was for the occupiers of a cottage to which a double coach-house was attached. Acting on this hint the Editors decided on changing the title to *The Journal of Horticulture*, a designation which it retained ever since. In addition to the works already mentioned Mr. Johnson wrote "The Chemistry of the World," "The British Ferns Popularly Described," besides many pamphlets on various subjects.

The remains of Mr. Johnson will be consigned to the tomb at 3 o'clock this afternoon (Thursday) in the burial ground of St. Peter's Church, Croydon, the day of the interment being the day before the 84th anniversary of his birth.

A SELECTION OF PEARS.

MANY of your readers will now be thinking of planting fruit trees, and as there are no better winter fruits than a good selection of rich Pears, this section is sure to be largely dealt with; but although Pears are so acceptable, there is a possibility of having too many of them, and there is no greater loss amongst fruit in the garden than that which occurs every winter amongst Pears. Happily there are still many gardens not yet embarked in the market business, and where Pears are only grown for home consumption, and in cases of this kind it is a mistake to have a great number of varieties coming in at the same time, or too many of one variety, as Pears differ widely from Apples in their keeping, or, rather, non-keeping qualities. In the case of Apples, some which might be ripe and ready for use in October would remain sound for two months or more afterwards, but Pears which are ripe one week will hardly keep to the next, or the one after that at most, and it is astonishing how many Pears are spoiled in this way. The only remedy for it is to plant in succession, and not put in more of one variety than is likely to meet the demand for the fruit, and the aim should always be to have a constant supply rather than great many varieties in at one time, and none at another. Judging from experience Pears are not so partial as Apples. We all know of some Apples that succeed well in certain districts and failing in others, but Pears are not like this, and, as a rule, good free-fruited varieties will succeed everywhere. We hear, too, of good keeping Apples, and know of many of them, but good keeping Pears are few if they exist, and there is an opening for new varieties in this direction.

The following is a good selection of Pears for a general supply from July until March—Doyenné d'Été, small, excellent, a good bearer, end of July; Jargorelle, large, melting, juicy, delicious, August; Williams' Bon Chrétien, large, buttery, rich, September; Beurré Superfin, large, melting, fine, October; Beurré Diel, large, rich, melting, November; Doyenné du Comice, large, delicious, December; Winter Nelis, small, melting, rich, January; Easter Beurré, large, buttery, highly flavoured, February; Bergamot Esperen, medium size, juicy, and sugary, March; Josephine de Malines, large, melting, delicious, April.—J. MUIR, *Margam*.

THE NON-VENTILATING SYSTEM.

MR. BARDNEY, page 370, has trailed a coat of many tails, any and all of which he seems to invite us to tread on. Not being so well versed in horticultural engineering as he presumably is, I shall not attempt to combat all his arguments, but shall content myself with meeting that part of his arguments relating to the non-ventilating system. He seems to imagine that the Prescott growers have a monopoly of this method of growing Cucumbers, and it was because I did not strictly follow the instructions given in these pages by Mr. Bardney that I failed. As it happens it is by no means a "new thing" that he advocated. At the outset he mentions a fact that I should think very well known—viz., that quickly grown seedless Cucumbers are the best for eating; but does he wish to infer that the Prescott Cucumbers, or those generally grown without air, are superior to those cultivated under the ordinary system—i.e., with a little air given during the hottest part of the day? Speaking from experience, I say they are not. They are grown rather more quickly, and that is all that can be said about it.

Perhaps I am premature in my condemnation of the system as far as private gardens are concerned, and the way to prove that such is the case is simply to bring forward the names of any private gardeners that have succeeded to their own satisfaction on the lines laid down by Mr. Bardney, the months of July and August to be included in the cropping period, and

the style of house also to be given. If permitted, I could give one noteworthy instance of complete failure, though for obvious reasons I cannot without permission publish the names of those trying the experiment. I might add, however, that they broke down even before we did. Mr. Bardney infers that the plants must have suffered by want of water at the roots and also that the shading was too heavy, but in both cases I can truthfully state he is altogether wrong. In reality there was too much water given. Our soil being naturally of a heavy nature, much judgment has to be exercised in the watering, or it soon becomes saturated and uncongenial to the roots; but even if the best of turfy loam was available, I still have my doubts about the success of the system of non-ventilating for Cucumber growing in private gardens. Mr. Bardney repeatedly alludes to the heavy shading we are supposed to use, but I think those who have used the ordinary cheap scrim canvas, as supplied by all drapers and much used by paperhangers, will agree with me that it is by no means a heavy shading, yet that is all we use during the hottest part of the day. Crotons we have not grown so extensively this season as heretofore; but those we have, including Warreni, Williamsi, picturatus, Prince of Wales, princeps, Queen Victoria, nobilis, and magnificus, are, as far as colour is concerned, perfectly satisfactory.

With all due deference I maintain that it was not our method of procedure that was at fault, but we failed owing to our house being unsuitable for the experiment. When it is understood that the Prescott houses are totally different in design and construction to anything we see in private places, it will be seen I am not so far out in my judgment. According to my information the principal house at Prescott is a series of connected houses on the ridge-and-furrow system, only they have no dividing or supporting walls, these being superseded by iron supports. It will be thus apparent that in such a building the risk of burning from excessive heat or a too rarified atmosphere is reduced to a minimum. Contrast this with the hot little houses usually devoted to Cucumber culture in private gardens, and the conclusion must be that the different construction of the latter necessarily entails a different method of procedure. During a hot sunny day the walls, flooring, and staging, all are liable to become hot and dry, and these naturally absorb the moisture from the house. The consequence is, it soon becomes drier than the external air; therefore, unless the latter is admitted in small quantities, or abundance of water is almost constantly being distributed about the house and over the foliage, thereby staying the "enormous evaporation" going on, burning of the foliage must ensue. A little air and shading is safe, no air and thin shading is not.

Mr. Bardney rashly asserts that the "chink of air" is a thing of the past, but that has yet to be proved. I shall not attempt to quote what Messrs. Thomson, Barron, Taylor, and other noteworthy Grape growers have recommended with regard to the proper ventilation of vineries, preferring rather to express my own views. I am not at all surprised to hear that Mr. Bardney gave no air to his early vinery until the Grapes commenced ripening, but if he had given no air before they were ripe we might have expressed some wonderment. If he had ripened them satisfactorily without air there might be facts to explain away, but if I understand the paragraph rightly, he too admits the chink of air, this being essential to flavour and colour; if not, what does he mean? Saving the coal is of moment to all of us, and if anyone can suggest any plan for reducing the outlay in that direction he will have done good service, but I fail to see that Mr. Bardney saves much fuel with his method of forcing unless he is satisfied with low night temperatures as a set-off for the other extreme in the daytime. Very little air is admitted in early vineries generally, at all events till the sun heat has raised the temperature considerably, and the mere fact that no air at all is given will not save the coal bill much, unless it has the effect of materially hastening the crops. Then if we are not careful there is the danger of forcing the Vines "off their logs," or to be plain, the top growth may be much too far in advance of the root-action. With Mr. Bardney's snug little early vinery and comparatively new inside border there may be no risks run, but what about those outside, and which far outnumber inside borders? Then, again, much depends upon the weight of Grapes each Vine is allowed to perfect. A light crop will colour and be of fairly good quality without the assistance of the proverbial chink of night air, but try the same plan with a heavy crop, such as we in the West of England are in the habit of taking off the Vines, and the colour of the black sorts, especially, would be very far from perfect, that I say we Grape growers in this neighbourhood have nothing to learn from the Liverpoolians generally, and it is very certain we shall not attempt to finish our Grapes early or late without a chink of air at the right time.

The Peach trees at Norris Green are certainly in a highly creditable state, but I had no idea their good health and vigour was mainly or partially due to the adoption of the non-ventilating system. I thought it was principally due to the practice pursued of annually lifting all of them, plentiful supplies of water, and moderately heavy cropping. I repeat the trees are noteworthy examples of good all-round treatment, but at Knowsley the trees are the best I have ever seen, and Mr. Harrison attributed much of his success to periodical liftings. After all that has been said it would appear that Mr. Bardney is not so nearly converted to the non-ventilating system as I am, or why does he give air during the summer and early autumn months to the plant houses under his charge? If the plan is such an economic one why adopt any other? I am quite prepared to join issue with him on the subject of plunging plants.—W. IGGULDEN.

In support of Mr. Bardney's remarks on the above (see page 370) I may relate a striking instance that has recently come under my notice.

Five weeks ago I called at Cuerden Hall Gardens, where Cucumbers and Melons are grown in the same houses, and while the latter are ripening the former invariably become more or less infested with red spider, and this was their condition when I saw them; but as soon as the Melons were all out the house was closed, the interior of which, as well as the plants, being frequently syringed when rapid growth sets in, and the plants soon recover. For having occasion to call this week I found those I am speaking of quite free from spider, and the trellis covered with healthy foliage and studded with scores of young fruit nicely set, and this on plants that were planted last February, and having been bearing heavy crops of fruit throughout the summer.

In another house one plant remains of a batch planted out last November. Mr. Roberts informs me that it is seventeen years since when growing for market he first practised the non-ventilating system of growing Cucumbers, but he always applied a thin shading or whitening to the glass with the syringe during the hottest of weather, which was partly washed off by the first heavy rain, and another application given if necessary.—CONSTANT READER.

NEW VIOLAS.

In the *Journal of Horticulture* of September 16th, in your report of the Exhibition of the Glasgow and West of Scotland Horticultural Society, Mr. Baxter of Daldowie was reported to have received a first-class certificate for his seedling Viola York and Lancaster, and that he was also "placed easily first for twelve bunches of Violas, and that his stand was most tastefully arranged." As I have long made the Viola a pet plant, and grow an immense number, I felt a desire to write to Mr. Baxter asking him to let me see a bloom of York and Lancaster, and I received blooms of this variety and several others which are quite new and valuable acquisitions, and of which I send notes. Further correspondence has brought hints on culture, &c., which I also append, and it would be truly a boon to our spring and summer bedding folks if this could read, How the Viola should be managed, and see what glorious results arise from their being properly planted and treated. At the Flower Show in the Abbey Park, Leicester, last July, thousands who never saw before what can be done with the Viola must have been struck with the extensive and rich display of Violas there, especially in four large circular beds of mixed Countess of Kintore Viola and silver-leaf Geranium, their soft colours harmonising so delightfully, and calling forth universal admiration.

We are comparatively behind the times in the application of Violas for bedding purposes, especially for mixing with Tulips, Hyacinths, and other bulbs, and prolonging this spring display; and they are equally valuable for mixing for a summer display, the shades of blue and violet working in so well with yellow Calceolarias and other colours, white Violas with crimson and other colours, and so on. If Violas wanted no other recommendation, their early blooming charms alone should be a sufficient reason for their general adoption, but the starving process has been ruinous to their adoption. Mr. Baxter, in a letter just received, says, "The public parks seem to starve Violas and call it disease," and it is so. I looked in at Chiswick some three summers since hoping to see a fine collection of Violas there, and of course grown tolerably well, but I was grieved to find them "starved," and out of all character, although varieties were being grown there then which I would not tolerate.

Mr. Jenkins, in the *Journal* of October 21st, forcibly insists on liberal cultivation and the use of cow manure, and his experience is fully corroborated by Mr. Baxter, as will be seen further on. In a conversation with Mr. Gough of Hamfield Green Gardens not long since, I was looking with astonishment on two very long rows of True Blue Viola, our best blue, in capital condition. When his crops were suffering greatly from excessive heat and want of rain, he told me that a spit of soil was taken out along the rows and rich rotten manure worked in, and the top soil put back again. Here was the secret of their success, and he had always adopted that plan with Violas. There may be some who may fancy that Mr. Jenkins and myself suffer from Viola on the brain from our persistent advocacy of this lovely bedding plant, but when we meet with so much lamentable ignorance as to culture, and persistent ignoring of the Viola as a valuable bedding plant, it is time to speak out pretty plainly and do the plant justice. No one knows better than I do how it has failed in the south under great summer heat and drought, but Mr. Jenkins, at Messrs. Collins Brothers & Gabriel's nursery at New Hampton, last summer clearly demonstrated that the Viola is a grand plant in one of the worst positions possible for it, when thought and generous cultivation are brought to bear upon it. I saw their display in August in the midst of broiling weather, and I shall remember it for life. Next year I think Mr. Jenkins will show the southerners what he can do.

Mr. Baxter has made Violas a speciality for thirty years, so,

as he observes, he is "a little familiar with the subject," and has taken first prizes for years in Edinburgh and Glasgow, and in a recent letter he writes: "I will send you before long a few words on raising Violas. We have had a bed of fancy Violas—not bedders—which have been a great attraction here and invaluable for cut flowers. The spotted sorts come cleaner when not in too rich a soil." He further observes: "As the Journal is duly appreciated in the West of Scotland, and as I am often asked to state which, in my opinion, are the best twelve varieties of Violas for competition in bunches, it may save me some trouble and be useful to many others if the Editor will kindly allow me through its pages to give the following:—*Archie Grant*, *Bullion*, *Countess of Kintore*, *Countess of Hopetoun*, *Dawn of Day*, *Duchess of Sutherland*, *Ethel Baxter*, *Ebor*, *Merchiston Castle*, *Mrs. Baxter*, *Skylark*, and *York and Lancaster*. This selection will stand them in good stead when the day of trial comes, but I would remind my juvenile friends that there is a little thought and taste required to set up a stand properly, and beg them to keep steadily in mind in staging Viola blooms to 'Wear his beaver up,' like Hamlet's father's ghost. There may be better sorts in cultivation than some of those I have named, but the list I have given will be an excellent one to start with. Now for a few words with regard to my method of preparing beds for Violas during the winter. We gather cow droppings in the fields, even when they are as hard as a frozen turnip, and store them in a corner until wanted, and, being thoroughly frozen, insects in the manure and their belongings are destroyed. If the bed is on the lawn, we lay down a cloth and just as much soil on it as will cover the bed 3 inches deep. On the bed we place a good barrowful of this dry cow manure (say the bed 4 feet by 4 feet) and add a large shovelful of hot slacked lime and mix it thoroughly to the depth of 18 inches, using a fork for that purpose, and if the bed is likely to be a bit too high with the manure added, trample it down a little and then put on the 3 inches in depth of soil previously taken out. The manure being buried underneath the surface prevents the birds from making holes in the beds, and it is judicious to prepare the bed fully a month before planting. The beds can be planted at the same time if preferred, hot lime notwithstanding. We use an old Potato dibble, which makes a hole the required depth and about 4 inches in diameter, and fill round the plants with clean fresh soil, and by the time the roots grow out of this there is no danger from the lime. We leave a small basin round each plant and fill in with a handful of sand, which fills up crevices and prevents resting holes for slugs and snails. I find the sand to be very beneficial, and in planting we keep the plants down to the first green leaves. As Violas are much larger in the flowers than they were some years ago, they require manure accordingly. The writer on Violas (Mr. E. Jenkins) in a recent Journal, does not put half enough manure in the ground. As to sorts, *Bullion* is by far the best yellow extant for bedding. *Ardwell Gem* looks too much to the ground. If Violas could be seen in some of our great public parks grown freely as I have recommended, there would be much less talk about disease in the Viola. The present treatment tends to starve the poor things off the face of the earth. In any places where the Viola shows a tendency to die off during the summer, I strongly recommend, say, a tablespoonful of hot lime into a canful of water and pour it in at the neck of the plant as soon as any tendency to 'go off' is shown."

These words are from a thorough cultivator of the Viola, and he is right as to "*Bullion*," a grand yellow of excellent habit and constitution. I must confess that yellows do bother us in going off. All the lutea section stand well. *Golden Prince Improved* is another A1 yellow, and *Ardwell Gem* (known in some places as *Hardwick Yellow*) is a very valuable primrose yellow. I have been working away at the "*Queen of Spring*" section because I wanted yellows without any markings at all, and I obtained some lovely things, notably *Yellow Dwarf* and *Yellow Beauty*, but their constitution was too fragile and they are lost. We must have good constitutions in our Violas. A description of Mr. Baxter's new sorts from two lots of blooms he sent me must close this paper.

Countess of Glasgow.—Rich violet bottom petals and silvery lilac top petals, fine form and substance. Mr. Baxter describes this as better than *Countess of Kintore* in summer, and it obtained the first prize in Glasgow in 1886 for the best seedling Viola. It is certainly a very beautiful variety, and distinct from the *Countess of Kintore*.

Clipper.—A very telling variety, light top petals, lower petals violet with lighter-shaded margin; fine.

Crimson Gem.—A crimson tinted purple, medium-sized and of good form, but not distinct enough in colour to be regarded as an acquisition.

Dawn of Days.—A lilac shaded lavender; a large and very

effective variety, distinct and evidently a telling bedder; a decided acquisition.

Ethel Baxter.—Shaded light rosy purple, good form and the best of this colour; a fine desirable variety.

Ebor.—Excellent form, but running very close to *Crimson Gem* in colour. Mr. Baxter describes this as a fine bedder.

Goldfinch.—A decided novelty, pale yellow with a medium margin of deep lilac; quite distinct.

Mina Baxter.—Crimson shaded light purple, with lighter top petals; a charming variety.

Mrs. Baxter.—Rich rosy purple, of fine form and substance, with a white blotch in the top petals; a very fine variety and the best of this type.

Merchiston Castle.—Truly a gem, rich crimson maroon with a wire margin of cream running around the flower, very distinct and beautiful, resembling a miniature fancy Pansy.

Rosebud.—Somewhat resembling *Ethel Baxter*.

Ravenswood.—A small well formed flower of good substance, rich violet with a bluish grey small blotch at the bottom of the lower petal, and blue tinted top petals; very pretty.

Spotted Gem.—Crimson tinted violet, rich in colour, with a white spot at the top of each top petal; distinct and fine.

Skylark Improved.—Creamy white with a good border of dark cerulean blue. It beats "*Skylark*" in the breadth and density of the blue margin.

York and Lancaster.—White, distinctly striped; and clouded with rich maroon and rosy purple, a vigorous grower, a great beat upon "*Clown*," a striped variety, a very fine competition flower, and in every respect A1. Has been awarded three first-class certificates in 1886.

These notes were not taken when these Violas were at their best; far from it, for the blooms came by post after the recent storms Scotland has known so well. The greater portion of these varieties are scarcely in commerce yet.—WILLIAM DEAN, Walsall.

MUSHROOM GROWING MADE EASY.

THIS was the title of a paper read at the bi-monthly meeting of the Birmingham and Midland Counties Gardeners' Mutual Improvement Association, October 20th, by Mr. J. Croke, a well-known gardener in the neighbourhood and the librarian of the Society, who, in the course of his interesting paper, remarked that "In the culture of the Mushroom some are successful and some are not, at times failing to produce them even in Mushroom houses erected purposely for their culture, whilst many gardeners and amateurs, with very restricted accommodation at hand, obtain good supplies all the year round. I have grown Mushrooms for several years, adopting several plans, but with the simple plan I work upon now I rarely have a failure. The only accommodation I now have for cultivating Mushrooms is underneath a stage in a cool greenhouse without the aid of heat from hot water pipes. This house is 20 feet long by 14 feet wide, span-roofed, with a path through the centre. Underneath one side of the stage are six divisions for six beds, each 3 feet long by 4½ feet wide, and with a depth of 18 inches, a single brick wall dividing the beds. Wooden shutters are used in front, and moveable board divisions from the stage above the beds, so that manure can be easily got in and out. Three large zinc pans, each 6½ feet long by 4½ feet wide, with a hole at one corner for the water to pass away when watering plants, prevents any dripping of water on to the Mushroom beds. Manure is gathered every morning from our stables, and the droppings and short straw placed under an open shed, care being taken to prevent its heating itself into a too dry state, and when sufficient is obtained for a bed it is turned over every day for a week, and when it has lost all its deleterious fermentation and the heat is on the decline, it is put into any of the beds which require making up, and two or three days after the spawn is put in and 2 inches of good soil put on the top, and in six weeks we are cutting a good supply from these newly made beds. With regard to beating the soil hard, as some recommend, I give it only a moderate firmness, as I well remember failures from excessive treading and failure of the spawn to germinate. I spawn when the beds register a heat of about 80°, for it is a great mistake to spawn a bed with the heat over 100°, and from this cause failures frequently arise. I have found so constantly that my Mushrooms are firmer in the flesh, tenderer, and more juicy, grown under such conditions as I have indicated than when grown with fire heat. With the plan I adopt, and making a new bed directly one gives out, I keep up a good supply for a small family, and the heat from the manure of the new bed penetrates the wall on either side and gives renewed vigour to the other beds. I seldom water, but if I do I use water from 80° to 90° in temperature with a good-sized piece of salt dissolved in it. Just a word or two with regard to the enemies we have to deal with in Mushroom culture. I have used as a simple remedy for catching woodlice a rotten piece of wood placed close to the side of the bed, giving just sufficient space for the woodlice to harbour, taking it out each morning and clearing off the woodlice. I made up on August 22nd two beds, each 3 feet long and 4½ feet wide, and I began cutting the last week in September, and these beds have already produced over 50 lbs. of fine Mushrooms. My chief object to-night is to show what can be done on so small a scale, and I recommend the culture of the Mushroom to all

present, as a more appreciated vegetable cannot well be sent into the house for an employer's use. I just wish to say before I sit down that I have recently obtained much valuable information from a practical treatise on the culture of the Mushroom, written by Mr. Wright. It can be obtained at a cost of 1s., and this indispensable guide, under the name of 'Mushrooms for the Million,' will be a friend to all."

Fully one hundred members of the Society attended, and a good useful discussion followed. One of the members, Mr. Bick, spoke on outdoor culture, having worked on Mr. Barter's plan, as recommended in "Mushrooms for the Million," and that a bed he made up in February last, 5 yards long, and made as per illustration at page 25 of Mr. Wright's book, and he began cutting at the end of April, and had secured a very large quantity of excellent Mushrooms. A discussion arose as to the heat applied, which he explained was only that in the manure itself for the germination of the spawn, but he was so thoroughly satisfied with the experiment, that he proposed giving the outdoor culture more extended application. Mr. Bick said he felt bound to speak in the highest tones of Mr. Wright's book, which would make Mushroom growing not only easy but general throughout the kingdom. Messrs. Cooper, Jinks, Wood, Spinks, Jones, Wheeler, and Harris also took part in the discussion.

We may just add that the Birmingham Society is making wonderful progress, numbering already 250 members, with a special library fund of £74, and the Society only ten months old, but Mr. Hughes is an indefatigable Secretary, and to his efforts the greater portion of the library fund is due.—W. D. W.

INDIAN EXPERIENCES.

Now the cultivation of Tea, Coffee, Chinchona, and other agricultural products is making such rapid strides both in India and Ceylon, and when so many young gardeners are annually leaving England for those distant lands, it may not perhaps be uninteresting to some readers of the *Journal of Horticulture* to have a description of personal experience of a planter's life in southern India, extending over an uninterrupted period of some seventeen years.

At the outset I may be permitted to give it as my opinion that while to the young gardener in England the area of success in his profession is admittedly becoming yearly more circumscribed, and even greatly underpaid, employment is becoming more and more difficult to obtain. The planting and horticultural field of enterprise in India and Ceylon is to the well educated and trained young gardener a very hopeful one. At the same time, I would impress upon him before taking the final step, that ultimate success in any country, but more especially a country like India, will depend greatly upon his own strength of character, self-control, veracity, integrity, and patient perseverance. Temptations to upset and trample underfoot all these virtues abound in India, but of these temptations I shall have more to say afterwards. I would only in this place beg to reiterate my warning to young gardeners about to emigrate to India, that without the firm resolve to adhere firmly to the above principles of conduct, failure will, in nine cases out of every ten, be the inevitable result.

I have already stated that I have had some seventeen years' planting experience in south India. This was between the years 1861 and 1877. Eleven years of this period I spent in Coffee planting in the Wynaad district of Malabar, five years in Chinchona planting on the Neilgherry Hills, and one year in the Indian Forest Department in Tinnevely, the most southern, and perhaps the hottest of all the Indian provinces. In 1861, being then just twenty-three years of age, I was employed as propagator by a well known firm of nurserymen at Edinburgh on a weekly wage of 18s., with both on the grounds; the latter a hovel consisting of one room 10 feet square, free of access to all employed in the nursery, and containing two beds for the accommodation of four persons. The room contained not a vestige of an article of furniture conducive to comfort, with the exception of a rough deal table, one wooden-bottomed chair, and a wooden form. The above salary and accommodation was in those days deemed sufficient for young men who were expected to attend closely to their duties from ten to twelve hours daily, to possess a knowledge of the history, mode of propagation, and culture of all plants coming under their notice, also to converse intelligently with customers. In a room such as I have attempted to describe it is needless to say that no opportunity existed for reading or study for the advancement in our profession. The wages were too small to allow for my own support and that of a widowed parent. These things combined made life very irksome to me, and being, like most young gardeners, anxious to improve myself in my profession and otherwise, and being denied the means of obtaining the necessary books, &c., for doing so, I not unnaturally turned my attention to emigration, and ever long was fortunate enough to observe an advertisement in the columns of the *Scotsman* newspaper for a young gardener to proceed to India as an assistant on a Coffee estate on a salary of Rs100 or £120 for the first year; Rs120, or £144, for the second year; Rs140, or £168, for the third year; and £240 per annum for the two following years. Engagement for the five years, with an optional break at the end of the third year. I applied for the appointment, and with the assistance of my employers and other friends obtained it at once, signed the agreement, and was off on my voyage to India within four weeks from the date of my application.

It was on a beautiful Sunday afternoon in the latter end of October, 1861, that I set sail from Southampton in the good ship Mooltan of the Peninsular and Oriental Steamship Company for Alexandria. The overland journey to India has been so frequently and so graphically described

by the ablest writers that it would be utterly useless for me to attempt to tread the same path. I shall therefore confine my few remarks to some incidents of the journey which produced in some cases a very pleasing, and in all a lasting impression on my mind.

The terrors of the Bay of Biscay past, it was passing pleasant to land for a few hours at Gibraltar. A few days' sail had brought us from every indication of an approaching dreary English winter into summer again with all its accompanying flowers and fruits, festoons and masses of flowers hanging from bower and wall in the open air, the produce of plants that it had been my duty to tend with assiduous care under glass in England. Then the voyage to Malta and Alexandria was a thing never to be forgotten, the intense blue of the inland sea baffling the pen of poet to describe. While deeply enjoying the trip down the Mediterranean the fact was lost sight of that the good ship Mooltan was fast approaching Alexandria, with its cloud of windmills, its fervid heat, its steamy and squalid bazaars reeking with fifth and drowned in swarms of flies. With the advent of the native pilot on board to guide us into the famous bay came the first feeling of oppressive heat, and if it must be confessed the incipient regret that I had left dear old England, and the very pronounced resolve to take advantage of the clause in my agreement with reference to the optional break at the end of the third year, and return to my native land. The resolve was deepened by a remark of a fellow passenger to the effect that if I felt the heat so much at Alexandria he did not know how I would get on in India. One night in the ancient city and off next morning by rail to Cairo, where we were compelled to remain four days awaiting the arrival of the mail steamer at Suez, which was to take us on to Bombay. On the way to Cairo I had an opportunity of seeing the destruction caused to the wretched huts composing the native villagers by a higher than usual rising of the Nile. The water had recently subsided, leaving nothing but pools here and there in a sea of mud, and revealing the fact that in most of the villages one-half of the huts had completely collapsed, and in some instances the whole of the huts of a village had crumbled into the original mud from whence they sprang. This state of things made it very difficult for travellers either on foot, donkey, or muleback to get along, and large crowds in consequence took advantage of the high railway embankment, frequently bringing our train to a standstill. These crowds consisted of natives of all degrees and conditions, many well-to-do merchants evidently, and all wending their way to the capital.

Our four days' sojourn at Cairo was spent very pleasantly in visiting the lions of the city on donkey back. Shepherd's Hotel afforded good accommodation, and although the days were hot and dusty in that rainless region, yet the evenings were extremely pleasant, and as it happened to be full moon at the time the brilliantly lit-up sky and clear soft atmosphere and still air were wonderfully attractive to anyone fresh from England. It was at this hotel I had the pleasure of seeing for the first time the celebrated General Outram. He had come out to Egypt for his health, being unable to stand an English autumn and winter. During the evenings he sat in the verandah of the hotel conversing in a very low tone of voice with his friends. His forty years' service in India had evidently told severely on his health, as he appeared to be a complete wreck as he sat leaning with both hands on his stick and with his chin resting on his breast, and unless I had been told of his identity I would little have suspected that the "Bayard of India" sat before me. As an instance of the truth of the saying, "No man is a hero to his valet," I on frequent occasions overheard the man in attendance on the General complain in no very complimentary terms of his master's irritability and other supposed failings. He little understood what a forty years' residence in a hot climate like India meant, with all the anxiety, responsibilities, and dangers connected with a life like that of General Outram's.

On the morning of the fifth day we started for Suez by train, reaching that place some time in the afternoon, after only one brief stoppage on the way. The journey across the desert was a hot one, but not devoid of beauty, although not a vestige of vegetation was to be seen; yet the white and yellow sand hills and undulating ground were very impressive, and stretching out on either side as far as the eye could reach. Arriving at Suez we dined at the Oriental Hotel off food not of the very choicest description, and then embarked on the mail steamer for Bombay. The heat was very oppressive till we reached Aden, where we went on shore for twelve hours and had an opportunity of inspecting that bleak, burning, treeless, plantless, yet wonderful place, with its marvellous fortifications and natural defences. In the evening we again went on board the good ship Behar, which soon weighed anchor, which, after a delightful trip across the Indian Ocean in beautiful weather, duly landed her passengers at the port of Bombay without mishap, the voyage from India to Bombay occupying some thirty-two days.

My stay at Bombay was of very short duration, and consequently I had no time to visit the public gardens and other places of interest as I intended to have done. I had seen nothing in the shape of vegetation since I left the Egyptian delta, and was much disappointed at finding so little in the parts of Bombay I visited. The whole amounted to a few Mango trees, a few scattered Coconut trees, and some flowering shrubs in the gardens. After arranging some matters with the gentleman who had brought me out to India, I started, in company with another young Englishman, in a chartered native craft called a "pattimar"—coasting steamers not being so plentiful in those days—for Calicut on the Malabar coast, a distance of some 700 miles. The crew consisted of eight or nine natives, not one of whom could speak a word of English, our interpreter being a Portuguese servant, who acted as interpreter, cook, and general

servant. The weather proved calm most of the way, but we suffered considerably from the heat, the vessel not being fitted up for the accommodation of passengers. The usual mode of procedure of the skippers of these boats, while on such voyages, is to frequently go close in shore, cast anchor, and then for the greater portion of the crew to land under the pretence of obtaining supplies of food, &c., retarding the voyage several hours each time of landing, but on this occasion the ship stood well off the land during the whole trip of nine days from port to port. True, we never lost sight of land, but objects were only dimly visible. The cloud-capped western Ghauts looked very grand all day long, and a line of vegetation was just visible, fringing the coast line nearly all the way, but the nature of this vegetation was a puzzle to me until my arrival at Calicut, when I found that this continuous belt of everlasting green extending for the 700 miles consisted of the Coconut Palm (*Cocos nucifera*), and a very magnificent and glorious belt it is, beginning within reach of the waves, and extending from one to three miles inland. The Phoenix dactylifera, or Date Palm of the Egyptian delta, is a stately and graceful tree, and one greatly to be admired, its stout straight stem and long feathery fronds giving a striking effect to the landscape. The Coconut Palm with its much taller stem, and almost invariably crooked withal, is not nearly such a handsome tree individually, but collectively, as seen in this glorious Malabar belt, and on the islands lying off the same coast, all lying within the influence of the south-west monsoon, it is beautiful beyond description. This was my first view of real tropical vegetation, and a grand one it was.—PLANTER.

(To be continued.)



WE are informed that MESSRS. SUTTON & SONS, Reading, have been awarded a gold medal for their fine display of seeds, Grasses, models, &c., at the Edinburgh International Exhibition of 1886.

— "B." writes:—"Please let me thank those who have kindly taken the trouble to assure me that the APPLES WARNER'S KING AND BRAMLEY'S SEEDLING are distinct. I have been so often 'taken in' with names, though I do not in the least reflect on those who were the unwitting cause, that my doubts are perhaps too easily revived. Also let me add my testimony to that of 'P. H. P.' (page 382) as to the pleasure derivable from Apple culture. It is the one hardy fruit which can be successfully grown in our climate, and which gives us a lengthened supply of fruit for any little trouble we may lay out on them."

— SAMPLES of CHEMICAL MANURES have been sent to us by Messrs. Viccars, Collyer, & Co., and the Alluvial Manure Company. It is obviously impossible that we can do more than say that the former is a dark brown, dry, and rather gritty mixture not disagreeable to use, and that an analysis of its constituents are embodied in an advertisement. The alluvial manure is lighter in colour, softer in texture, and its constituents vary according to the plants and crops for which it is prepared, as indicated in the circular of the vendors.

— MR. G. R. ALLIS sends us from The Gardens, Old Warden Park, Biggleswade, a bunch of GROS MAROC GRAPES with the following note:—"The Grapes is a sample grown without fire heat. They were produced in a house containing plants, with air on day and night throughout the season. The hot water has only been turned on about a fortnight, merely to drive damp out of the house. I have two or three Vines of Black Hamburgh planted in the same house, but in a better position as regards soil, &c. The Gros Maroc is planted in a shallow narrow border on the back wall of the house, which the sun does not reach before 10 or 11 o'clock. It ripens with the Black Hamburgh and appears to be very easy to grow; besides, it is a fine showy Grape, and I should think it would take well as a market Grape." The Grapes referred to are of a good size and admirably coloured, and, though the flavour is not fully developed, such examples would, no doubt, "take well" in the market.

— MADAME BARTHELEMY LEVET ROSE.—"W. R." writes:—"Will you kindly say in Journal whether Rose Madame Barthelemy Levet is a Tea or a Hybrid Tea? It is differently classed in catalogues—Messrs. W. Paul & Son have it a Tea, Cranstons a Hybrid Tea." When high professional authorities differ we think it advisable to give some of our accomplished amateurs an opportunity for expressing their opinion on this subject.

— A CORRESPONDENT, who occupies a rather prominent position in the horticultural world, alluding to the RIPENING OF FRUIT asks "If the writer of the article on the shrivelling of Grapes on page 379 is correct in his statement as to tartaric acid being converted into sugar during the ripening of Grapes?" And further observes, "That starch mucilage, and cellulose is converted into sugar cannot be disputed, and the change may be, and probably is, effected in part by the agency of acids, but that the acid itself is converted into sugar is a proposition that can scarcely meet with general acquiescence. If the tartaric acid in Grapes is really converted into sugar it would be interesting to know the process. The signature of your correspondent implies that he writes from the teachings of experience, and it would be instructive if he would oblige by stating how he arrives at his decision on the subject in question."

— AN American paper says, "The TOMATO MARKET has been very dull since September 1st, the fruit selling wholesale at only 20 cents (10d.) per bushel. We suppose the canning establishments know their own interests, and think they are wise in buying as low as possible, but 20 cents per bushel barely covers the cost of picking and carting to Boston, and indeed many thousands of bushels this year will be neglected and allowed to decay upon the plants on account of the low prices."

— WE are reminded of the approach of winter, and of the desirability of keeping the feet dry in wet weather, and preserving boots and leggings, by a sample of GISHURSTINE. This dubbing we have used for several seasons and shall continue to use, because we have found it as good as it is stated to be by the manufacturers. Not in outdoor work alone is it useful, but equally so to young gardeners under glass, whose boots are much oftener wet than dry, through watering, syringing, and cleansing. Like its insect-destroying progenitor, "Gishurst," Gishurstine appears to be a preparation of sterling value in gardens.

— REPORTS ON THE ONION CROP.—A note from America says that, "Owing to a smaller acreage, dry weather, and the maggot, there is a reduced yield. The Onions, though not as large, are, in most cases, of better quality than those harvested in 1885. Complaint of the maggot appears to be pretty general, with very few suggestions of a remedy. Special reports to the New England homestead, October 2nd, place the yield of the crop in Maine at from 200 to 450 bushels to the acre, prices ranging at 50c. to 1 dol. per bushel. The yield in Massachusetts averages from 250 to 500 bushels to the acre, according to quality of soil, culture given, freedom from pests, &c. Prices range at 50c. to 1 dol. per bushel, the same as in Maine. In Connecticut the Onions are smaller, but of better quality than last year. Cut-worms and maggots were unusually prevalent, half the crop in East Hartford and South Windsor having been ploughed up on account of their ravages. The prize varies from 75c. to 1 dol. per bushel. Only about 250,000 bushels will be harvested this year from the great Onion fields of Orange county, N.Y., which usually produce between 500,000 and 600,000 bushels on the 2500 to 3000 acres planted. The new Onion weevil, which proved so destructive last year, and the cut-worms are responsible for this."

— IN a small lean-to Melon house in the garden of R. K. Wyndham Esq., Corhampton House, Bishop's Waltham, is an excellent plant of BOUGAINVILLEA GLABRA trained along the back wall, covering a space about 30 feet long and 5 feet wide. It flowers very freely, and is remarkable for the very rich colour it assumes. There are about six branches growing from the main stem; from every eye along these numerous shoots grow, all of which are pruned closely during the winter. In the spring, when new growths are made from the eyes on each main stem, the plant is given a good soaking of water at the roots. Flowering commences early in May, and continues until the middle of November; many shoots bearing blossoms the whole length are cut quite 3 feet long. The quantity of flowers which can be cut from a plant growing so freely as this one renders it most useful, and its culture reflects much credit on the gardener, Mr. J. Cox.

— TOBACCO GROWING IN SCOTLAND.—The Scotsman states that there has been a fine crop of Tobacco in the gardens at Sunlaws, near Kelso, which Mr. Kerr, the gardener, planted in a wall border, after a crop of early Potatoes. The seed was sown under glass, the plants grown in pots, and planted out after the middle of July. It might be thought from the late date of planting that the crop would be useless, but such is not the case, for the plants grew rapidly, and reached 6½ or 7 feet high, with

leaves 28 inches long by 13 inches broad. The plants have stood 7° of frost uninjured.

— AT a recent meeting of the WAKEFIELD PAXTON SOCIETY the subject for discussion was the Potato. Mr. T. Senior, the President, was in the chair, and the vice-chair was filled by Mr. Arthur Goldthorpe. The subject for discussion was introduced by Mr. Herbert Chapman, one of the Honorary Secretaries, who read a brief but excellent paper on "The Potato," some remarkably fine specimens being exhibited. Mr. Chapman referred to the introduction of the Potato into this country by Sir Walter Raleigh, spoke of its great value as an article of food, clearly and fully explained its chemical properties, and exhibited the results of an analysis, showing the proportions of sugar, starch, fatty matter, and other properties contained in the Potato. An interesting discussion ensued, in which Messrs. Garnett, Carbert, Calvert, Thomas, Brown, Hudson, Preston, and others took part. On the motion of Mr. Carbert, seconded by Mr. Preston, St. John's Nursery, and supported by Messrs. Garnett and Hudson, a hearty vote of thanks was accorded to Mr. Chapman for his paper, and then the members of the Society proceeded to test cooked specimens of various kinds of Potatoes.

— WITH a view to drawing the attention of cultivators to the subject in a wider and more popular way than the learned Societies have done, it is proposed to hold a POTATO TERCENTENARY EXHIBITION at the St. Stephen's Hall, Westminster, from Wednesday, December 1st to Saturday, December 4th, and to appoint one of those days for a Conference, when some of the unsettled questions may be discussed. The exhibition will consist of four sections:—1. A historic and scientific collection, to include early works on Botany in which the Potato is figured; maps showing the European knowledge of the New World three hundred years ago, and the proximity of Potato-growing districts to the ports most frequented; early books on travel and voyages in which references to the Potato occur; works and papers in which attempts to define the different species are made; illustrations of the species and varieties; contemporary references to the voyages of Hawkins, Drake, Grenville, and Raleigh. 2. Illustrations of Potato disease, and Works on the subject. Sections 1 and 2 will be arranged under the advice of a committee of scientific gentlemen, who have consented to give their co-operation. 3. Methods of storing and preserving Potatoes; methods of using partly diseased Potatoes; Potato products of any kind. 4. A display of tubers of the various varieties grown. It is hoped that a nearly complete series will be shown. In this section, gold, silver, and bronze medals will be awarded. Each exhibit must be accompanied by a statement of date of planting, locality, nature of soil, &c. Full particulars will be found in entry form, to be obtained on application at the office, St. Stephen's Hall, Broad Sanctuary, Westminster, S.W.

— THE following gentlemen have consented to act as a SCIENTIFIC COMMITTEE OF CONSULTATION, to co-operate with the Executive, in relation to the sections as below:—President, Earl Cathcart; J. G. Baker, F.R.S., F.L.S. (Kew); Clements R. Markham, C.B., F.R.S.; George Murray, F.L.S. (British Museum); Worthington G. Smith, F.L.S.; J. Scott Keltie (Librarian R.G.S.); H. B. Wheatley, F.S.A.; and B. Daydon Jackson, F.L.S. The following are the subjects to be dealt with:—1. Illustrations of the order Solanaceae and the tuber-bearing species in particular. 2. Batatas, Yams, Ignames, &c., that in Elizabethan times were confounded with the Potato. 3. Distinct species of tuber-bearing Solanums. 4. Cultivation by the Incas. 5. Early cultivation in the British Isles. 6. Cultivation at Chiswick. 7. Cultivation of species at Kew. 8. Cultivation at Reading and other places. 9. Potato disease (*Phytophthora infestans*). 10. Methods proposed for preventing the disease. 11. Other diseases affecting the Potato. 12. Chemistry of Potato and of Batata as food. 13. Soils suitable for Potatoes, geologically considered. 14. Meteorology as affecting disease. 15. Historic literature of the Potato. 16. Maps showing European knowledge of the New World in Elizabethan times. 17. Raleigh. 18. Drake. 19. Hawkins. 20. Other voyages of Elizabethan reign. 21. Heriott. 22. Gerard. 23. Statistics of produce.

— MR. R. FALCONER JAMESON, Hessele, sends this paragraph on A PLAGUE OF APHIDES—"About three or four weeks ago the East Riding of Yorkshire was visited by great clouds of the winged form of these troublesome pests, and we now seem to be reaping the result, as I find that Chrysanthemum blooms just opening have quantities of the insects ensconced completely within; in fact, right down at the base of

the florets. Partially developed blooms, which show no signs of animate life on the exterior, yet on the florets being parted with the fingers, are discovered to be the abode of numbers of wingless aphids. It would appear as though the wingless aphids had laid their eggs among the florets, and these eggs, which in ordinary course would lay dormant until the spring, have been hatched by the warmth of the atmosphere under the glass. Several fumigators are necessary to scotch the untimely visitors, as the smoke does not seem sufficiently penetrating to reach them in the interior of the blooms. The *Yorkshire Weekly Post* of the 9th inst. contained a most interesting and instructive article by Mr. G. Paul, F.G.S., on the habits of these creatures."

CHALLENGE TROPHIES.

As I anticipated, the insertion of my notes on this subject has brought me a considerable number of letters, some offering assistance, and others suggestions. These have been of various kinds, but one idea seems to be very prevalent—viz., that it would be a great misfortune to divide the forces. This idea is excellently expressed by your correspondent, "A Southern Amateur," and I must confess that his arguments have considerable force, although I do not quite agree with the conclusion that he draws from them.

The main objection which has been brought against the proposition (which, as I have already said, was made to me by northern growers), is that the competition for this would be too narrowed, and that there would not be the same *keudos* in gaining a trophy for which all might not compete, as there would be in gaining one which was open to all comers. Should this take a decided form, I do not think that it would be obviated by altering the date of the metropolitan show, but by arranging that the trophy should be competed for at the provincial, and not at the metropolitan exhibition. When the Society was established it was arranged at a meeting, which comprised all the best growers in the kingdom of that date, that the metropolitan show should be either in the last week in June or the first in July. Gradually however, whether owing to change in the seasons, or because experience determined that the former date was too early, the first Tuesday in July came to be the recognised date; but older rosarians will remember that the Crystal Palace Show used in former days always to be on the last Saturday in June, and I do not think that any evidence has been brought forward that would justify the statement that the first Tuesday in July is too early. We must remember that we have competitors from Devonshire, Gloucestershire, and the south-west generally, and that there Roses are early. The same may be said of such home districts as Kent and Surrey. The Canterbury Show is always in the last week in June, so is Farningham, while Reigate has its before the National is held, and the Crystal Palace Show in most years precedes the National, and I feel tolerably certain that if any change were proposed in this fixture it would be very generally condemned.

The Provincial or Northern Exhibition is held about ten days or a fortnight later. This gives the midland and northern counties a better chance, but would it be equally fair on the southern growers? Well, as a matter of fact the principal prizes at our provincial shows generally fall to the southern growers, although northerners do gain a place in it. The fixtures for this show depend on a variety of circumstances. It must be remembered that the National is not quite independent in this matter. It combines with the provincial authorities in arranging the show, and I think very wisely does not attempt to ride roughshod over them, but acts *pari passu* with them, and leaves to them within certain limits the date of fixture, for many local circumstances have to be taken into consideration. Let me give next year's fixture as an instance. I was deputed by the Committee to confer with the Council of the Royal Caledonian Society to arrange matters. I found on meeting them that two things were absolutely necessary—the show must be held on a Wednesday, and it must be held before the 20th of July, as then the courts broke up and Edinburgh was emptied of the usual supporters of its show. Consequently, the show had to be fixed for the 13th, as the following Wednesday was the 20th. Some such reasons also determined the date of the Birmingham Show this year. These things show, I think, pretty clearly that it is not quite so easy to lay down a hard-and-fast line, but that, as Sir Roger de Coverley says, "There is a great deal to be said on both sides."

It would seem to me that the question resolves itself into this, Shall we have separate trophies for the northern and midland Exhibitions, or shall we transfer the competition for the metropolitan to the provincial Exhibition? I do not think it would detract much from the interest of the metropolitan Show, and would considerably add to the *clat* of the provincial one. I hardly think whatever is done can be well arranged until 1888. Edinburgh is too far north to commence it with, and probably the expense of the journey might deter some exhibitors who would otherwise put in an appearance. There is, moreover, the question of time. The Committee will soon be putting out their schedule, or at any rate making their arrangements, and matters like this require some considerable time to ventilate, talk about, and arrange.

Before quitting the subject let me just allude to "T. W. G.'s" criticism (I do not call it hypercriticism, for it had a foundation) on my statement about the gainers of the challenge trophy. It is true, as a matter of fact, that Hereford has not gained it, but as a matter of principle I think that I am correct. No doubt, the challenge cup offered by Mr. Cranston was in my mind. This did go, after a hard-fought struggle,

to Mr. Jowitt, again proving my statement that in such competitions the south has always had the pre-eminence, and at such a date the chances are a hundred to one that it must continue to do so.—D., *Deal*.

It gave me great pleasure to read the letter signed "Southern Amateur," which appeared in the pages of the Journal of 21st October. Our northern Roses may well blush when so highly praised by so competent a judge and splendid exhibitor. It is certainly true that when they are in "their full tide of glory" they are as good as can be grown in the southern parts of England, and I believe they have too much self-respect to contend for a challenge trophy closed to their sisters in the south. Objecting on this ground to "D., *Deal's*" suggestion of 7th October, I wrote immediately to him, and threw out as an idea that if the points scored by the winners in the trophy class at the metropolitan show were duly noted and added to those subsequently gained by same exhibitors at the provincial show, we might arrive at a tolerably fair notation as to whom the trophy should be awarded. The money prizes might be paid for each class at each show as at present.

I would have liked the principal class for Teas to have been included, so that the best all-round man might be recognised as the champion amateur Rose grower of the season. If this plan had been adopted it would have only conferred on Rev. Mr. Pemberton the position he has actually held for the two past seasons. I brought this forward at the spur of the moment simply as a crude idea, as there are at least three objections—first, that unless the season be an early one the northerners cannot show at all at the metropolitan, whereas the southerners can generally exhibit well till long past the middle of July, so the northerners are still left out in the cold; secondly, there might be much confusion from want of time allowed for judging, and possibly mistakes in putting down the points; thirdly, a good exhibitor with his Roses in grand form might be prevented by some other cause than want of blooms from putting in an appearance at one of the two shows, and thus by a fluke the trophy might fall to one less worthy. I entirely agree with "Southern Amateur" that no true amateur cares for a walk over.

If there is a big class open to north and south, there the best Roses will be found, without reference to the trophy, and it would not be edifying to see the trophy carried off by an inferior stand. As in politics, so in Rose-exhibiting, the unity and integrity of the empire must be maintained, no splitting into northern and southern factions.

I may be prejudiced, but I cannot help thinking that the metropolitan show is generally too early for nine-tenths of the exhibitors. The Roses there appear to be feeble as compared with those we see later on. This may be due to the terrific heat we have experienced of late years at South Kensington, but since the final contest between Messrs. Jowitt and Baker in 1880, I do not remember any Roses competing for the trophy at all equal to their exhibits, but I may perhaps be allowed to quote the following extracts from the Journal of 8th July, 1880, in the report of that Show:—"It will be safe to say that for the majority of growers the fixture, like all other exhibitions of the Society that have been held at the same place, was some days too early." Again, the report of the Wirral Show on 24th July, given in Journal of 29th, we read of the magnificence of Mr. Jowitt's thirty-six, as well as of other Roses, and those at the National Show at Manchester on 17th are described as of "exceptional quality, both as regards size and colour."

Mr. Mawley, in the "Year Book" of same year (1880), writes:—"The cutbacks would seem to have been at their best about 12th July, and the maidens about 23rd of same month." Mr. Whitwell took the trophy with lovely blooms in 1882, but I am sure he has very frequently exhibited much better Roses at a later period of the month, and I believe that to be the only year when his Roses have been early enough for exhibition at the metropolitan. The trophy should, in my opinion, be contended for in the midland counties, about the middle of July; but if this would really be hard on the Kent, Surrey, and Devonshire growers, then let us adopt the suggestion of "Southern Amateur," so that the southerners may have the trophy for one year, but would have to fight hard for it the next, when it would be contended for at the provincial show. With or without a chance of winning the trophy, we northerners understand the pleasure of fighting a battle which is always conducted on the principles of fair play, courtesy, and good fellowship.—NORTHERN AMATEUR.

"SOUTHERN AMATEUR," in his letter on page 361, puts the pertinent question, "What do the northerners say?" I have since discussed the matter with one of the leading amateurs of the north, and found him strongly opposed to the establishment of a close class for a northern trophy, but somewhat in favour of the proposal for handing over the trophy to the provincial exhibition (assuming it to be held in the north) in alternate years.

There is much to be said in support of this, and the matter is one that should be thoroughly discussed before the general meeting of the National Rose Society in December. I venture therefore now to bring forward a few arguments in favour of maintaining the existing arrangements, and start with the theory that a national trophy should be competed for at the chief show of the year, where the strongest competition takes place. Now on referring to past records, it appears that from 1882 inclusive the average number of competitors for the trophy at the London Show has been close on to ten, while in the premier class at the northern Show about half that number only have exhibited. Again, on looking at the names of the exhibitors at both shows there is little difference between them, the diminished number at the northern Show being caused by southern exhibitors dropping out; and as for results, if the proposed

alteration had been carried out no gain would have resulted to the north, except perhaps in 1883, when Mr. Slaughter was first in London and Mr. Whitwell in Sheffield. Since that date Essex and Surrey have divided the honours in the proportion of five to one. No rosarians have done more, both by example and precept, to teach what good Roses are and how they are to be produced, than the two leading amateurs of the north, and all would heartily rejoice to see the trophy either return to Durham or find a fresh temple in Cheshire or elsewhere. This result, however, should be brought about by natural causes, and not by fixing the contest at a date when the Roses of some of the strongest southern growers are over. The dates now adopted were not fixed for their, but for the general convenience of Rose exhibitors, and are indeed full late for some gardens. As an example of this I would instance Mr. Haywood's Roses at the Reigate Show on the 1st July this year. Fine, indeed, as they were, we were told that they were then a little past their best, and it should be remembered that it was formerly the custom to hold two provincial shows, one before, and the other after the London Show. Moreover Durham has won on July 4th, and that which has been done once may be done again. "D., *Deal*," has told us each year of late that the season has been an abnormal one, and probably this may account for the lateness of the Roses. In support of this view Mr. Hall's interesting article on Roses in Cheshire in the "Rosarian's Year Book" of 1884 may be quoted. He speaks therein of having to re-prune on the 17th May, 1883, in consequence of a severe April frost, and adds that his blooms were consequently late, the harvest commencing on July 4th. Now if plants will come into flower at this date in the north after such severe treatment, it is not unreasonable to suppose that with more genial seasons the northern amateur may again come to the front without the need of special legislation to enable him to do so.—NORTH HERTS.

THREE NEW CHRYSANTHEMUMS.

NEW and meritorious Chrysanthemums are numerous this season, and cultivators will have to make some important additions to their collections for another year. Japanese varieties, as usual, preponderate, and the trio represented (necessarily much reduced in size) in our illustration (fig. 59) are remarkable alike for their distinctness and fine substance.

William Holmes is one of the best early flowering Japanese we have, the plant of good, compact, yet free habit, being admirably adapted for culture in pots in the conservatory. The blooms are of medium size as regards diameter, but they are relatively deep with recurving flat or slightly fluted florets, of a deep red colour, the reverse bronze, and the young incurving florets form a pretty contrast with the other portion of the bloom. As an October variety this will take a prominent place, and it may be seen at some of the earliest shows, the plant being useful for grouping. It was certificated at the Royal Horticultural Society's meeting on October 12th this year, when blooms were shown by Mr. G. Stevens of Putney and Messrs. H. Cannell & Sons, Swanley; it was also again honoured by the National Chrysanthemum Society on October 13th, the blooms being exhibited by Mr. N. Davis of Camberwell and Mr. G. Stevens, and from all these exhibitors we have received specimen blooms.

La Triomphante is a handsome Japanese variety, somewhat early, but it forms a grand bloom and will make an excellent show variety. In Mr. Ridout's winning stand of twenty-four varieties at South Kensington last week it was a very prominent back-row bloom, one of the best in the collection, and it was shown in even better condition by Mr. J. Martin, gardener to C. N. Kidd, Esq., West Hill House, Dartford, at the Westminster Aquarium the following day. On the same occasion it was exhibited by several other growers, and certificates were awarded for it by the Floral Committee of the National Chrysanthemum Society to Mr. Shoomith, Hythe, Messrs. H. Cannell & Sons, and Mr. Martin, one of the blooms shown by the last named being represented in our illustration. The blooms are of good size when well grown, with straight, broad, rather flat florets of a pale purplish rose colour, a delicate and pleasing shade. It is one of Reydellet's varieties, and is included in the revised edition of the National Society's catalogue issued this year.

Phœbus is of English origin, having been raised by Mr. Alfred Salter, and sent out by Messrs. J. Veitch & Sons in the spring of the present year. It is a Japanese variety with long recurving fluted florets, somewhat flat in its early stage, but assuming the character depicted in our engraving when it becomes more developed. The bloom figured was shown by Mr. Martin on the same occasion as La Triomphante, and, like that, indicated superior cultivation, being clean and of great substance, much the best example of the variety we have seen. It is noteworthy for its bright clear yellow tint, a shade something in the way of Frizou, very pure and rich. Both Messrs. J. Veitch & Sons and Mr. Martin obtained certificates for the variety at the meeting named.

TRENCHED v. UNTRENCHED SOIL.

YOUR able correspondent, Mr. Iggulden, certainly deserves the highest commendation for the courage he has displayed in defending his non-trenching theory in spite of so many adverse criticisms. In his last communication on this subject (page 345) he has as usual attempted to justify the soundness of his theory by adducing a number of arguments and illustrations, but these tend to weaken rather than support his case. However honest his convictions may be on this important point at issue, the position he has taken up is an untenable one, and one which at no distant date he will have to unconditionally surrender to the "other side." This is at once apparent to those who have read the second para-

graph in the article above referred to, in which he admits the value (as pointed out by me in my previous article) of the intelligent drainage of such soils as that at Marston, but does not see his way clear to adopt it,

the surface soil, and this he employs as an argument against deep cultivation of the other parts of the garden. Now, in the case of the drain referred to is it rational to expect that a drain probably from 5 to 10 feet



Fig. 59.—CHRYSANTHEMUMS.—1, LA TRIOMPHANTE; 2, PHŒBUS; 3, WILLIAM HOLMES.

because a deep stokehole drain that was put in a few years ago has very justly failed to show signs of its having beneficially improved the soil in its immediate vicinity. He complains, too, of the ungenial nature of the subsoil thrown out this deep drain, some of which became mixed with

below the surface, covered with nearly the same depth of clay, is going to act in the same beneficial manner in draining off the surface water as one 18 inches to 2 feet deep would? Certainly not. Deep draining on such soils is next to useless if the drains are covered with clay, for the

simple reason that the water in its natural descent would soon cause the speedy cohesion of the former, and thereby render the passage of water to the drain impossible. What is wanted in this case is shallow draining, say 2 feet deep, or sufficient to carry off the superfluous water at that depth, and judicious trenching—that is, deep cultivation without reversing the positions of the soils and subsoils until the latter has been improved by the disintegrating agents referred to by me on page 317. Such a rational method of treating clay soils is bound to prove the most advantageous in the long run on account of their greater depth and fertility.

Then as to the unworkable nature of the soil over the stokehole drain. May I ask why your correspondent allowed such ungenial material to become mixed with the surface soil to such an injurious extent? Surely he does not mean to identify a case of this kind as being similar to the effects produced by judicious trenching. If so, his views of the latter are decidedly of an unorthodox type.

There are two ways of trenching, as in doing other matters, the right and the wrong, and I emphatically challenge anyone to disprove the fact that undertaken in a rational and judicious manner it has ever proved otherwise than beneficial. If I mistake not, Mr. William Taylor had, when in charge of the gardens at Longleat, almost if not nearly the same class of soil to contend with as Mr. Iggulden, yet he did not practise the surface-tickling system, but deep cultivation by trenching and burning of the subsoil, and all to excellent effect. This, too, in the same neighbourhood, and if I am not right in my assumption on this point I am open to correction.

With regard to gardens on a level with a river, it is stretching a point to bring in an illustration of this kind on either one side or the other, because such examples are altogether exceptional, and cannot be classed with those of the ordinary type to which this discussion has all along been confined. Exceptional cases demand exceptional treatment, but your correspondent's individual case bears no analogy whatever to that just referred to, therefore it will be going beyond the legitimate bounds of this discussion to refer further to it.

I cannot accept the statement that the deep cultivation of farm land by the steam plough has proved a failure, and especially on the reasons given—the great cost of machinery, and the ultimate appearance of the owners in the bankruptcy courts. My observations on this point in the counties of Worcester, Sussex, Hertford, and Kent have been of a decidedly opposite character to those of your correspondent's, for in every case I have found that capital judiciously expended in deep steam cultivation has improved the land fourfold. There is something beside the deep soil, and that is the intelligent cropping of it afterwards, that leads to ultimate success. Not far from my district there is an enterprising farmer who has perhaps more steam cultivators than any other man in the kingdom, and is also the holder of several large farms. This gentleman devotes the greater part of the land on these farms to growing fruit for preserving, especially Strawberries, and whenever he takes to new land—that is, such as has been employed in the usual way of farming, he sets his tackle to work, and the best possible evidence of the wisdom of this practice is the excellent character of the plants and the quantity and quality of the hundreds of tons of the fruit which he preserves in his own factory. Again, on the estate of the late Earl of Dudley in Worcestershire a few years ago tenant after tenant began to give up their farms, being unable to make the land produce by their shallow cultivation system profitable crops, and when such of these holdings came into his lordship's possession, a year of deep steam cultivation wrought wonders, as the now increased rentals of more than one of these farms will testify. Given capital and an intelligent use of the subsoil plough, farm land is greatly improved, and with a slight additional outlay and judicious trenching garden soils will be permanently benefited.

I am accused by your correspondent of making garbled quotations from his own articles to suit my own arguments. This I respectfully deny, having only given what I apprehend to be the substance of his arguments in order to prove that he is opposed to trenching in any form. I have referred to his first article on the subject in a back volume of the Journal, and there is no other evidence to justify me acknowledging having made any statement in reference to his early views in an incorrect form. The fact is our friend has, to use a vulgar phrase, worked himself into a corner, and to extricate himself has had, as more correspondents have indicated, to admit that trenching on some soils is beneficial—to wit, the admissions in his last article, which afford the very best possible proof of deep cultivation.

As pointed out by Mr. "Thinker" and myself, the Celery ridges afford the highest proof and illustration of the value of trenching, and how your correspondent can draw an analogy between his shallow surface system and this I cannot imagine. The two principles are as widely divergent as the poles are asunder, and if the Celery crops are grown in deep trenches at Marston, and the Beans and Lettuce be referred to grew thereon, there could not be better evidence that the soil there would be improved by the adoption of the very system he so strongly opposes. No one need be surprised for a moment of either "Thinker" or any other intelligent person solving the problem as they did. It shows conclusively that soil deeply worked has a greater chance of absorbing heat and of producing the most satisfactory crops in hot weather; and that trenching, judiciously performed, is the best and most durable method of keeping soil in a fertile condition with the least amount of subsequent labour and manure.—A KENTISH GARDENER.

FLAT ONIONS.

"'THINKER' has his thoughts and I have the Onions," was my observation to a friend on this question, and I think you will add it that

so long as we have the produce we can laugh at our critics. "Thinker's" remarks, however, have a slight appearance of being correct, as some kinds of flat Onions are by no means a desirable type, more especially the white ones, as they split before they are fully grown and decay prematurely in many cases; but there are flat Onions and flat Onions, and those well selected yellow ones, of which Webb's Banbury is a good type, do not show any of this disposition as a rule, while they possess the valuable advantage of growing quicker than any conical Onion I know, and they are also milder and more tender when cooked than the tapering Onions. In some of my previous writings in these pages on Onions I have recommended the Banburys for use in autumn and throughout the early part of the winter, and my experience leads me to assert that from August until February there is no Onion grown to equal them, but the more conical ones come in after that in the form of James's Keeping, Bedfordshire Champion, and others.—J. MUIR.

FORCING BULBS.

LAST year I tried what to me was a new plan in forcing Hyacinths, Tulips, and Narcissus, and with the best results. After potting and a thorough watering given the pots were placed in a Melon frame which had not long been cleared of its summer occupants. The dry soil of the bed was heaped over them to a depth of 6 inches. The lights were kept closed for six weeks, at the end of which time I uncovered the pots and found that the Hyacinths and Tulips had made a healthy, sturdy, and uniform growth of about 2 inches. The Narcissus had not made the same progress, being naturally of slower growth. The whole were gradually inured to the light, and, maintaining their original sturdiness throughout their subsequent growth, produced blooms of exceptional merit. I attribute the success I attained with these bulbs to the mild heat of the decaying Melon bed. As far as my experience goes, this plan is much superior to the ordinary method of plunging in cold ashes out of doors or in cold frames.—THOMAS RICHARDSON, *The Gardens, Simonside Hall, South Shields.*

CHRYSANTHEMUM NOTES.

BELLE PAULE—TAKING THE BUDS.—Replying to Mr. E. Molyneux's notes on Belle Paule, as stated before, I have grown this variety three years, and always failed to obtain good flowers from crown buds, but never failed in having good flowers from lateral buds, and plenty of them. Though a little later in opening, I maintain that the proper time to judge a variety—i.e., if late or otherwise, is to allow it to expand its lateral buds. Many late varieties can be made to flower early by selecting the summer or crown bud and disbudding and stopping all growth afterwards. How does Mr. E. Molyneux reconcile the fact of Belle Paule flowering two years in succession during the months of December and January when left the greater part to Nature and only partly disbudding the small buds from the sides? I differ from Mr. E. Molyneux in selecting crown buds of this variety for the best flowers, and maintain that better blooms and less failures will occur by selecting lateral buds both for exhibition blooms or otherwise. There are many other varieties that produce better blooms (and at their proper season) by selecting lateral in preference to crown buds. What does Mr. E. Molyneux think when November and December varieties are made to flower in September (see Journal list of varieties shown at Aquarium in September), and in good condition, and October varieties in splendid condition in January, is not that forcing them out of their true season of flowering? Very few varieties perfect their crown buds when left to Nature, but always perfect their lateral buds, if not injured, hence my time of selecting late varieties from early. Does Mr. E. Molyneux infer that, taking the first buds that appear on a Chrysanthemum and making it expand its bloom, that it must be an early or midseason and not a late variety?

If employers were to allow their gardeners to select only crown buds on their plants, the flowering period of Chrysanthemums would be very much shortened. By selecting good lateral growths the period of blooming could be extended well into January. There are other motives for cultivating the Chrysanthemum besides growing them for exhibition. Princess of Wales.—A great deal has been written about White Princess of Wales. Well, what is White Princess of Wales but Mrs. Heale? Mrs. Heale is said to be a sport from Princess of Wales, and if Princess of Wales produces white flowers in place of rose-tinted lilac blooms it must be Mrs. Heale. I had Princess of Wales perform this freak of nature more than once, and Mrs. Heale changed to Princess of Wales, therefore no White Princess of Wales exists, or is known to the craft. Why this controversy about these two distinct varieties? An old bloom of Mrs. Heale may deceive a judge, as it changes colour with age to lilac, but an old bloom of Princess never changes to white, but often deepens in colour. Princess of Wales in most catalogues (I think without reference), the National catalogue included, places it (syn) with Beauty of St. John's Wood and Princess Alexandra. The latter may be Princess of Wales in the flesh, but not in the Chrysanthemum. I have the two distinct in form and colour. Princess Alexandra has tubulated florets, and much lighter in colour. This variety I received when at Liverpool about twenty years ago from John Salter, late of Versailles Nursery, Hammersmith.—ROBT. OWEN, *Floral Nursery, Maidenhead.*

BELLE PAULE.—Mr. Owen is a peculiar critic. He thinks I must not have the true variety of this because his, without being stopped and for some time housed, are 6 or 7 feet high, while mine stopped and growing against a fully exposed south wall are only 4 or 5 feet high. I believed with Mr. Molyneux, one of the causes of failure to grow this

erratic Chrysanthemum might have been occasionally insufficient moisture at the roots and imperfect maturation, and hence my reason for growing it where a maximum of both would be secured. By spreading out the stems and training them as they develop every inch is firm wood, and the foliage as well becomes ripe and matured. If frost threatens—there has been none in the south of Ireland so far—protection is easy. If Mr. Owen would try the ordinary November bloomers in this way, not to mention the early varieties, he would find the growth is much more restricted and less rampant than he seems to think. Until he does he cannot compare results.

After reading Mr. Molyneux's note on this subject (page 385), especially as to the time of flowering, I feel inclined to doubt that Mr. Owen has the true variety. Mr. Owen recommends me *Flora* (P). I should like to ask him does he consider it preferable to *Précocité*?

CALYX BUDS ON CHRYSANTHEMUM BLOOMS.—On this point, in which small incipient buds seem to grow out of the calyx underneath the petals, and that "T. P." (page 363) aptly compares to Hen-and-chicken Daisies, "A. L. G.'s" explanation as to the time of "taking" the buds seem the most reliable cause. Mr. Owen says: "He has come to the conclusion 'T. P.' has left the whole of the buds surrounding the central, and has not disbudded." He has misunderstood the matter altogether. "T. P." has one of the largest collections well grown, and is himself one of the best amateur growers in the British Isles.—W. J. MURPHY, *Clonmel*.

LAST YEAR'S PLANTS.—Last spring I had about 100 old plants which had not been removed from the pots in which they had flowered the previous autumn, only the old wood cut away and the roots kept from frost. In April the young growths were about 1 foot high and very weak. Instead of throwing them away I cut the young growths down to within 2 inches or so from the old stumps. When the fresh breaks were just started the plants were turned out, the soil shaken away, and a portion of the roots cut off sufficient to allow of their being placed into 5 or 6 inch pots, using a compost of a third leaf mould and sand, thoroughly mixed with good turf. When potted they were placed in a cold frame, kept close, and syringed daily till the roots had taken hold of the new soil, after which air was freely admitted. Only a very little watering was necessary during the first fortnight. The plants made fresh roots quickly, and when the young growths were about 3 inches long I examined them, taking out all the weak ones, leaving three or four of the strongest. The plants were next placed in 10 and 11-inch pots. The soil used was similar to that in which they were first potted, with a little soot added. These old plants were from that time treated just the same as those taken as cuttings at the usual time in December. The wood appears riper than the other, and the bloom very promising. Some of both were disbudded, and at the present time the most promising flowers are on the old plants. The object here is to grow for cut flowers and grouping. The plants are from 3 feet to 5 feet high, and answer the purpose admirably.—G. GARNER, *Amberwood Gardens, Hants*.

NEW VARIETIES.—It is full early yet to form a correct opinion of some of the most recent introductions, but it is evident that there will be a few valuable additions to the large-flowering Japanese section that will find a place on the exhibition table. With one exception I have not yet seen any promising addition to the incurved section. What a pity our continental raisers do not turn their attention to this class now instead of flooding the country with so many doubtful improvements in the Japanese and decorative sections. There is still a wide field open for them in this direction.

L'Ébouriffée (Japanese).—This variety I obtained from Messrs. Cannell in the spring, and it has fully borne out the high estimation I formed of it when I saw it in their stand last year. In growth it very much resembles *Jeanne d'Arc*, the foliage and wood being of a light glaucous green with rather finely cut foliage, but the flowers open out very much like *Criterion*, which it somewhat resembles, only the colour is not so decided as in that excellent variety, being splashed and heavily shaded brown on the amber ground. The florets are broad and the lower ones thrown well out. A good one to cover the board, and one of the most promising new varieties for exhibition.

Jupiter (Japanese).—This is of the *Jeanne Delaux* and *John Laing* type in growth and evidently closely related to them, but a very great addition in the brightness of colour. It unfolds very much after the style of *Jeanne Delaux*, with florets of the same character of a bright fiery crimson colour.

Pelican (Japanese).—A long tuby-petalled variety of the *Dragon* type, and will evidently make a good exhibition flower for the board. The buds come somewhat hard, and will require a little heat to fetch them out. A most promising variety; colour, a creamy white.

White Dragon (Japanese).—However much this may resemble the preceding variety in colour and shape of flower, it is thoroughly distinct in growth, being evidently a counterpart of the old *Golden Dragon*. I saw it looking very promising at Morden Park, and I hope Mr. Gibson will be able to show it in good condition.

Maiden's Blush (Japanese—Stevens).—This is a very robust grower, with large broad foliage, flowers deep and full, florets broad and reflexed, of a delicate blush pink, but hardly long enough to be a typical Japanese. Very distinct.

Madame J. Laing (Japanese).—A very robust grower, with broad and distinct foliage. The peculiarity of the flower buds, as they are beginning to unfold, is very noticeable. They appear to be scalded and withered, but they open out with broad and somewhat pointed florets of

good substance; colour, a silvery pink, outer petals splashed and shaded of a deeper lilac pink, centre cream. Distinct, but with rather too much incurved blood in it.

Bronze Queen (Incurved—Carter's).—This variety appears coming true to its character as exhibited last year, and I was in hopes it would make a valuable addition to the incurved classes. I have no doubt but that we shall see some good flowers staged of it. I am only afraid that it will have the long florets of the old *Golden Queen*, which is so very apt to reflex and go back instead of the shorter incurved petals of *Lord Alcester* or *Golden Empress* type. The day may come when we shall be able to put up a dozen distinct varieties of *Queens*; a deep yellow, Mr. Bunn colour, will no doubt be the next break, and what a treat if we should get from this bronze a dark one of the *Prince of Wales* or *Regulgence* colour.—C. ORCHARD.

TAKING CHRYSANTHEMUM BUDS.—It appears I did not make my meaning sufficiently clear respecting the buds of our Chrysanthemums; at least Mr. Molyneux did not rightly understand it if he thought I meant that the buds I said were taken on the 6th of August were the same that were showing on the 1st. Had those buds been allowed to remain on the plants—not taken—six days, I should certainly agree with Mr. Molyneux in saying our plants did not receive proper attention; but I wish to explain to him that all buds that showed before August 6th were at once removed and the shoots taken on to the next bud.

The varieties of which buds were taken from the 6th to the 14th of August were *Meg Merrilies*, *Golden Dragon*, *Comte de Germiny*, *La Nympe*, *Duchess of Albany*, *Criterion*, and *Soleil Levant*. Of these the two first-named were amongst the few varieties Mr. Molyneux said might be taken on the 10th, and even here that date is not too early. Admitting we did not strictly follow Mr. Molyneux's advice when we took the buds of the varieties mentioned above, I can scarcely perceive how he can blame us for taking all that showed after that date, for in the concluding chapter of his articles on their culture (page 301, September 30th), he says, "I have always tried to impress upon beginners that there is no necessity to do certain things on the same date exactly; indeed, it is impossible to 'take' Chrysanthemum buds on any given day of the month, for the reason that buds do not always show on the same date each year; therefore, should they show on the 5th of August one year instead of the 10th, it is hardly likely that I should advise the removal of such buds because of their being five days too early." Therefore I conclude Mr. Molyneux would not have removed those buds had he been in my place.

Mr. Molyneux tells me that if I wish to have good blooms of the varieties I named first in my note I shall be compelled to have them fully expanded by the time I stated they were fully out, as these varieties are naturally rather early in blooming. I presume Mr. Molyneux meant this to apply only to growers in the most southern counties, and in this I fully agree with him; but evidently it is not the same everywhere, for on referring to the *Journal* for November 12th of last year I find that at the *Crystal Palace Show*, held on the 6th and 7th of that month, blooms of four of the six varieties I mentioned were exhibited in winning collections. In the class for six Japanese of one variety Mr. Orchard was a close second with *Mons. H. Jacotot*, of excellent substance and superb colour; whilst *Comte de Germiny* and *M. Tarin* were amongst the "charming examples" exhibited by Mr. Ridout in the class for eighteen varieties of Japanese, thus proving that some growers are able to obtain good blooms of those varieties without having them fully open by the middle of October.

In the notes on the *Chrysanthemum Outlook*, at page 368 of the *Journal*, I see Mr. Harding of Bristol House has managed to secure blooms of *Jeanne d'Arc* at the right time by topping the plants in July and taking crown buds towards the middle of September. Would those buds be rightly termed "crown" buds? and will they produce good blooms? If so, would it not be a good plan to adopt with all the naturally early varieties? Perhaps someone who has tried this will be good enough to record the results, as it would doubtless be very acceptable to others as well as myself to know how to get good blooms of those varieties in November.

I must add that it was not my wish to be unjust in what I wrote at first. I simply gave as my opinion, which I still maintain, that the 1st of September is early enough for taking the buds of most varieties.—C. L., *Bristol*.

HEN-AND-CHICKENS CHRYSANTHEMUMS.—I thank "A. L. G." for his reply to my query relating to above, which I feel sure is the correct explanation, as a plant of *James Salter* baving this peculiarity in crown buds set early in August has fair ordinary terminal blooms upon it. Mr. Robert Owen is quite in the dark in his remark on this subject. I have read with great interest the notes from the different growers in various districts, and think some remarks from the South of Ireland may be acceptable to your readers. "W. J. M." writes from this locality, but though enthusiastic in all matters relating to horticulture, he only grows Chrysanthemums for decorative purposes, not having sufficient glass to house them. About five years since I was the first here to grow for large blooms. Several of my friends and neighbours appreciating the result followed my example (some of whom have already passed me), the outcome being a local show held last year, which was considered very good for a first attempt. This year another show will be held on 21st November on a more extended scale. Owing to the cool and wet summer here, plants have grown very tall. I have one plant of *Madame Audiguier* unstopped which is now nearly 10 feet high, three others were smashed by high winds. I have several other varieties over 8 feet high, with crown buds nearly expanded, such as *Belle Paule*, *Comte de Germiny*,

Prince Alfred, Fair Maid of Guernsey, &c. Belle Paule has done well here, all the growers having been able to set crown buds. I have one plant with three fair sized crown blooms three parts expanded and two plants with a number of terminal buds, but not suitable for show purposes. Only two plants of incurved sorts with me show scaly centres. These were set early in August, all the rest were not set until after 1st September and have perfect centres, though most are only of moderate size.—T. P., *Clonmel*.

SULPHIDE OF POTASSIUM FOR MILDEW.

THIS preparation, as made especially for destroying mildew on Roses, was strongly recommended last winter, and I have been hoping that some of those rosarians who have made notes in the Journal on the past season would give us their opinions on its use. None such, however, having appeared, I venture to give my own experience.

I purchased a 1s. bottle from the firm recommended, but as this makes 32 gallons of solution, it ought to suffice as a sample. I made the solution of the required strength, and applied the whole of it at different times by syringing, sponging, and dipping. I am happy to say I believe it will destroy mildew, but am not prepared to recommend it. It is, I think, in one of Dickens' works that a Cheap Jack is represented as selling an insect-destroying powder. On a purchaser inquiring how it was to be used, he was told that the F sharp or B flat was to be caught and held between the finger and thumb of the left hand in such a position as to force its mouth open, and that then a few grains of the powder were to be put down its throat, which would presently cause the insect to expire. Now, sulphide of potassium is not so bad as that, but I did find a difficulty in the application of it. Those preparations for mildew which have soft soap in them may be induced to remain on the plant, but there being no such soapy or greasy matter in the solution of sulphide of potassium, it runs off the leaves like water off a duck's back. Possibly spraying it might result in its remaining better on the leaves, but the solution stains badly, and you could not spray it where any blooms were opening.

A most serious objection, also, is its horrible smell. Mr. Fish, in the "Rosarian's Year Book," objects to "compounds of paraffin and sulphur as simply abominably incongruous among fragrant Roses." What must he have thought of the sulphide of potassium he there recommends when he came to try it? With these two strong objections against it, I could not find any point about it better than any other preparation, except, perhaps, that it can be prepared rather more quickly and easily. I do not find that it or any other remedy will prevent mildew coming again as bad as ever even in two or three days if there has been rain in the interval. It is a great business to dip every shoot; the stiff ones cannot be dipped. Nothing but dipping or spraying will reach the under sides of the leaves where the mildew is worst, and spraying will not do when the Roses are in bloom.

Let us have a gold medal, or a gold cup for the matter of that, at the next National Rose Show for a really efficacious destroyer and preventive of mildew. It will be more valuable than any new Rose.—W. R. RAILLEM.

METHYLATED SPIRITS v. INSECTS.

ON different occasions I have received plants infested with mealy bug, scale, and woolly aphides, but at the present time my plants are free from them. I keep a bottle of methylated spirit and a good sized camel hair brush, frequently examining all plants for some time after their arrival, and if any vermin are detected I give a thorough dressing of the spirit, which dries very rapidly and destroys the enemies and their eggs. About two years since I bought a dozen choice Cacti, which unfortunately were all infested with mealy bug, but by constant dressings, especially into the joints where the eggs were deposited, the bugs were all destroyed, and the sickly plants soon assumed a healthy appearance. Bouvardias are subject to scale, but the pests soon relax their hold upon the plants, and can be observed after a good dressing dried up on the brush. The spirit is used at its full strength, and I have never found it injure a plant, although I have even applied it to Cinerarias to destroy mildew, which it has successfully accomplished.—W. G., *Elmdale, Sutton*.

CARNATION SOUVENIR DE LA MALMAISON.

THIS beautiful Clove is being grown extensively in some establishments, and as a few words on the subject may be of service to intending cultivators I have forwarded some remarks for the readers of the Journal. The plants should be layered about the beginning of August, or as soon after flowering as possible. Devote a frame to the purpose if possible; but if not they can be layered outside. In either case use good leaf soil and sand liberally to layer them in, which will cause them to lift with good balls of soil. If layered in a frame, a slight shading will be useful for a day or two, and if well attended to as regards water they will soon be rooted. In layering the old plants should be carefully turned out of

the pots, and planted firmly in the bed, or if the pots can be spared for the three or four weeks the layers take to root, they would be better plunged, which would prevent any disturbance of the roots. In three or four weeks' time from layering they will be ready for placing in 7 and 8-inch pots. See that all the pots are thoroughly clean and well drained, pot moderately firm; they may then be well watered and stood in a cool house or frame. The soil should be light—say three parts loam, one of leaf mould, one of peat, one of dried cow dung, a good addition of sand and charcoal, and a small quantity of soot.

The twelve-months-old plants that are intended to be grown on should have all loose soil taken off them, and if possible the ball reduced a little, and given a slight shift, after which their treatment will be the same as the younger plants. They are rather subject to attacks of green fly, and should be fumigated occasionally. The house or frame in which they are placed must never be kept close, except in frosty weather, when frost must be excluded.

Careful watering is necessary, as a plant overwatered, or not supplied with sufficient, soon shows the neglect by turning yellow, and no after care will restore it to health. The two-year-old plants certainly produce a great quantity of flowers, a well-grown two-year-old plant carrying from sixty to seventy useful flowers, but for size and quality the young plants produce the best.

As soon as the spikes begin to rise they should be neatly staked, and the pots being by that time getting full of roots the plants should be assisted with a little liquid manure once or twice a week, giving it oftener as the plants require more water. To some this may appear too much trouble to spend on Carnations, but taking into consideration their fine effect when in full flower, their usefulness for general decorative purposes, and also that at the time of their flowering many people have houses unoccupied, any extra trouble is well repaid by their great beauty and sweetness.—J.

MUSTARD AND CRESS.

MR. L. CASTLE'S account of the Mustard and Cress trade in your issue of October 14th, is a wonderful example of what can be done with so simple an article. Perhaps the most astonishing part of the business is the substantial balance in favour of the grower, when the heavy items of expense are placed against the very low price received for the produce. The production of Mustard and Cress by the vanload for market with special convenience, and the supply of a private family when no special provision is made, are two very different things. I have, for the last few years, had to produce a daily supply throughout the year, and it may be of service to some if I describe how we do so during the winter months. We grow it in shallow boxes, 2 feet by 1 foot, and to have a constant supply seven boxes are required. A box of each is sown every week. As Cress takes a week longer to grow than Mustard, four boxes are necessary to keep up the succession instead of three as for Mustard. The soil generally used is old waste potting soil from under the potting bench, with which is mixed nearly an equal quantity of fresh but slightly dried horse droppings. The soil is made moderately firm and smooth on the surface, is then soaked with liquid manure from the stable tank, to which has been added warm water sufficient to make it lukewarm. The seed is then sprinkled on the top but not covered with soil. The boxes are then placed where there is a little warmth from pipes, and covered over with a sheet of thick brown paper. In three or four days the seed will have germinated, when the paper must be removed, and when the seed-leaves assume a green colour the boxes must be moved to a light airy place near the glass. In about ten days the Mustard leaves will be fully developed and fit for use. Two points here are of importance. Thoroughly soak the soil in the boxes before sowing the seeds, and stand them on a moist base if possible, so that they require no more water while it is growing. Avoid flabby leaf mould in the soil, as it is apt to "lift" with the young plants and is difficult to wash out of it, and never cover the seeds with any soil if you would avoid "grit," so objectionable in the salad bowl.—A WORKING GARDENER.

LAVATERA ARBOREA VARIEGATA.

BEING the discoverer of the above-named plant, I was very much pleased to read Mr. Record's note, p. 371, and to learn that it appears to be gaining favour with many cultivators.

My object in now writing is to advise anyone who may have well-grown plants from 2 to 4 feet high to lift and pot a few of them. Much depends on the texture of the soil as to their lifting well or badly. If, however, they are cut round with a sharp spade and loosened, then the balls made firm by treading and allowed to remain for a fortnight, there will be no difficulty in getting them safely into pots. After potting they should have a good soaking of water, and they may stand out until wintery weather sets in, at which time an unheated Peach house will afford sufficient protection. Some time in April a portion of the plants thus treated may be planted out in suitable positions, a few may be kept in their pots for the conservatory.

This plant attains its highest degree of beauty from the time growth commences in the spring until after blooming. The shoot you figured in the Journal, vol. ii., p. 467, is an excellent representation of this spring growth. The beauty of the plant from which it was taken is still fresh in my memory. It would appear from Mr. Record's note that some are taking a good deal of trouble with it. With me the difficulty is to keep it in moderate numbers, hundreds have fallen under the Dutch hoe during the past summer. Mr. Record is right with regard to soil influence in the

variegation. In this garden it does not come out quite so well as I have seen it in some places, but of the hundreds of plants which have come under my notice I have not yet seen a green one. Should anyone desire to dwarf their plants which are growing in the borders (not those intended for potting) it may be done by cutting the stems half way through near the soil and carefully bending the plants down, making secure with a stout book-peg.—T. S.

P.S.—I would not advise this laying down to be done so late in the season as this, nor would I attempt it on very large plants having stems as thick as one's leg, but I have often seen tall plants with good heads, which would look better a foot or two lower.

CRATÆGUS TATARICA.

AT the meeting of the Royal Horticultural Society on Tuesday, October 26th, this year, Messrs. J. Veitch & Sons of Chelsea exhibited



Fig. 60.—*Cratægus tatarica*.

fruit-bearing branches of a small tree or shrub named *Cratægus tatarica*. It is notable for the large size and bright colour of the fruits, which would render a specimen of moderate height very ornamental at this time of year. The Floral Committee awarded a first-class certificate for it, and as it is seldom that we have to chronicle additions to really useful trees or shrubs, the accompanying illustration is given to portray the chief characters of the plant.

The leaves are large and deeply cut, almost triangular in outline in some cases, as shown in the lower left-hand leaf in the woodcut, but in others more rounded or oval, the segments sharply serrated. The fruits are an inch or more in length, about three-quarters of an inch in transverse diameter, rather ovoid in form, with a small protuberance at the base on one side of the stalk, such as is seen in some varieties of Pears. The calyx tube at the apex of the fruit forms an open deep narrow cavity, slightly puckered round the margin. In colour the fruit's are a deep clear

scarlet, and they are borne on long slender stalks in clusters of six to twelve at the apex of the branches, their weight giving them a slightly drooping appearance.

The plant from which the specimens were obtained has been growing in Messrs. J. Veitch & Sons' Coombe Wood Nursery, but the exhibitors are uncertain when it was introduced.

REVIEW OF GRAPES.

AFTER Mr. Taylor's letter upon the subject of the two bunches of Gros Maroc exhibited by him at the Crystal Palace and South Kensington Shows, and your remarks on those of the same variety sent you by Mr. Stephen Castle, surely "Exhibitor" and his party of "skilled gardeners" and "competent judges" will be convinced that their allegation of the large bunch being a Gros Colman is, to say the least of it, entirely a mistake.

I observe "Exhibitor" lauds Mr. Taylor on the one hand, and is pleased at his success, while, on the other hand, he at least implies dishonesty. No one can pretend to say that a man of Mr. Taylor's experience and knowledge of Vines and Grapes could possibly grow Gros Colman and Gros Maroc together and say he did not see any difference between them. There can be only one inference drawn from "Exhibitor's" remark about a bunch of Alicante being staged between the two bunches of Gros Maroc. I ask your correspondent if it is not questionable taste for one exhibitor to try and discredit another because he happens to be a successful rival, and is it not aggravated when the attempt is made anonymously?—J. McINDOE.

THE CHRYSANTHEMUM OUTLOOK.

FOREST HILL NURSERY.

AMONGST the specialties in Messrs. J. Laing & Co.'s nursery at Forest Hill the principal place is occupied just now by the Chrysanthemums, although the Tuberous Begonias which have made such a wonderful display this season are not yet over. A spacious span-roof house, 100 feet long, is devoted chiefly to the Chrysanthemums, about 600 plants being arranged in a central bed sloping to each side, the side stages being filled with Tuberous Begonias. The new varieties are numerous, both introduced and home-raised seedlings, some of the latter being very promising, and the continental novelties also seem better generally than usual. The plants have been well grown, compact, and healthy, and are producing good blooms and buds, very fresh and bright in colour. The Japanese are the most advanced, and the following varieties are very noticeable, chiefly novelties of the present year or previous season. M. Cossart, bronze or reddish yellow, rather flat florets, good bloom; Charlotte de Montcabrier, fluted drooping florets, rose streaked at the edge, of fine substance and beautiful; Dominique Pertnzes, bright yellow, very long florets faintly quilled at the base; Jenny Mestre, a small Japanese, something like a reflexed, bright bronze red; Gabriel Porte, yellowish with a bronze reverse, distinct; J. H. Laing, creamy white, yellowish centre, varying in quality, but a good variety when seen as it is at the Temple; Coquette de Castille, very handsome bloom, with long fluted florets; Annie Clark, a large bloom, pink, flat florets, white or yellowish in the centre; Lady Mathieson, very delicate tint blush rose, a good variety; L'Ebouriffée, a fine variety, the florets long, yellow, and bronze red; Mdle. Paule Dutour, very beautiful, white shaded with rosy purple, and tipped with purple. Five seedling Japanese raised by Messrs. Laing & Co. deserve notice—namely, Rose Beauty, of a clear rose tint, the blooms of good substance; Punctatum, florets flat, deep rose, spotted with white at the upper part, white at the base, curious and distinct, the florets crossing each other; Pearl, white with a lemon tinge in the centre; Titania, bluish or white recurving florets; and Mrs. Foster, crimson drooping fluted florets, silver reverse, very distinct. To these may be added of better known Japanese the following useful varieties:—Alexandre Dufour, free; John Laing, excellent; M. Tarin, good; Dr. Macary; Beauté des Jardins, fine crimson; L'Incomparable, Mandarin, Lakmé, Jeanne Delaux, M. Henri Jacotot, M. Moussillac, and the bright clear yellow Frizou, one of the best of its colour.

Incurved are coming on well, but there are not so many blooms out at present, though good examples of Emily Dale, Queen of England, Jeanne d'Are, Nil Desperandum, Empress of India, Golden Queen of England, and Mr. Brunlees are included amongst them. Anemones and Pompons are all duly represented, but of the latter, two are especially good—namely, Flambeau Toulousaine, pink and white, and Mdle. Elise Dordans, with fine symmetrical globular blooms, both of which have been certificated, stand out prominently from the others as excellent varieties.

Any reference to Messrs. Laing's nursery would be incomplete without a word or two about the Tuberous Begonias, especially as just now the thousands of seedlings are being lifted from the beds out of doors. About 100,000 have been so grown, carefully marked when in bloom, and are now assorted in their colours to supply the increasing demands for cheap seedling varieties for bedding. During several months a most brilliant show has been formed with these plants, both indoors and out. Orchids receive much attention, and the general stock of stove and greenhouse plants is in capital condition.

THE CHELSEA NURSERY.

In the Camellia house at the Brompton Road end of the nursery, and in a large span-roofed house next to it, Messrs. J. Veitch & Sons have an

excellent display of these popular autumn flowers. Over 800 plants are included in these two houses, representing all the best varieties in each section, together with the novelties of the present year, which are now being carefully tested in comparison with the older varieties, a service that all can appreciate who know the strangely heterogeneous character of the varieties so glowingly described by the French raisers. Besides these are several of the varieties raised by Mr. Alfred Salter and sent out by this firm, one of the best being *Phebus*, a handsome bright yellow Japanese, with recurving fluted florets (see the illustration page 411). *Comet* is another of the same raiser's best varieties, a medium-sized flowered Japanese, with straight-spreading bright orange red or bronze florets, very free, and useful for conservatory decoration, making a grand dwarf specimen. *Ruby* has incurving florets, crimson with a light reverse. It is regarded as an incurved variety, but the blooms are not sufficiently advanced to permit its true character to be seen, though it is a promising novelty. *Janira* is a pretty Japanese variety, something of the *Beauté des Jardins* type, but more attractive, with recurving fluted bright crimson florets, and a silvery reverse that in the younger flowers has a most pleasing appearance. *Buttercup*, a variety certificated at the last meeting of the Royal Horticultural Society, has bright clear yellow blooms somewhat intermediate between the Japanese and reflexed types, and one that, from its free-flowering character and good habit, will probably become a favourite decorative variety. *Lady Rosebery*, a Japanese with flat broad florets, forms a bloom of excellent substance, and may be expected to be seen in still better style. The last of Mr. Salter's varieties that we have to note at present is Mrs. Weldon, a peculiar form of the Japanese type, with quilled straight-spreading rosy purple florets, very curious and distinct.

In the *Camellia* house a row of *Chrysanthemums* is arranged on each side of the path, and a very pretty avenue they form; many of the plants having been stopped at of medium height, permitting the blooms to be readily seen—a considerable advantage. The Japanese are conspicuous for their bright varied tints, and there is a number of handsome flowers expanded, such as *Val d'Andorre*, *Lakmé*, *Brise du Matin*, *Rosa Bonheur*, *Jupiter*, *Maiden's Blush*, *Sonnet d'Or*, *M. Astorg*, *Bonle d'Or*, *M.M. Thibaut et Keteleer*, *Bras Rouge*, *Etoile du Midi*, *William Robinson*, *Le Chinois*, *Elaine*, *Beauté des Jardins*, *J. Laing*, and *Roseum superbum*, with its more recently introduced counterpart, *Souvenir de Haarlem*, which is identical in all respects with the former. *Gloriosum* is a Japanese variety from America, certificated last year. It has long drooping twisted yellow florets, somewhat suggestive of the *Dragon* style.

Then in the general show house, still referring only to the Japanese, we find *Mandarin* in excellent condition, the blooms large, with straight narrow twisted or fluted florets, radiating so as to form a globular bloom, tinged with blue purple fading to white; *Mlle. Paule Dutour*, large handsome blooms; *Ornement*; *M. Weick*, a new Japanese with deep red flat florets; *Madame la Marquise de Mun*, a crimson Japanese with a most cumbersome name; *Charlotte de Montcabrier*, *William Clark*, *Rozain Bouchardat*, and *Madame Audigui*, are all excellently represented.

Handsome blooms of incurved are developing, such as *Emily Dale*, *Lord Alcester*, *Hero of Stoke Newington*, *Golden Queen of England*, and the *Rundle* family, while *Anemone* reflexed and *Pompons* contribute their flowers in large numbers. It is almost needless to add that in every other department of this extensive nursery something of interest is to be found, but particularly showy is a house of *Bouvardias*, comprising a selection of the best varieties, the plants sturdy and most profusely flowered.

THE FLOWER GARDEN IN WINTER.

THE time has now arrived for clearing the flower beds of their summer occupants, and a few remarks on how best to replace them for the next few months by something more seasonable may not be altogether out of place or unacceptable at the present time. It used to be the rule, and still is in some places, after the first sharp frost in autumn to denude the flower beds forthwith of the plants which had made them gay for some months previously, then to be manured, dug over, and left to present an unutterably desolate and cheerless appearance till the time of year came round again for filling them with half-hardy plants as before. There is little or no excuse for this state of things, except on the score of first cost in the way of purchasing the young nursery stock of evergreens and shrubs. The majority of the shrubs suitable for the purpose we are now advocating possess a naturally dwarf and compact habit of growth, and owing to the fact of their being lifted twice a year, spring and autumn, retain that habit for a good many years, so that there need be no apprehension or anxiety as to their having to be frequently replaced by fresh purchases.

The chief object of winter bedding should be to relieve that dull monotony which always exists when beds and borders remain unoccupied, rather than the attempt to carry out some elaborate or special design in which startling and telling effect appears to have been the guiding principle; at the same time it ought to be stated that neither design nor effect should be altogether absent from the planter's mind, but hold in restraint whatever temptation or inducement there may be to produce violent contrast of colour, and so forth. Amongst our hardy shrubs there are many pleasing shades of colour, and by them a variety of agreeable contrasts and pleasing combinations may be accomplished by a little forethought and a close study of local surroundings; but above all things strenuously guard against having a variety of hues and shades of colour within a limited space, as often happens in the case of summer-flowering plants, lest by so doing something savouring of the burlesque is produced. Do not plant three or four different kinds of shrubs in the same bed; for

very large beds two kinds ought to be considered ample, and will prove far more effective than would a greater number in the same space.

Supposing a geometrical design of, say, thirty or fifty flower beds was intended to be planted with evergreen shrubs, a beginning might be made by grouping or massing some special subject at stated intervals throughout the design. Given four large corner beds to commence with, each might be planted with, what shall we say? Well, *Mahonia aquifolia* (common *Berberis*), this in its turn to be surrounded by a broad band or edging of *Euonymus argentea variegata*. At other intervals we might have a group of *Aucuba japonica* with an edging of *Kalmia latifolia* or *Skimmia japonica*, and again *Cryptomeria elegans* accompanied by *Thuopsis dolabrata* would prove a pleasing and agreeable contrast. Many other similar instances might be given, but words would altogether fail us in attempting to describe their effect, the better plan being to give a list of shrubs suitable for the purpose, leaving it to individuals to select and choose for themselves at the nurseries such subjects as may appear best adapted to their requirements.

The undermentioned will be found worthy of special notice—viz., *Andromeda floribunda*, *Buxus japonica aurea*, *B. sempervirens aurea*, *B. suffruticosa argenteo-marginata nova*, *Cotoneaster microphylla*, *Cupressus erecta viridis*, *C. lutea*, *C. nana glauca*, *Erica herbacea carnea*, *E. rubra*, *E. vulgaris aurea*, *Euonymus japonicus*, *E. argenteus variegatus*, *E. aureus variegatus*, *E. radicans variegatus*, *Juniperus tamariscifolia*, *Hypericum calycium*, *Ligustrum japonicum*, *Osmanthus aurea*, *O. myrtifolium*, *Pernettya mucronata*, *Retinospora ericoides*, *R. obtusa aurea nana*, *R. plumosa*, *R. plumosa argentea*, *Rhododendron daphnoides*, *R. myrtifolium*, *R. ovatum*, *Taxus baccata elegantissima*, *Veronica decussata*, and *V. Traversi*.

The foregoing list ought to satisfy even the most fastidious—i.e., as regards selections. Certain it is there are many names of shrubs included in the list which possess many good points, and cannot fail to hold their own in the front rank of plants suitable for the embellishment of flower beds during the cold winter months. In some instances purchasing large quantities of the above may be inconvenient, or least undesirable. Admitting such to be the case, there is one alternative, which is far better than empty flower beds for the next six months, and cannot be regarded as one necessitating any great outlay of money—viz., plant them with *Wallflowers*, which of themselves will remain green through the winter, and afford a charming display in the spring. To render them more attractive, each bed might be edged with a broad band of the white-leaved *Stachys lanata* or *Variegated Vinca*. Where *parterre* and carpet bedding are in vogue, the beds may be made attractive, and the number of plants suitable for the purpose is even greater than the one given above. Without wishing in any way to give a too lengthy list, the following may be named—*Antennaria tomentosa*, *Aralis lucida variegata*, *Arenaria balearica*, *Herniaria glabra*, *Hutchinsia alpina*, *Saxifraga affinis*, *S. Bursaria*, *S. Wallacei*, *S. cæsia*, *S. ceratophylla*, *S. muscoides*, *Sedum acre aureum*, *S. Lydium*, *Veronica repens*. Many others might be named, but the above will suffice for our present purpose. In the planting of carpet their beauty and attractiveness will be greatly enhanced by making a liberal use of some of the *Conifers* as "dot" plants, few being better for the purpose than the *Retinosporas*.—J. HORSEFIELD, *Heytesbury*.

CHRYSANTHEMUM SHOWS.

THE following shows have been advertised in our columns, and schedules have been sent to us, from which we have taken the dates:—

NOVEMBER.

5th and 6th, Crystal Palace	16th and 17th, Winchester
8th and 9th, Surrey (Peckham Rye)	" " Brighton
8th, 9th, and 10th, Lambeth	" " Putney
9th, Royal Horticultural Society	" " Southend
" St. Neots	" " Watford
9th and 10th, Kingston-on-Thames	" " Teddington
" Southampton	" " Twickenham
10th and 11th, National Chrysanthemum Society	17th and 18th, Bristol
10th and 11th, Bath	" " Ascot
" " Croydon	17th, 18th, and 19th, Newport
11th Hammersmith	" " York
11th and 12th, Richmond	18th, Hitchin
" " Tunbridge Wells	18th and 19th, Hull
" " Bury	18th, Chiswick; Taunton
" " Portsmouth	19th and 20th, Sheffield
12th and 13th, Huddersfield	20th, Kettering
" " Lewisham	22nd and 23rd, Leeds
" " Cheshunt	23rd and 24th, Liverpool
" " Canterbury	" " Manchester
12th, Reading	24th and 25th, Birmingham
	24th, Clonmel

GARDENS ABOUT PRESTON.

RIBBLETON HALL.

THE residence of Mrs. Birrell is about two miles from Fern Bank, and is approached by a drive with good *Thorn* hedges on each side, and behind them a row of *Sycamores*, which in a few years will form a splendid avenue. The pleasure grounds, which are the principal attraction of this place, were designed and laid out by Mr. Miller eighteen or twenty years ago. A very choice assortment of trees and shrubs were planted, but many of the better *Conifers* are failing. They evidently have their roots in the cold wet clay which is very near the surface in these grounds; in fact, the surface soil is wet and heavy, perhaps the worst soil in this

neighbourhood. This is not the only evil, for those that are growing well are crowding one another. They were planted thickly at first and allowed to grow together, to the ruin of many valuable trees. In spite of these drawbacks, however, the grounds are very effective, but the staff provided is not sufficient to keep them in first-class condition. Roses were robust, and the soil of the Rose garden appeared to suit them. The houses are not numerous or large, and were filled with a general assortment of stove and greenhouse decorative plants. The conservatory is attached to the dwelling, and contained a good example of *Araucaria* and an effective piece of rockwork. Mr. Clark presides over these gardens.

CUERDEN HALL.

These gardens are about twenty minutes' walk from Leyland, and belong to Townley Parker, Esq. They are more extensive than others visited in the neighbourhood. The pleasure grounds are large and varied, being well furnished with *Rhododendrons*, *Conifers*, and forest trees. Amongst the former several varieties of cut-leaved Maples were charming with their beautiful crimson foliage. The best specimen *Conifers* have been planted in a lovely sheltered spot, the ground being undulated, which adds much to their effect. Another portion of the grounds, in the front of an old range of houses, is a small flower garden, backed by evergreens. The beds are mostly filled with foliage plants, such as are generally used for carpet bedding. The *Alternantheras* had grown luxuriantly and had coloured well. This portion of the grounds is varied by the addition of Roses, rockwork in suitable nooks and corners, while the front wall of the houses are draped with *Clematis Jackmanni*, which was charming, with an assortment of other flowering plants to the front. A long border of herbaceous plants leads to this portion of the ground, and was gay with *Hollyhocks* (seedlings), *Dahlias*, *Phloxes*, *Anemones*, *Asters*, and other autumn-flowering plants.

A large portion of ground by the side of the kitchen garden proper is devoted to fruit trees, and is known as the Pear Orchard. Standard Pears predominate, although a fair quantity of Apple trees are associated with them. Several varieties of the former are carrying capital crops of fruit. The walls are extensive and well furnished with fruit trees. The trees are well managed, and some of them were carrying excellent crops. Peaches outside have been a great success, and some of the trees had heavy crops of fine well coloured fruit. A good space within the grounds is devoted to kitchen garden produce, and the crops throughout looked remarkably well. Celery is wonderfully well grown, and I do not remember having seen any in finer condition. A few heads that had been grown in a frame and tied up for blanching were remarkably so.

The glass, however, is the principal feature of these gardens, and is of a very extensive nature, most of the houses being comparatively new, and the dry system of glazing has been adopted. The main range forms three sides of a square and overlooks the kitchen garden. It consists of four vineries, two Peach houses, a large span-roofed greenhouse and stove of the same size and shape. The fruit had all been gathered from the Peach houses, but the trees were promising for another year, having bold flower buds and stout well ripened wood. Most of the fruit from the vineries had also been cleared from the Vines, but those still hanging were of fair average quality. All these houses have remarkably wide paths, and would have a bare unfurnished appearance but for the Ferns and foliage plants which Mr. W. P. Roberts has encouraged to grow from the sides of the walks in the stove and greenhouse. The stove was well filled with a variety of flowering and foliage plants, including Orchids, the whole being clean and healthy, some half-specimen *Gleichenias* being very praiseworthy. Gardenias were planted out in small brick pits in this and another stove, and Mr. Roberts is scarcely ever without blooms. There are only three plants in all, but they are of large size, the largest being 6 or 7 feet through. The plants are not pruned back, but make short sturdy growths which produce flowers all the year round. At the time of my visit the flower buds were in all stages of development with numerous young growths. The roof is furnished with *Allamandas*, *Bougainvilleas*, *Stephanotis*, and similar useful plants.

The greenhouse at the other end of the range was also filled with a general assortment of plants, the sides being gay with the ordinary flowering plants that are generally seen at this season of the year. *Mignonette* is well done, both pyramids and hushes; it would be impossible to have it in better condition than I have seen at Cuerden in the spring of the year on previous occasions. The roof of this house is also draped with choice climbing plants. Very striking was *Acacia Riceana* trained up one of the pillars and then to the right and left. It was full of flower buds, and will shortly be very handsome. This is one of the best greenhouse climbers that can be grown, for its long slender branches hang gracefully from the roof for several feet in length, which when in bloom could not well be surpassed. *Bignonia grandiflora* had also been charming in the same house.

Another range of glass runs parallel with the one described, a wide road running between the two. These houses are constructed on the same principle, to form three sides of a square. Both end houses are span-roofed, the one having the roof furnished with healthy plants of *Maréchal Niel* Rose with decorative plants beneath, while the corresponding one is a stove, and contains a mixed collection of plants. A number of small *Ixoras* were well bloomed, and the foliage plants which predominated were healthy. This house opened into a fruiting Pine stove which contained some particularly fine large fruit, the adjoining house being devoted to successional plants and suckers. These were dwarf and sturdy, and will doubtless in due time also produce fine fruit. Four half-span houses are devoted to Cucumbers, Melons, and Tomatoes. One of the divisions contained a capital crop of late Melons about the size of a

cricket ball. Last year Mr. Roberts had Melons until Christmas, and he is in a fair way for accomplishing the same this year. Some of these houses are at the present time furnished with *Euphorbias*, *Poinsettias*, *Celosias*, and similar plants.

The general condition of the gardens at Cuerden amply testify that Mr. Roberts is an excellent gardener.—W. B.

CHRYSANTHEMUM SHOWS.

EALING.—NOVEMBER 2ND AND 3RD.

THOUGH classes for Chrysanthemums have been provided at South Kensington the show season may be said to have commenced with the Ealing Exhibition on Tuesday and Wednesday last. The summer shows of the Ealing Horticultural Society have been very successful displays, and the autumn exhibitions have steadily improved in a similar manner, the ninth annual gathering, of which the general features are recorded in the following notes, being equally satisfactory. Chrysanthemums formed the principal portion of the display, but classes were also devoted to miscellaneous plants, flowers, Apples, Pears, and vegetables, which, with the non-competing exhibits, occupied all the available space in the Lyric Hall, Broadway. The arrangement was carefully superintended by Mr. W. R. Dean, the Honorary Secretary, and the general effect was all that could be desired.

The date appeared to be somewhat too early for the cut blooms, and the incurved were not up to their usual standard of excellence, rough or undeveloped blooms being noticeable in every stand. With twelve incurved Mr. H. Davis, gardener to H. G. Lake, Esq., Fairlawn House, Chiswick, won first honours for fairly good blooms, his best sample being *Empress of India*, for which the National Society's bronze medal was awarded. Mr. C. Long, gardener to E. B. Ridges, Esq., Orchard Dene, Ealing, took the second place, the best row in his stand including handsome even specimens of *Golden Empress* and *Queen of England*. The third prize went to Mr. H. Collyer, gardener to Mrs. Murrell, The Elms, Uxbridge. For nine incurved the prizes were accorded to Mr. F. Milsom, gardener to W. Lindell, Esq., Manor House, Drayton Green; Mr. A. Wright, Devonhurst, Chiswick; Mr. H. Collyer, and Mr. W. Stanton, gardener to H. Smith, Esq., Griffin Brewery, Chiswick, who had blooms of moderate size, but fresh in colour. The Japanese varieties were better represented, especially in the class for twelve blooms, in which there were seven competitors, Mr. C. Long securing premier honours with handsome specimens, very notable being *Jeanne Delaux*, *Boule d'Or*, *Fulton*, *Mlle. Lacroix*, and *M. Astorg*, the National Society's bronze medal being awarded for a very deep bloom of *Elaine*. Messrs. W. Stanton, H. Collyer, and H. Davis taking the other prizes. The Pompons formed two bright and pleasing classes. In one Thomas Cunningham, Esq., offered two special prizes, three others being contributed by the Society. Mr. F. Milsom was the leading exhibitor, *Marie Stuart*, *La Pureté*, *Cedo Nulli*, and *Astrea* being the best varieties. Mr. E. Fountain followed, his *Sœur Melainie* and *Cedo Nulli* being very good. Mr. H. Collyer and Mr. E. Chadwick were third and fourth. In the Society's class several stands of neat blooms were staged, the best coming from Mr. Collyer, who had *St. Michaels*, *Prince of Orange*, *Rosinante*, and *St. Thais* in capital form. The smaller classes for six and three blooms were well filled, the prizes being taken by Messrs. Elliott, Collyer, F. Milsom, and W. Passey. Mr. C. Long had an extremely fine premier trio of Japanese—*J. Delaux* a wonderfully handsome deep rich bloom, *Madame C. Audiguier*, and *Elaine*. The best stand of six large *Anemone Chrysanthemums* was shown by Mr. W. Passey, gardener to Thomas Nye, Esq., Oakville, Castlebar, Ealing, his bloom of *Gluck* being large and well formed.

The groups of plants were bright and varied, Mr. F. Hicks, Oakhurst, St. Stephen's Road, Ealing, leading with a tasteful arrangement of healthy plants, the blooms large and of good colour. The other prizes were secured by Messrs. J. Baird, G. Fulford, and G. Elliott. Specimen plants were not in first-rate condition, and required a week or more to bring the blooms to perfection. The early *Sœur Melainie* was the most noticeable amongst them, some from Mr. Fulford being loaded with blooms.

Fruit comprised some excellent Grapes from Mr. Hudson, gardener to H. J. Atkinson, Esq., M.P., Gunnersbury House, Acton, two grand bunches of *Alicante* and one of *Alwick Seedling*, beautifully coloured. Mr. Milsom was second with *Lady Downe's*, having large berries, and Mr. F. Baird third. For three dishes of culinary Apples Mr. Chadwick was first, showing *Dumelow's Seedling*, *Emperor Alexander*, and *Minchall Crab*, Messrs. Hudson and A. Wright following. With dessert Apples Mr. Hudson was first for *Gravenstein*, *Scarlet Nonpareil*, and *Ribston Pippin*, fresh, clean, and beautiful fruits, Messrs. A. Wright and Chadwick being second and third. The best dessert Pears came from Mr. Garlandoy, good-sized specimens of *Pitmaston Duchess*, *Beurré Diel*, and *Mons. Leon Leclerc*, the same exhibitor having a large miscellaneous collection of Apples and Pears.

Vegetables were admirably represented by ten collections, Mr. G. Fountain leading with fine clean samples, and Messrs. Sutton & Sons' prizes for four dishes of Potatoes brought sixteen competitors, all showing clean even tubers.

The principal exhibitor in the cut flower classes was Mr. Hudson, who had two excellent collections. Mrs. H. B. Smith had some tasteful wreaths and stands of Chrysanthemums. Mr. J. Roberts, gardener to the Messrs. Rothschild, Gunnersbury Park, Acton, contributed a beautiful group of flowering and fine-foliage plants, and Messrs. C. Lee & Son, Hammersmith, showed large collections of Apples and Potatoes. The cottagers' classes were well filled, and some good produce staged.

LONDON CORN EXCHANGE.—NOVEMBER 2ND AND 3RD.

A SMALL but attractive Show of Chrysanthemums was held at the Corn Exchange, Mark Lane, London, on the dates named, in aid of the Corn Exchange Benevolent Society. The classes, nine in number, were for cut blooms only, the first, with prizes of two guineas and one guinea respectively, being open to all comers, and the others to amateurs engaged in business in London. It was not expected that the Show would be a very large or fine one, but nevertheless it was most creditable, many excellent blooms being shown. The principal prize in the open class, which was for

twelve incurred and twelve Japanese varieties, was won by Mr. J. Bettsworth, gardener to R. Ewing, Esq., Barton Grange, Cheshunt. His stand included good blooms of Prince Alfred, Mrs. Heale, Lord Wolseley, Mademoiselle Lacroix, Elaine, and Oracle. Mr. J. P. Kendall was second. Messrs. F. Woodley and John Ast took the prizes for twelve incurred blooms, and Messrs. A. Macgetson and J. P. Kendall those for twelve Japanese varieties in the amateurs' classes. In the latter classes there were some surprisingly good flowers, and it was evidently a popular one, seven stands being shown. Messrs. T. Wickham Jones, G. Lambert, O. T. Hodges, and J. Spiers were prizewinners in other classes. In an exhibition of this nature high-class flowers are not looked for, but there was evidence in the stands of the exhibitors named and others that the art of growing good Chrysanthemums is not altogether unknown to many amateurs. Two handsome boxes of blooms, chiefly Japanese varieties, were shown by Mr. N. Davis, Lilford Nurseries, Camberwell, London, S.E.

HIGHGATE.—NOVEMBER 3RD AND 4TH.

A most varied and satisfactory Exhibition was opened at Highgate on Wednesday and continued on Thursday, and for such an early date the competition was keener and the quality of the exhibits better than could have been expected. The district includes Finchley and Hornsey, and the Society is well supported by the local residents, twenty-four of whom contribute prizes in special classes. The Show was held in the Northfield Hall, the arrangements being well conducted by the Secretary, Mr. H. Barnby, and Mr. T. Bevan.

The Hall sufficed to hold all the exhibits at the first show held last year, but on this occasion the entries were so numerous that a large tent had to be employed to find space for the additional contributions. In this the groups and most of the specimen plants were arranged, the former being an excellent feature, but the specimens were not in first-rate condition, and it is seldom that they are seen quite satisfactory at local shows. Groups are far more effective and more competitors can enter such classes.

For a group of Chrysanthemums in a space of 60 square feet, Mr. James Brooks, gardener to Walter Reynolds, Esq., The Grove, Highgate, was first with an effective display, the plants compact, healthy, and bearing large brightly coloured blooms. Mr. J. H. Wit y, London Cemetery Company, Highgate, was second with a good group, and Mr. J. Britain, gardener to J. Rickett, Esq., Caen Wood Towers, Highgate, was third, both these having well arranged groups but smaller blooms. Mr. W. Theobald, gardener to A. Goslett, Esq., J.P., West Hill, Highgate, had the best six plants, Japanese varieties, well flowered even specimens, Mr. Britain being second with taller plants. In the class for six incurred, Messrs. J. Brooks, W. Theobald, and C. Shepherd, gardener to Mrs. Horwood, South Grove, Highgate, were the prizetakers. Pompons were well exhibited by Mr. J. Brooks, who had the best six plants, Madam Marthe, Mr. Astie, Mrs. Hutt, and Sœur Melainie, very good. Mr. W. Theobald, was second with smaller but neat plants.

Cut blooms were numerous and well shown. In the open class for thirty-six cut blooms Mr. B. Calvert, gardener to G. Kent, Esq., Southwood, Highgate, was first with an excellent collection, eighteen incurred and eighteen Japanese. The former comprised grand blooms of Alfred Salter, Lord Alcester, Lord Wolseley, Lady Slade, Nil Desperandum, and Prince Alfred, while amongst the Japanese were Criterion, Curiosity, Comtesse de Beauregarde, Joseph Mahood, Mons. Astorg, and Mons. Tarin, very good. Mr. J. Britain was second with fresh but smaller blooms. With twenty-four incurred Mr. Calvert was first, staging fairly good even blooms, Mr. Britain following with rather rougher examples. Messrs. J. Britain, B. Calvert, and T. Taylor were the prizetakers in the class for twelve Japanese, all showing very satisfactory collections. Mr. W. Theobald had an excellent stand of twenty-four Japanese, for which he secured the premier honour; Mr. J. Britain followed closely: Mr. B. Calvert being third. Mr. T. L. Turk was first with six Japanese, having Val d'Andorre wonderfully fine. Incurred were not so good; Mr. T. L. Turk, W. Theobald, and H. Neary securing the chief prizes. Mr. W. Morley's prize for twenty-four Japanese blooms brought three admirable collections. Mr. J. Brooks was first with large blooms of good substance and bright colours; Mr. Theobald took the second place with rather smaller blooms, and Mr. J. Britain was third. Mr. G. Kent's prizes for six blooms of one Japanese variety brought six competitors, Mr. W. Theobald winning the first place with magnificent blooms of Madame C. Andiguier, large and of a most delicate colour. The second and third awards were secured by Mr. J. Brooks and Mr. T. Turk, gardener to T. Boney, Esq., Cholmeley Lodge, Highgate, for good blooms of Elaine. Mrs. Crossley's prizes for twelve Anemone blooms brought three good collections from Messrs. W. Theobald and J. Britain, who were respectively first and second. A class in which Messrs. William Cuthush & Son, Highgate, offered prizes for twenty-four blooms, incurred or Japanese, exhibited with foliage as cut from the plants, was very interesting, five good collections being entered, and the awards were secured by Messrs. W. Theobald, Brooks, and Britain, all showing fairly good blooms.

Mr. C. Catling's prizes for bouquets of Chrysanthemums were won by Mr. T. Horsman, gardener to A. J. Reynolds, Esq., Northfield, Highgate, Mr. W. Theobald, and Mr. B. Calvert, the first being a tasteful combination of varied colours. Mr. E. G. Shelton contributed prizes for dinner-table decorations with Chrysanthemum blooms, Mr. W. Wilkinson, gardener to W. W. Webster, Esq., Highgate Rise, being first with three small stands, light and graceful. Mr. H. Neary and Mr. W. Neary followed with larger and heavier productions. Mr. B. S. Williams, Upper Holloway, offered prizes for six table plants, Mr. B. Calvert winning the first with neat Aralias and small Palms. Mr. H. Eason, gardener to B. Noakes, Esq., North Hill, Highgate, followed with Crotons, Dracenas, and Aralias, Mr. W. Theobald being third for larger plants.

Fruit comprised Apples, Pears, and Grapes in good condition, vegetables being also numerous, the cottagers' exhibits occupying much space. Mr. W. E. Boyce, Archway Road, Highgate, and A. R. Rundell, Esq., showed collections of blooms not in competition. Messrs. W. Cuthush & Son Highgate, had a group of Pernettyas and foliage plants. Mr. B. S. Williams had a pretty group of flowering and fine-foliage plants. Mr. J. Douglas, gardener to Francis Whitbourn, Esq., Great Garies, Ilford, showed three good bunches of Grapes—Snow's Muscat, Royal Vineyard, and Mrs. Pince.



KITCHEN GARDEN.

FORCING VEGETABLES.—The early part of November is a good time to begin forcing vegetables for supplies at Christmas and midwinter, but it may be well to remind the inexperienced that forcing in the short days is difficult work, and unless those who take it in hand have suitable appliances the forcing operations will not, as a rule, prove satisfactory. Heat is the leading agent in forcing, and where plenty of this is at command there is no reason that forcing in November or any other spring month should be a failure. There are many who may force vegetables well who do not live in large gardens, or who do not possess range after range of glass houses, as it is by utilising small spaces and securing crops from odd corners that much valuable produce is secured, and this is undoubtedly profitable forcing. We have known many good dishes of Rhubarb, Seakale, and Asparagus to be cut at midwinter from a light or two over a flue, and it is in such places as these that forcing should be done as well as in forcing houses, always provided heat can be secured.

Asparagus.—This is a delicious vegetable throughout the winter, and when forced early gives much satisfaction. It is amongst the easiest of all roots to force, and with strong well-matured roots, and a bottom heat of 70°, the produce may be cut in three weeks after the roots have been put in. Roots can never be forced profitably until they are four years old at least, and there is no limit after that. It is important that they are well matured and have grown freely during the past season. They may either be forced in a hotbed or the bed of a Cucumber pit where there is bottom heat. We force ours in the latter position, and it does well. Care should be taken in lifting the roots that they are not cut or injured, as the roots are very fleshy and easily broken. A dozen good roots will give much produce, and if some roots are put in every ten days two or more dishes will be cut weekly. In placing them in to force the roots may be packed together on the bed closely, and they should be covered with some rich light soil. Supply water at a temperature of 90°, and with a steady bottom heat growth will soon begin. It is sometimes forced in the dark, and the produce is white, but heads of this kind are not so well flavoured as those grown in the light, and we always force our Asparagus in as much light as possible. Top heat is not very important, as they will grow in a temperature of 55° or 60°, and a little air may be admitted on fine days.

Rhubarb.—We have tried many ways of forcing it for Christmas, but now confine ourselves to one, and that is very simple. The roots are not lifted, but a cask or large box is turned upside down over the crowns. A hole is made in the upper end to allow the steam to escape, and then the box or cask is surrounded with a hotbed. This may consist of a mixture of manure and leaves and anything that will ferment. The material should extend 3 or 4 feet beyond the cask, and it should be made into a firm heap about 4 feet in depth. This warms the soil about the roots and induces the growths to spring away freely and strong. If two or three roots are covered every three weeks or so a constant supply will be kept up. Should the heat decline before the growth is finished place a quantity of fresh manure round the cask to produce a greater heat, and in frosty weather the whole may be covered with straw or bracken. If the casks are left on until the spring so as to protect the crowns the roots will grow afresh in summer, and show little indication of having been forced at such an unseasonable time.

Seakale.—Seakale may be had in December by treating it in the same way as the Rhubarb, or large pots may be used for placing over the crowns. It is only good when blanched, and should always be kept in the dark, but the interior of the pots must be ventilated a little to prevent the growth decaying; but for midwinter forcing we prefer the plan of lifting the roots, placing a number of them in a 10-inch or 12-inch pot, and plunging this in bottom heat in a hotbed in the Mushroom house or any kind of pit. This induces quick and free growth, and it is more at command when treated in this way than when in the open. The earliest should only be lifted at present, and as soon as the leaves have withered from the crowns a lot of the roots may be taken up and potted, and some of these may be put in now and again as the demand requires. They do not require much water at the root when being forced, as the roots are not very active, but if the crowns are preserved after forcing they will be found useful for propagating in spring.

FRUIT FORCING.

PEACHES AND NECTARINES.—*Earliest Trees.*—Ripe fruit being required in late April or early in May, commence forcing about the middle of this month—that is, close the house, but use no fire heat the first fortnight unless the weather is frosty. Give a thorough soaking of water to the inside borders, and if the trees are weakly afford liquid manure, but not too strong, which will tend to cause activity at the roots, and conduce to a more vigorous expansion of the buds. The house may be kept close, and the trees syringed in the morning and afternoon of fine days, admitting air abundantly whenever the weather is bright, employing no fire heat, as before stated, only to exclude frost, for the slower the trees are excited the stronger will be the blossom. The outside border

must be well protected with litter or leaves, and if tarpaulin or shutters are put on the top it will be useful in preventing the soil becoming chilled by heavy rains and snow.

Succession Houses.—All but the latest trees will have the leaves down, but if not they must not be removed until they part freely from the trees. When the leaves are all down unfasten the trees from the trellis, prune them, thoroughly cleanse the house, and paint the woodwork and trellis, leaving room for the branches to swell in securing the trees to the trellis after they have been dressed, as tight-tying is one of the most prolific sources of gumming. Remove the surface soil down to the roots, and supply fresh loam rather stiff, containing about a twentieth part of bone-meal, and a similar proportion of wood ashes. Give a thorough supply of water to inside borders, or remove the roof lights, and allow the borders to become thoroughly soaked by the autumnal rains. Any lifting, root-pruning, or the introducing of fresh trees should be performed at once, the planting being now proceeded with, or as soon as the leaves are nearly off the trees. Trees for planting in houses are best three years or more trained and prepared for lifting by annual or biennial lifting. Such trees lift with an abundance of fibres, and being carefully planted they can be forced very well the first year if not being started before the new year, not brought on too rapidly, and not overcropped. It is always best to select such trees in preference to planting young trees, but if young trees must be planted select such as are well furnished and not very strong in the wood.

Late Houses.—As soon as the fruit is gathered cut out the non-extension wood that has borne fruit, as nothing is so prejudicial as too much wood, especially in late houses. If the trees are not ripening the wood properly form a trench about one-third the distance from the stem the trees cover in height of trellis, and down to the drainage, so as to detach the roots. This will check the tendency to a late growth, and induce the ripening of the wood. The trench may remain open for a fortnight, and then be filled up, making quite firm. Remove the surface soil in the undisturbed part down to the roots, and replace with fresh material made firm, giving a good watering. The trees will push fresh roots, and the trees invariably set the blossom well after operations of this character.

FIGS.—Early Forced Trees in Pots.—Trees that are forced for affording fruit at the close of April or early in May will now need to have the wood brushed over, using soft soap $\frac{1}{2}$ lb. to a gallon of water brought to the consistency of cream by adding flowers of sulphur, being careful when using the mixture not to rub off the young fruit, the shoots of the current year needing to be carefully handled. Very little pinning will be necessary, the trees having been regularly pinched or stopped during the growing season, but if the growths are too crowded or irregular they may be thinned to render the trees symmetrical. Wash the woodwork and walls with scalding water, and the walls afterwards with quicklime and sulphur. A mild bottom heat is essential to a successful swelling and perfecting the earliest crop; the pots therefore must be raised up on loose bricks pedestal fashion in the position they are to occupy, and the pit filled with Oak or Beech leaves pressed firmly. If the pit be not more than $2\frac{1}{2}$ feet deep, a third of stable litter may be added. Care must be taken to avoid overheating, not allowing the heat about the pots to exceed 65° until growth takes place. The house should be kept close and moist by sprinkling twice a day in bright weather, employing fire heat to maintain a temperature of 50° at night, 55° by day, and with sun heat 60° to 65° . If the soil in the pots be dry, a thorough soaking of water must be given. Forcing operations need not begin until the middle of the month.

Early Forced Trees.—Trees planted out in borders intended for early forcing should now be untied from the trellis and pruned. Those with the roots restricted to small borders will require little more than thinning out the shoots where too crowded, but those not having the roots restricted will require a hard pruning at the upper part of the trellis, allowing room for the growth of the branches, forking the surface of the border, slightly removing the loose material, and apply a surface dressing of fresh loam with some half-inch bones intermixed, and not more than 2 inches thick, and then apply a top-dressing of decayed manure, but not very highly decayed, 2 to 3 inches thick, and give a good watering. Ventilate fully at all times, except when frost prevails, and at such times heat should be used to exclude it.

Succession Houses.—Let the trees be pruned, cleansed, and put into thorough order. Give attention to trees that have been infested with insects. The house must have the woodwork and walls scalded with hot water, keeping it off the trees, and well wash these with a warm soapy solution, using a brush, which will do much to dislocate the insects, especially scale, and render more potent the insecticide, which should be applied after the trees become dry from washing with the soapy water. Complete any root-pruning, lifting, &c., remembering that Figs with the roots restricted or confined to limited space are more manageable and fruitful than those with an unlimited rooting area. Any unfruitful trees must be severely root-pruned, and the roots restricted to moderate-sized borders, depending more upon active feeders near the surface encouraged by mulching than a large extension of roots. Make the soil firm, employing one-sixth old mortar rubbish, grit being furnished by road scrapings.

Late Houses.—The trees in these should be attended to on lifting or root-pruning if showing a tendency to over-luxuriance, or have cast the fruit in an unaccountable manner. Fig trees grow too luxuriantly in large borders, therefore they should have them restricted, as with the roots in borders of limited extent they are more under control and can be fed according to their requirements. When the leaves fall the trees must

be unloosed from the trellis, and being tied together they should be made safe with some dry straw or fern amongst them. Trees in cool houses suffer quite as much from cold as trees against walls outdoors. In houses that have means of heating the protection will not be necessary.

THE BEE-KEEPER.

MATTERS OF IMPORTANCE TO BEE-KEEPERS.

THE rapid strides made by bee-keeping during the last few years are, it is much to be feared, bringing with them the evils necessarily attendant upon an unhealthy growth; the too speedy development of the industry nursed by manufacturers of appliances is beginning to be felt, and many years must elapse before a good sound healthy state is again obtained. The profits of bee-keeping are dwindling down each year, and, as in Lancashire and our large manufacturing districts, new men are continually entering a business which can with difficulty support those who have already invested their capital and time in the work. The rage for novelties and expensive luxuries has increased the cost of production, while injudicious pictures of future profits have induced many to enter into bee-keeping on a large scale, only to find honey a drug in the market and scarcely saleable in some localities at any price at all.

It is always a pleasure to us to see any man taking up bee-keeping in a moderate and sensible manner, but it is quite the reverse when a man who is just able to manipulate a hive thinks himself a practical bee-keeper and sets up a large apiary. It is sad because it is rarely possible for him to make a fair profit on the undertaking, and yet he is, even if producing his honey at a loss to himself, causing his neighbours who keep bees only on a small scale loss also, by reducing the price of honey and glutting the market. It is the appliances—the manufacture and sale of them—that support these men; for, finding themselves incapable of managing their apiary so as to yield a profit from bee produce, they turn their hands to the more easy and certain production of hives, frames, and extractors. The man who really finds bee-keeping a profitable and remunerative industry is he who spends least and uses his common sense most; who is neither niggardly nor luxurious in his management, but preserving a happy medium; neither increases the number of his stocks beyond what he is well able to care for, nor yet invests in new hives of every conceivable style or price, but finding out what kind of honey is most easily saleable at the best price, turns his mind to the production of such honey only. And here I may be permitted to say that, although every fair man desires to see each one have his due, it hardly seems to be either necessary or politic for inventors to be continually squabbling in print over their inventions. In the first place, most of these inventions are mere revivals of old methods or appliances long ago discarded in favour of a more practical management, and in the second place it is of no material consequence who has the merit of the invention so that we have the use of it.

Another point of great importance to all concerned in agricultural industries is the present high rate of charges prevailing throughout England, and the low freight paid upon goods imported from abroad. That honey can be profitably imported from America, Canada, and other countries is not strange, when it is considered that the cost of carriage is trifling to what the home producer has to pay when he sends his honey or other produce to the market. Either railway companies must be compelled to lower their charges, or the charges on imported produce must be raised, or a tax be put upon all goods—not raw material—imported from abroad. It may be taken for granted that protection will not, at any rate for a long period, be revived, nor will the cost of carriage for imported goods be raised, and for this

reason—i.e., that the consumer would object to any such change, because the price of the commodity would be raised in proportion.

To enable English producers to compete fairly with the foreigner rates of carriage must be very materially reduced, and greater facilities offered for the transit of perishable goods at lower rates without any increased risk. Farmers, market gardeners, bee-keepers, every branch of our agricultural population is affected and intensely interested in any change that may be effected either by a voluntary effort on the part of the companies or by compulsion. A united attempt must be made, and soon, to accomplish this most necessary object, and to relieve the agricultural industries of this country from the great cost of transit with which they are at present so heavily handicapped. If the companies are unwilling to meet the emergency it will be matter for consideration whether the Government should not buy out the companies, and by getting the lines in their own power work them with a view to the benefit of the country in general.

It may seem somewhat of a digression to have thus discussed so great a question, but the importance of the subject is so evident and so necessarily prominent at the present time that it may be useful, while endeavouring to show where the secret of failure and success lies, to point out how it is that our colonial cousins can so easily compete with us in an enterprise which we ought without difficulty to retain almost exclusively in our own hands.—FELIX.

HOME MARKETS FOR OUR HONEY.

A FEW facts may be useful to dispose of Mr. Geo. Walker's statements on page 330. The "clique" is represented, he says, by 400 shareholders who hold 6000 shares. Now there are somewhere over 10,000 members in the British Bee-keepers' Association, and yet out of this vast number only a paltry 400 have had confidence enough in the undertaking to take shares, and of these gallant 400 who have entered the breach there are no doubt a very goodly number of "leading lights" and influential members of the British Bee-keepers' Association; so that, after all, the clique is a clique, and a very small clique too.

In the *British Bee Journal* of 15th March, 1885, I find the following:—"The expenses, though managed with strict economy, must be proportionately larger with a small capital than with a large one, and as a result a smaller price will have to be paid for honey to ensure even a small profit."

Again, in the issue of the same paper for 5th May, 1885, a report is given of the first meeting of the British Honey Company. The Chairman, among other things not of present importance, said: "The directors are pleased to note that the shares are taken up by persons of all classes—from the capitalist who looks to the money profit of his investment down to the humble cottager." Also, "The directors have determined that in purchasing honey a preference shall be given to honey offered by shareholders, provided that in price and quality the terms of purchase are equally favourable." Again: "With regard to the lowering of the price of honey the directors did not expect to lower it beyond a point at which it would be remunerative to the producer."

Do capitalists, "who look to the money profits," generally invest in an undertaking which is only, some people would have us believe, a benevolent scheme for benefiting the producer, and not with a view to good profit? Is any sane *bonâ fide* bee-keeper likely to support a scheme, or do otherwise than strongly oppose it, when he is told that owing to the capital of the undertaking being small the prices offered for honey must be lower than there is any need for them to be except for the purpose of giving a profit to the shareholder? Does anyone imagine that by "dangling" the preference which was to be given to shareholders' produce, together with the inducement offered to invest by telling those who had not hitherto done so that "capitalists who look to money profits" had taken shares, did not have the desired effect?

Again, the desired result has not been obtained, for Mr. Geo. Walker says that after purchasing £1000 worth of honey the purchasing powers of the Company were unequal to any further purchase; and Mr. John Peel says that, writing for a quotation, he never had a reply at all.

It is only necessary to notice one more statement. It is this: "What we have done is to increase to a very great extent the demand for British honey, and if this goes on increasing it will lead to two results—first, to make the sale of honey very much easier to the producer . . . and second, to increase the sale of honey."

It hardly needs a honey company to increase the sale of honey if such an increase is to be at the expense of a reduced price. Most individuals could do the same, and no doubt the sale at such low prices will be rapid if the producer is weak enough to play into the hands of his enemies; but how making the sale easier is to increase the value of honey in view of the powers to purchase foreign honey taken by the company it seems hard to say, since upon the least strengthening of prices recourse may be had to foreign supplies, and if the supply is unequal to the demand such recourse will be had, otherwise why were the "powers"

taken at all? Therefore, reducing the price of honey now to increase its value say five years hence is but a small consolation in the face of these "powers," which will keep the English producers bound helplessly down to reduced prices if they do not use their common sense and act independently of any such scheme.

The thanks of all bee-keepers are surely due to Mr. Geo. Walker for losing "professional time" and spending "some pounds in railway fares." Possibly some other bee-keepers have done the same.—FELIX.

TRADE CATALOGUES RECEIVED.

Thomas S. Ware, Hale Farm Nurseries, Tottenham.—*List of Specialties, 1886 (illustrated), and Catalogue of Roses.*

R. H. Vertegans, Chad Valley Nurseries, Birmingham.—*Catalogue and Circulars of Specialties.*



* * All correspondence should be directed either to "THE EDITOR" or to "THE PUBLISHER." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

Address (R. C.).—The address you require is Messrs. Letts, Son & Co., Printers, New Cross, London, S.E.

Botanical Names (J. T. M.).—Expressed phonetically the pronunciation would be—I-re-day-se-e, with the accent on the third syllable.

Chrysanthemum Bloom (F. C. B.).—The bloom of Maiden's Blush is very good, and with the accompanying foliage indicates that the plant is admirably grown. We shall be glad to see a copy of what you propose.

Chrysanthemums not Opening (J. G.).—The specimens received were very healthy. The precise cause of the refusal of several blooms of the Queen family to develop their central florets is not ascertained; in the example before us the peduncle of the bloom is somewhat weak, and the flow of sap on that account must be to some extent arrested. The bloom of *Sœur Malanie* is of good average quality. We have seen several larger and thousands smaller.

The Eucharis Mite (*Inquirer*).—This pest is certainly not "indigenous to North-East Lancashire," but is prevalent in many parts of the country. It is very destructive and difficult to eradicate without injuring the plants. The method that has been described in the *Journal* was founded on practice, and plants that were once in a miserable plight are now healthy; but all persons do not succeed alike in the application of a remedy, not taking equal care in the preparation of what may be suggested, and of the plants. We cannot tell what particular insects your plants may be attacked with from your vague description of them.

Lapagerias (G. H. B.).—Spring is, as a rule, the best time for repotting these plants. They grow admirably in firm fibrous peat, such as is used for Azaleas, adding a liberal quantity of broken charcoal, oyster shells, and sand. Some persons add a third part of loam if it is light, firm, and full of fibre. A rather firm, yet "springy" mass, is what these plants delight in, very liberal drainage being provided so that water can be given copiously without rendering the compost sour. We have seen them luxuriate in two parts peat and one part loam, and grow equally well in peat alone, so much depending on judicious applications of water and general management.

Mushroom Bed Unproductive (J. W. H.).—Manure from stables in which the horses have many Carrots and much medicine is not favourable to the production of Mushrooms; still, if the spawn is running in your bed you may possibly have a light crop. In such a case we should not expect Mushrooms until about eight weeks after spawning, and then not many, nor large. You state the quantity of old potting soil you used with the manure, but not the quantity of the latter, so your information is no guide to us in forming an opinion as to the composition of the bed. If it is moist, that is sufficient, and it can be kept so by using damp covering material for preventing the escape of moisture from the bed. If you act on the instructions given in "Mushrooms for the Million," you will have abundant crops, but not, of course, with unsuitable materials.

Dressing Ground for Roses (*Experimentalist*).—The application of artificial manure now would be of service, especially if mixed with fresh soil and well incorporated with the bed. A much better plan, however, would be to trench the ground as deeply as the good soil allows, loosening that beneath or at the bottom of the trenches, which will admit of the freer passage of the water through the soil, and the air so essential to rendering the constituents of the soil available as food for plants. Some solid manure, as stable or farmyard, would be most desirable mixed with the soil in

trenching, but failing that you may use the artificial manures advantageously. We prefer, however, to use them as a top-dressing, or mixed with the top 6 inches of the soil, and in spring.

Glass for Greenhouse (Pershire).—As you intend to have a Vine in the house you could not have anything better than 21-ounce sheet glass third quality of British manufacture. The Belgian glass, though cheaper, is not nearly so good or cheap in the end. The 21-ounce glass need only be used for the roof; the front or side lights may be glazed with 15-ounce, which will make a little difference in the cost. All should be sheet or clear glass, rough plate not being suitable for general purposes. We should prefer a check-end saddle boiler, as being easily managed and standing wear and tear well. By all means have a Vine or two. The Vine is the most useful of all greenhouse climbers, and when not grown too thickly, say a rod every 6 feet apart, does not materially interfere with the growth of plants. You could not have a better Grape for your purpose than Black Hamburgh, and if you require a white one Chasselas Vibert or Foster's Seedling would answer, the latter keeping some time after being ripe.

Carpet Bedding (Rosa).—No doubt your garden (of which you sent a plan) would look well with the beds filled in the "carpet bedding style;" but carpet beds cannot be made as "bright as possible" without Alternantheras, and these, of which you would require a great number, cannot be wintered in a greenhouse, as they require a temperature of 60° for their healthy preservation. It is quite impossible for anyone to tell you how to arrange the beds without knowing the skill and means at your disposal for raising and preparing plants. Flowering plants are not employed in the best carpet beds, and you would require several thousands of suitable kinds to furnish your garden. Perhaps you cannot do better than send a shilling to Mr. Graham, Hampton Court Gardens, Kingston-on-Thames, and ask him to send you his manual, which contains several designs, and indicates the kinds of plants employed in the beds. We do not supply methods of planting, but examine any that may be submitted, and suggest possible improvements, as obviously it would be useless our saying how a series of beds should be filled when the plants named are not at hand, or cannot be conveniently obtained, for occupying them.

Names of Fruits.—The names and addresses of senders of fruit to be named must in all cases be enclosed with the specimens, whether letters referring to the fruit are sent by post or not. The names are not necessarily required for publication, initials sufficing for that. Only six specimens can be named at once, and surplus fruits beyond that number cannot be preserved. (J. B.).—We would willingly oblige you if we could, but fruit cannot be preserved that is not sent in compliance with our published conditions. It is absolutely necessary that letters should be placed in boxes of fruit sent to be named. If we have a dozen boxes of fruit without the senders' names, and as many letters by post, simply asking us to name the specimens, it is oft impossible to tell to which boxes the letters apply. We are sorry your letter of description arrived too late. (A. J. Brown).—Beurré Superfin. (N. E. Owen).—Apple Margil. The Pears appear to be all one sort, which we should say is Beurré Clairgeau. (E. M.).—1, Groom's Princess Royal; 2, Not known; 3, Beurré Capiaumont; 4, Nouveau Poiteau; 5, Chaumontel; 6, Not known. (H. G. B.).—1, Ecklinville; 2, Hawthornden; 3, Beurré Clairgeau; 4, Passe Colmar; 5, Not known; 6, Cockle's Pippin. (G. S., Kent).—1, Golden Pearmain; 2, Cobham; 3, Hampden's Bergamot; others not known. (A. L.).—1, Maréchal du Cour; 2, Durondeau; 3, Uvedale's St. Germain; 4, Hacon's Incomparable; 5, Not known; 6, Beurré Bachelier. (W. M. Yardley).—Your fruit is in so filthy a condition from being packed with soot that we cannot handle it.

Names of Plants.—We only undertake to name species of plants, not varieties that have originated from seed and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in firm boxes. Slightly damp moss or soft green leaves form the best packing, dry cotton wool the worst. Not more than six specimens can be named at once. (A. B.).—The flower was so much decayed that it was quite unrecognisable. (G. G.).—1, Helianthus grosse-serratus; 2, Geranium phœum var. lividum; 3, Lysimachia clethroides; 4, Polygonum vacciniifolium; 5, Chrysanthemum maximum; 6, Chrysanthemum latifolium. (N. T.).—The Orchid is a variety of Cattleya Loddigesi; the Begonia we cannot recognise by the leaf sent.

COVENT GARDEN MARKET.—NOVEMBER 3RD.

LARGE supplies of Nova Scotia and Canada Apples to hand, realising moderate prices. Home consignments light. A cargo of St. Michael Pines to hand.

FRUIT.

	s.	d.	s.	d.		s.	d.	s.	d.	
Apples 1 sieve	1	6	to	4	0	Melon each	0	to	0	0
" Nova Scotia and						Oranges 100	6	0	12	0
Canada, per barrel	12	0	21	0		Peaches per doz.	6	0	12	0
Cherries 1 sieve	0	0	0	0		Pears dozen	1	0	2	0
Cobs 100 lb.	60	0	0	0		Pine Apples English .. lb.	3	0	4	0
Figs dozen	0	6	0	9		Plums 1 sieve	1	0	2	0
Grapes lb.	0	6	3	0		St. Michael Pines .. each	4	0	6	0
Lenions case	10	0	15	0		Strawberries per lb.	0	0	0	0

VEGETABLES.

		s. d.	s. d.			s. d.	s. d.			
Articbokes	.. .. dozen	1	0 to 0	0	Lettuce	.. .. dozen	1 0 to 1 6			
Asparagus	.. .. bundle	0	0	0	Mushrooms	.. .. punnet	0 6 to 1 0			
Beans, Kidney	per bushel	2	0	3	0	Mustard and Cress	punnet	0 2	0 0	
Beet, Red	.. .. dozen	1	0	2	0	Onions	.. .. bunch	0	3	0 0
Broccoli	.. .. bundle	0	0	0	0	Parsley	.. dozen bunches	2	0	3 0
Brussels Sprouts	.. 1/4 sieve	1	6	2	0	Parsnips	.. .. dozen	1	0	2 0
Cabbage	.. .. dozen	1	6	0	0	Potatoes	.. .. cwt.	4	0	5 0
Capsicums	.. .. 100	1	6	2	0	,, Kidney	.. cwt.	4	0	5 0
Carrots	.. .. bunch	0	4	0	0	Rhubarb	.. .. bundle	0	2	0 6
Canliflowers	.. .. dozen	3	0	4	0	Salsafy	.. .. bundle	1	0	1 0
Celery	.. .. bundle	1	6	2	0	Scorzonera	.. .. bundle	1	6	0 0
Coleworts	dcz. bunches	2	0	4	0	Seakale	.. .. per basket	0	0	0 0
Cucumbers	.. .. each	0	3	0	4	Shallots	.. .. lb.	0	3	0 6
Endive	.. .. dozen	1	0	2	0	Spinach	.. .. bushel	3	0	4 4
Heros	.. .. bunch	0	2	0	0	Tomatoes	.. .. lb.	0	2	0 6
Leeks	.. .. bunch	0	3	0	4	Turnips	.. .. bunch	0	4	0 0

PLANTS IN POTS.

	s.	d.	s.	d.		s.	d.	s.	d.
Aralia Sieboldi ..	dozen	9	0	to 18	0	Ficus elastica ..	each	1 6	to 7 0
Arbor vitæ (golden)	dozen	6	0	9	0	Fuchsia ..	per dozen	0	0
" (common)	dozen	6	0	12	0	Foliage Plants, var.	each	2	0
Asters	per dozen	6	0	9	0	Heliotrope ..	per dozen	0	0
Bedding Plants, var.	doz.	0	0	0	0	Hydrangea ..	per dozen	0	0
Begonias	dozen	4	0	9	0	Ivy Geraniums	per dozen	0	0
Chrysanthemum ..	dozen	6	0	12	0	Lilium anatum	per doz.	0	0
Cockscombs	per dozen	0	0	0	0	Lobelia	per dozen	0	0
Cyperus	dozen	4	0	12	0	Margnerite Daisy	dozen	6	0
Dracæna terminalis,	dozen	30	0	60	0	Mignonette ..	per dozen	3	0
" viridis	dozen	12	0	24	0	Musk	per dozen	0	0
Erica, various ..	dozen	9	0	12	0	Myrtles	dozen	6	0
" hyemalis	per dozen	18	0	24	0	Palms, in var. ..	each	2 6	21
" gracilis	per dozen	9	0	12	0	Pelargoniums, scarlet,	doz.	3	0
Euonymus, in var.	dozen	6	0	18	0	Pelargoniums	per dozen	0	0
Evergreens, in var.	dozen	6	0	24	0	Primula sisensis	per doz.	4	0
Ferns, in variety ..	dozen	4	0	18	0	Solanums	per doz.	9	0

CUT FLOWERS.

		s. d.	s. d.			s. d.	s. d.
Abutilons ..	12 bunches	2 0	to 4 0	Lily of the Valley, 12 sprays	0 0	to 0 0	0 0
Arum Lilies ..	12 blooms	4 0	6 0	Marguerites ..	12 bunches	2 0	6 0
Asters	12 bunches	6 0	8 0	Mignonette ..	12 bunches	1 0	3 0
Azalea	12 sprays	1 0	1 6	Myosotis	12 bunches	1 6	3 0
Bouvardias ..	per bunch	0 6	1 0	Nareiss, Paper-white, bunch	0 4	0 6	
Camellias ..	12 blooms	3 0	6 0	Pelargoniums, per 12 trusses	0 9	1 0	
Carnations ..	12 blooms	1 0	3 0	" scarlet, 12 trusses	0 3	0 6	
"	12 bunches	4 0	9 0	Roses	12 bunches	4 0	9 0
Chrysanthemums	12 bches.	4 0	9 0	" (indoor), per dozen	0 6	2 0	
"	12 blooms	1 0	6 0	" Tea.. ..	dozen	0 9	1 0
Cornflower ..	12 bunches	0 0	0 0	" red	dozen	0 0	0 0
Dahlias	12 bunches	2 0	4 0	Parma Violets (French)	4 0	5 0	
Epiphyllum ..	doz. blooms	0 6	0 0	Primula (single) per bunch	0 8	0 9	
Eucharis	per dozen	3 0	6 0	" (double) per bunch	0 9	1 0	
Gardenias ..	12 blooms	3 0	5 0	Pyrethrum ..	12 bunches	3 0	6 0
Gladioli	12 bunches	0 0	0 0	Stephanotis ..	12 sprays	4 0	6 0
Hyacinths, Roman,	12 sprays	3 0	4 0	Stocks, various	12 bunches	0 0	0 0
Lapageria, white,	12 blooms	2 0	4 0	Tropeolum ..	12 bunches	1 6	2 0
Lapageria, red ..	12 blooms	1 0	2 0	Tuberose	12 blooms	0 6	1 0
" longiflorum, 12 blms.		3 0	6 0	Violets	12 bunches	1 0	0 0
Lilac (white), French, bunch	6 0	8 0		" Czar, French, per bunch	1 3	1 9	



SHEEP-FOLDING.

FOLDING upon old pastures is done to best advantage from the present time throughout winter till next March. In November and December the ewe flock may be kept in such folds, and while there are no hard frosts Turnips may be used for them in moderation. We are now so using White Turnips, pulling and carting them to the folds with the tops left on. If severe frost sets in we refrain from using Turnips from the open fields, for there can be no doubt that abortion is frequently caused by ewes eating large quantities of roots either frozen or so cold that the temperature of the body is seriously reduced, and the lambs are either killed before birth or abortion occurs. Weak delicate lambs are also an outcome of improper diet, and knowing as we do how great is the risk of losses from the use of unwholesome food, all possible care is taken that the ewes run no such risk from the present time till the lambing. Whether Turnips are used or not, some crushed Oats may be given them with advantage for full six weeks before lambing time, and if the grass is bare Pea straw in cribs, and Oat straw chaff mixed with the Oats. Unthreshed Oats cut into chaff with the straw makes one of the best and most economical articles of diet for folding sheep. Not only for the sake of the sheep, but also for the improvement of the pasture is high feeding desirable in the folds. Old sheep drafted from the breeding flock immediately after last lambing season are now, after a four-months run upon meadows, Clover, and the corn stubbles, sufficiently improved in condition to be ready for folding with a liberal allowance of roots, Cabbage, crushed corn, and chaff, and they will enrich the pasture sufficiently to ensure a good crop of hay next season.

Old pasture that is foul with weeds and contains only poor grasses indigenous to the soil, much as the grass is invigorated by folding, can never afford results at all equal to such as are possible from a new pasture of the best grasses and Clovers. In the one we may obtain a vigorous growth

of herbage, but it will be only moderately nutritious; in the other we are certain of a full crop of the most nutritious mixture of sweet and wholesome herbage, consisting of well blended proportions of such grasses and Clovers as have been specially selected for our purpose. It would be well, therefore, before coming to a final decision about folding old pasture, to examine it well, and see if it is really rich enough in good grass and Clover to repay us for the outlay. Our inspection must be close and thorough, for it is not an easy matter to ascertain all about the plants growing in a meadow. For example, we have had a growth of Clover that was positively rampant in a meadow that was said to contain little, if any, Clover among the grass; yet a single dressing of wood ashes saturated with urine was followed by the appearance of plenty of Clover, almost as tall as the grass when it was mown for hay. We had no doubt that the Clover plants were there before the ashes were used, but the plants were mere starvelings, just able to exist but not to thrive, simply owing to poverty of soil. The nitrogen and potash of the saturated ashes acted upon the soil as though a golden key had been applied to unlock its treasures of fertility, or to be correct, we should rather say to store it with the elements of plant food which it lacked.

A trifle, a simple affair indeed, was that dressing of wood ashes saturated with urine, so simple that it could be done by anybody, yet it had not been done, and the Clover had practically been of no use either for hay or grazing. This is just one of those little things of which neglect or use makes all the difference between failure and success. Wood ashes are certainly not hard to obtain, and they can readily be enriched by the household sewage, or by the liquid manure which we so often see wasted as it is suffered to escape from stables, cow sheds, yards, or manure heaps.

If we find enough good herbage in old pasture to lead to the conclusion that it will answer for folding, let us resolve not to waste the sheep manure upon strong-growing perennial weeds, but to eradicate them by uprooting before each new fold is opened to the sheep. Upon many an old pasture can we find evidence of the slovenly easy-going practice which has so long prevailed in farm management. Thistles, Docks, Gorse, Rushes, and Rest-Harrow (*Ononis arvensis*), ought never to be allowed to become established in a meadow, for if they are the expense of getting rid of them is so heavy that it can only be done gradually. At the present time we have much grass land badly infested with Docks and Thistles and about fifty acres overrun by *Ononis*. We are clearing the pastures of these pests surely if slowly, by digging them up, for there is no other sure way of destroying them.

WORK ON THE HOME FARM.

Never have we had better weather for the sowing of winter corn. There has been enough rain to make the ploughing light, and the soil has been ploughed in excellent condition for a fine seed bed. Light Barley harrows have answered on most of our farms to press down the freshly ploughed land sufficiently for the harrows to follow at once, and the drilling was done quickly and well. With Mangolds all in clamps, the earthing finished, and the winter corn all sown, the ploughs have all been at liberty for stubble ploughing, and the whole of the land required for roots next season is fast being thrown up into ridges so as to expose it thoroughly to air, rain, and frost. A nine acre field which was under Winter Oats last summer was ploughed immediately after harvest, so many Oats were shattered that plants have sprung up almost thick enough for another crop. The field will be left untouched till spring, when the Oats may either be eaten off by sheep or ploughed in for Barley, if the crop is not then found good enough to leave for harvest. The mention of Barley reminds us of an instance of the value of a change of seed which recently came under our notice. On two adjoining farms Barley was sown extensively last spring, one farmer using home-grown seed from last year's stock, the other obtaining the best seed he could from a distance. The produce of the home-grown seed was sold for 24s. per quarter, while that from the seed of another locality was sold in the same market for 32s. per quarter. What this means is, that one farmer has realised at least £2 an acre more for his Barley than the other. All that can possibly be done to improve the soil of fields intended for Barley next season should be, for this crop is the most profitable among corn now. Draining, ridge-ploughing, the best seed from a carefully chosen sample, a fine seed bed, and a full dressing of chemical manures will go far to ensure success in Barley culture. We have been at some pains in changing our seed Wheat from one farm to another, and we have procured the best White and Red

Wheat we could for the home farm, our aim being to render the home farm a nursery whence supplies of the home-grown seed of the best sorts of corn may be drawn for sowing upon the off farms.

SUCCESSFUL FARMING.

IN the course of an address on "Some Conditions of Successful Farming," recently delivered to the Lancashire Farmers' Club by a gentleman occupying a prominent position in the dairy districts—viz., Mr. Thomas Rigby, the Secretary of the Royal Manchester, Liverpool, and North Lancashire Agricultural Society, the following remarks occur that are specially worth attention. The first conditions necessary for success he very properly laid down as labour, care-taking industry, perseverance, and mutual confidence between landlord and tenant. Rent must be properly proportioned to the use that might be made of a holding; but a fair rent, or even a low rent, was no guarantee of success. In fact, a low rent often acted as a snare to the unwary, as it appeared to be too easily makeable. He did not therefore plead for low rents, or for uniform rents, or uniform reductions, but simply for such rents as could be fairly paid by industry and reasonable effort. Situation and aspect of land, soil, and buildings were all factors for consideration. In fact, the question of rent was properly one of capability—not capability of the tenant, but of the farm. With some men rent was almost immaterial, for they could make no farm pay, simply from their own inherent incapacity. Successful farming was dependent, said Mr. Rigby, on knowledge—not merely knowledge of what to do on a farm, but of when to do it.

Then, coming to the point of his address, he asked whether the most was being made of the Lancashire dairy farms? In other words, was the cheese and butter as good as it could be made, or was it irregular in quality and therefore in price? Was not much of their cheese sold at 5s. to 10s. per cwt. less than the current average market price, and even that with difficulty? And must it not be admitted that lack of skill and knowledge was the cause of all this—and, worse even than lack of knowledge, contempt of knowledge? Very truly did Mr. Rigby observe that the conditions of successful cheese and butter making were too subtle to be discovered or defined without close and patient study, and then only when the student possessed the natural aptitude. The utility of dairy schools was pointed out by instances of pupils who, after a short course of proper instruction, had gone back to their farms and forthwith improved the quality of their cheese by 5s. to 15s. per cwt. Nor should the "little things" of the farm be overlooked—poultry, bees, and other minor matters were all factors in the sum. The breeding or economical purchase of good sound stock, a knowledge of markets, and an ever-ready judgment in buying and selling, the conduct and observance of experiments, the keeping alive to the general state of agricultural affairs by reading and by conversing, and the maintenance of an honest character, were all put forward as essentials to success, of more consequence than lowness of rents.

THE WHEAT TRADE.—One of the most remarkable circumstances in connection with modern commerce has been the development of trade in Wheat. Fifteen years ago England imported 10,000,000 cwt. a year of Wheat from Russia, 12,000,000 cwt. from America, and 8000 cwt. from India. She now imports 5,000,000 cwt. from Russia, 22,000,000 cwt. from America, and 11,000,000 cwt. from India. India and America thus yield our chief supplies. But another market is rapidly developing. The Argentine Republic and Uruguay, which formerly did not grow sufficient Wheat for their own populations, are beginning to export it. There was only half a million of acres of land under cultivation in the Republic thirty years ago; now there are over five million acres. In thirty years, therefore, the area under crops has multiplied more than ten times, and the Wheat crop during the last three years has quadrupled. The two States referred to contain nine hundred million acres, and in proportion they have more cultivated land than any similar area in the world.

OUR LETTER BOX.

Warts on Heifer's Teats (R. C.).—Wash the wart daily with a strong solution of nitrate of silver, taking special care that only the wart is touched by it, and it will soon disappear. For small warts use the same specific in the solid form, termed lunar caustic, rubbing the wart once or twice daily with it.

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude, 111 feet.

DATE.	9 A.M.					IN THE DAY.					Rain
	Barome- ter at 32° and Sea Level	Hygrome- ter.		Direction of Wind.	Temp. of Soil at 1 foot.	Shade Tem- peratnre.		Radiation Temperature			
		Dry.	Wet.			Max.	Min.	In sun.	On grass.		
1886.											
October.											
Snnday	24	30.204	52.4	49.3	E.	50.3	55.3	45.7	78.9	39.0	—
Monday	25	30.242	48.8	47.4	E.	50.3	72.0	48.7	69.9	41.0	0.57
Tuesday	26	30.138	48.4	45.7	N.E.	50.3	49.6	47.1	54.6	42.2	—
Wednesday ..	27	29.895	47.4	45.6	E.	49.8	51.5	45.5	59.3	41.6	0.088
Thursday	28	30.072	51.2	50.0	N.E.	49.8	58.0	46.2	75.3	42.6	0.018
Friday	29	30.250	54.8	53.8	S.	50.3	62.2	45.2	85.6	36.3	—
Saturday	30	30.387	52.7	52.3	E.	50.9	59.0	48.4	64.7	38.7	—
		30.170	50.8	49.2		50.2	55.5	46.7	69.9	41.3	0.163

REMARKS.

24th.—Bright early, fine day but without much sunshine.

25th.—Dull early, showers from 9 to 10 A.M., dull day.

26th.—Cloudy all day.


27th.—Overcast, with showers in morning, wet afternoon.

28th.—Fine bright morning, pleasant afternoon, shower late in evening.

29th.—Fine, bright, and warm.

30th.—Fog till 10.30 A.M., afterwards fair, slight shower in afternoon.

A variable week, some bright pleasant weather but a good deal of cloud and damp. Temperature 3° above the average, and about 1° above that of the preceding week.—G. J. SYMONS.



COMING EVENTS

11	TH	Richmond, Tunbridge Wells, and Portsmouth Shows.
12	F	Reading, Huddersfield, Lewisham, Cheshunt, and Canterbury.
13	S	
14	SUN	21ST SUNDAY AFTER TRINITY.
15	M	
16	TU	Winchester, Brighton, Putney, Sonthend, Watford, Teddington, Twickenham.
17	W	Bristol, Ascot, Newport, and York.

AUTUMN-FLOWERING AMARYLLISES.

THE spring and summer months afford us a wealth of Amaryllis flowers rich, brilliant, and varied in colour, but later in the season we have hitherto had few representatives of the genus. At a time when indoor flowers are not too plentiful additions of any kind are most acceptable, and for this reason the autumn-flowering Amaryllises, now steadily increasing in numbers, are particularly worthy of attention. The species from which these have chiefly originated is Amaryllis reticulata, an old and well-known stove plant, but one that has never been regarded as of great horticultural value; nor until quite recently has its capacity for development been recognised. There is now, however, every reason to suppose that a distinct and beautiful race of varieties and hybrids will be formed that should command as much favour as the spring-flowering type now so popular.

According to the first edition of Aiton's "Hortus Kewensis," published in 1789, Amaryllis reticulata was then grown in the Royal Gardens, having been introduced in 1777 by Dr. Edward Whitaker Gray. In Andrews' "Botanists' Repository," vol. 3, plate 179, which was not issued until more than ten years after the first-named work, the species is well illustrated in a coloured plate, and it is said that the plant was first cultivated in 1772 at the Hammersmith Nursery, the bulbs having been received from Portugal by Edward Whitaker Gray, M.D., of the British Museum, and were by him communicated to Messrs. Lee & Kennedy. If the latter account be correct it would seem that the plant was introduced from Brazil to Europe by some traveller, and that it passed from Portugal to England. In Andrews' illustration the white midrib of the leaf is not shown, the flowers being suffused with rose and reticulated with a darker shade. Some variations differing slightly in depth of colour have appeared from time to time, but over 100 years elapsed before any very distinct departure from the ordinary character was obtained, and it seems strange that, although other Amaryllises received so much attention from hybridisers, this species should have been comparatively neglected for so long.

It is probable that experiments with the object of securing hybrids between A. reticulata and some of the ordinary scarlet varieties were commenced about the same time both at Chelsea and Upper Holloway, but the first recorded success was gained by Mr. B. S. Williams. At one of the meetings of the Royal Horticultural Society in 1881 this raiser exhibited a plant of a hybrid between A. reticulata and the scarlet variety Defiance, which was named Mrs. Garfield, and at once honoured with a certificate. It was recognised as a distinct advance upon the ordinary type, the flowers larger, well formed in good heads, most delicately but clearly veined, with bright soft rose on a pure white ground. The strength of habit and floriferousness had evidently been greatly improved by the cross. Following this in 1882 came Autumn Beauty, this time from Messrs. J. Veitch & Sons' Nursery, and all that has been said in favour of Mrs. Garfield might be repeated of this. It was the result of a cross between A.

reticulata and a scarlet variety, and the former type seemed to have profited in an exactly similar manner. In both these the reticulata parentage predominated in the foliage, which retained the white midrib and in the venation of the flowers, but a tendency towards successional or periodical flowering during a great portion of the year was also developed that has been still further improved in subsequent acquisitions of a similar kind, but especially in the direction of autumn and winter flowering.

About the same time as the two hybrids named made their appearance another hybrid was produced on the continent and figured in the *Flore des Serres* as A. reticulata vittata, the veining of the flowers being rather bolder and darker than in the others. Then in 1884 followed Mrs. W. Lee from Mr. B. S. Williams, which was certificated by the Royal Horticultural Society at South Kensington and the Royal Botanic Society at Regent's Park. This was a lovely addition to the list, and amply merited the honours it secured. The flowers have the rose colours partly suffusing the lobes of the corolla, but the "reticulation" is still seen, and in the centre of each lobe is a well-defined white band. The strength of habit was still further increased, and the floriferousness became still more marked, the scapes bearing five and six good blooms each, and the plant can be fairly described as perpetual flowering.

Two more varieties or hybrids were introduced to public notice in 1885—namely, Autumn Charm from Messrs. J. Veitch & Sons, and Comte de Germiny from Mr. B. S. Williams, both being certificated at South Kensington. Autumn Charm has large beautifully formed flowers, pure white, veined with bright rosy red, a distinct tint and well marked. Comte de Germiny was a seedling from Mrs. Garfield crossed with a scarlet Amaryllis, and has flowers of good size richly veined with crimson, and barred with white in the centre of the lobes. It is a bold, handsome variety, and affords a pleasing contrast with the other lighter tinted forms. This season a handsome variety of the same type has been introduced from the continent, named Perloti, which is perhaps one of the most distinct of these hitherto obtained. The flowers are very heavily veined with intensely dark rose crimson on a white ground, the rich colouring showing still more strikingly in contrast with the white central bar in each lobe of the corollas. One of the last to be described is Pioneer, which flowered in Mr. B. S. Williams' nursery last month, and is said to be the result of a cross between Crimson King and Mrs. Garfield. In this the veining of the petals is quite lost, the colour being a soft scarlet, and it will probably prove the progenitor of a race of scarlet-flowering autumn Amaryllises.

To these must be added another hybrid that was certificated at South Kensington last Tuesday, November 9th, and which is entitled to rank amongst the best that have yet been raised. This was appropriately named Lady Mayoress, and came from Messrs. J. Veitch and Sons' nursery, having resulted from a cross between Amaryllis reticulata and a variety of A. Leopoldi. The last-named parent has influenced the size of the flower considerably, and the colour is deeper than in most of the other forms—a rosy red bearing reticulation on a lighter ground, but with the colour more or less suffusing the whole of the flower. We next may expect that someone will be fortunate enough to raise a pure white-flowered seedling, and then we shall have a charming series of variations.

A few others have been raised and named, but those mentioned have the best marked characters, and present sufficient diversity amongst themselves to merit including in any collection. One advantage they all possess which must not be omitted—namely, they are evergreen, and their leaves are sufficiently ornamental to render them worthy of cultivation on that account alone, and in some stoves this has been the chief recommendation the old Amaryllis reticulata has possessed. The increased freedom of flowering of the hybrid

and varieties now in collections is a valuable quality, and from this time until past Christmas a constant supply of flowers will be yielded by those enumerated.

These Amaryllises are not difficult of culture, but they need a little different treatment from the Leopoldi hybrids, though similar soil suits them well. A compost of sandy loam and leaf soil, with a very small proportion of old manure, is what they require, with a stove or intermediate temperature during the greater portion of the year. Where conservatories are kept somewhat above the greenhouse temperature to accommodate such plants when in flower, the autumn Amaryllises can be safely employed. They do not have a marked season of rest like the others, and the "drying off" system must therefore be especially avoided, for growth continues throughout the year.

In the illustration (fig. 62, page 433), three of these Amaryllises are depicted—viz., 1, Mrs. W. Lee; 2, Perloti; 3, G. Firth, indicating the characteristics of the race.

THE LATE MR. GEORGE WILLIAM JOHNSON.

It is, to me, a sacred duty, as well as a mournful pleasure, to add just a word or two to those so well said by yourself last week, and will be said by others, on the character and life of Mr. Johnson.

You do well to enlarge on his kindness of heart. "Write me as one who who loves his fellow man" might, with literal truth, be said of him. His was a large, loving heart, ready, nay anxious, to help all who came before him. I am, myself, a living witness of what he did out of pure kindness to me, a perfect stranger, thirty years ago. Through the correspondence of the then *Cottage Gardener* he found me, a young man living in a manufacturing neighbourhood in uncongenial surroundings, with high gardening aspirations, but little prospect of satisfying them, and, from my explanation alone of my desires and position, he took up my case, and never rested until he had introduced me to those who lifted me out of my then unsatisfactory position, and placed me in the, to me, much longed for paths of true gardening; the result being that for many years now I have been a head gardener in a steady and fairly comfortable place. He was therefore, under God, the means of all my life's prosperity and happiness, and that you can understand my feelings of gratitude towards him. Then, having once taken me by the hand, he never let me go, but occasionally, by a timely letter of advice and fatherly counsel, guided me to right conclusions and actions. The last, and about the pleasantest letter I ever had from him, was from Waldronhurst not very long since.

One by one all the old teachers and guides of our Journal are going home, the "Doctor" being now about the only one, with "D." of Deal, that is left, and it is getting with me, as the Laureate says, that—

"The days darken round me, and the years,
Among new men, strange faces, other minds."

But though "the old order changeth, yielding place to new," God fulfils himself in many ways. The Journal goes on, and as our late chief and friend said, in his last letter to me (for we were on this subject), "the new generation of writers keep up the old gardening spirit and intelligence of the paper with great skill and power."

I have a kindly feeling for the present writers and readers of the *Journal of Horticulture*, but, of course the Editor and writers of thirty and more years ago lie closer to my heart, and I think of them—Robert Errington, Donald Beaton, Robert Fish, Thomas Appleby, John Robson, Thomas Weaver, James Barnes, and others—with the tenderest feelings, but the dearest to me is the memory of my life-long friend, George William Johnson, whose death is blessed, and his works follow him.—THE "EXCELSIOR" of the *Cottage Gardener* of October 14th, 1856.

I READ with strong sympathetic feelings of the peaceful end of our kind friend and benefactor, Mr. G. W. Johnson. It recalls to my mind his stating on offering me a post on the staff of the *Journal of Horticulture* in 1861, that he had the pleasure of observing, "You have the sound sense to make comparative experiments. Pursue that course, and you will assuredly acquire a fund of reliable information of great practical value to yourself and others." This is only one of many similar encouragements received in a long course of years, and which will ever be remembered with a strong sense of indebtedness to departed worth.—G. ABBEY.

As a recipient of much good advice from the late Mr. G. W.

Johnson, I feel impelled to record an instance of the generosity of his heart. Many years ago he desired an article on a specified subject by return of post. I was unwell at the time, yet just able to comply with the request of our departed friend. At that time I was a little proud, perhaps vain, of my penmanship, which was very different from what it is now, and expressed regret for my inability to acquit myself better both as regards the matter and manner of my contribution. His reply was prompt and practical; it was to the effect that I should ask to be relieved for a week or two for a rest and change that he was sure I needed, and he enclosed a bank note for meeting any expenses that might be incurred under the circumstances. He was subsequently the means of placing me in a position far better than before, and to which I could not have succeeded without his assistance. What is often said jocularly in respect to another gentleman, whom it is not necessary to name, I say in great sincerity of Mr. Johnson—that he was, indeed, a "grand old man."—A GARDENER.

THE PAST SEASON'S GARDENING.

Now that the period of comparative rest in gardening has arrived, it is a suitable time to exchange experiences regarding the various crops of flowers, fruit, and vegetables we have had to cultivate during the past, not by any means unfavourable, year of 1886. Of course, writing from a somewhat favoured locality, five miles from Tunbridge, Kent, it is not to be suggested that the season has been equally favourable to all alike. However, I will roughly note down from memory a year of our successes and failures, which may profitably be compared with other readers of our Journal's experiences.

We have had a good Pea season, more especially with the early and second crop varieties, such as William I., Day's Sunrise, Kentish Invicta, Advancer, and one or two other sorts, with later varieties, such as Champion of England, Victoria, Ne Plus Ultra, &c. They did not do so well after the later summer rains set in, mildew supervening, which very much shortened the crops. Potatoes Myatt's and Welford Park Kidney have done good service, the latter an excellent introduction of good quality, and a splendid cropper with me. Schoolmaster, Grampian, Victoria, with a few other late sorts, have cropped well and been free from all decay. By the way, I may mention since storing away the seed tubers they have, all sorts alike, become badly affected with the old 1845 complaint, the Potato blight. Mr. Ross's new M.P. is a good variety, but not sufficiently in advance of the grand old Schoolmaster (at least with us) to merit any particular distinction.

The first sowings of Carrots and Parsnips were almost a failure; later beds, however, produced splendid results, more especially Carter's Improved and Intermediate Carrots. Autumn-sown Onions were unusually large, many measuring 17 and 18 inches round, but I am sorry to say they kept badly. Spring Onions are plentiful, but one-half of them have run bull necked, and will, of course, only be suitable for present use. Broad, Kidney, and Scarlet Runner Beans have cropped well. Turnips, as usual with us in the garden, quite a failure; but in the fields, and even among Hops surrounding, they are plentiful and very fine, as well as all other root crops generally. Beetroot, where sown a little too soon, have done well, but many seedy ones have shown up in the beds. We had a fine season for Celery planting, no maggot in the crop, but nearly all the White Sandringham ran to seed, Harrison's Red standing well, and at present in full use.

Lettuce and Cabbages have been put out for spring use; the latter we found much afflicted with club at the root, which is best cut off with a sharp knife, and rarely any of the plants will suffer. All kinds of Winter Greens, Brussels Sprouts, Broccoli, &c., are unusually strong, which will be none the better in the event of a severe winter setting in. I will add a few fruit notes, with the Editor's kind permission, in another number of the Journal.—WM. CHISHOLM, *Oxon Heath Gardens, Tunbridge.*

SELECTION OF PEARS.

I MUST plead on behalf of an old friend—viz., Marie Louise, which I notice is omitted by Mr. Muir in his selection page 404. Taking all things into consideration I consider this variety the best Pear we have for general usefulness and reliability, and if I were confined to one variety I should choose this in preference to any other I am acquainted with, as I know of no other variety so good in quality which can be depended upon to produce a crop under such a variety of circumstances.

Beurré Superfin is a grand Pear certainly, but I do not find it a certain cropper. We are told "the aim should always be to have a constant supply," but I, for one, would not like to depend on so few varieties in order to secure this end as those given on page 404, as very few will keep from four to six weeks after they begin to ripen among those fit for use before Christmas, and occasionally one kind will have a year's rest. Beurré Diel varies much in quality in different parts of the country.

Instead of large, rich, and melting, here it is small and worthless, and in Kent I have found it of fairly good quality as a rule. Josephine de Malines is of no use in this neighbourhood; it is small and poor in quality.

Doyenné du Comice ripens here middle of October, and also in Kent I have noticed it the same time, instead of December as stated on page 404. The following varieties do well here, and are placed as near as possible in the order of ripening.

Doyenné d'Été, Beurré Giffard, Jargonelle, Williams' Bon Chrétien, Brockworth Park, Fondante d'Automne, Louise Bonne of Jersey, Doyenné du Comice, Marie Louise, Pitmaston Duchess, Emile d'Heyst syn. Beurré d'Esperen, Beurré Bosc, General Todleben, Winter Nelis, Easter Beurré, Passe Colmar, Bergamotte Esperen, Ne Plus Meuris.—W. H. DIVERS, *Ketton Hall, Stamford.*

COMMON FLOWERS FOR CUTTING.

OF hardy flowers there is a goodly number either to select from or to grow as a collection. At this period of the year we are approaching the end of these for another season, but of the few which bloom during the dull months of winter we have already some stray flowers appearing. Of these are *Schizostylis coccinea*, many spikes of which are now well forward, and some open. In moderately open winters this does very well planted so as to have the protection of a south wall; on a south border and protected by rough frames very fine spikes of clear bright flowers are freely produced. The plant must have good cultivation, and requires breaking up and transplanting every spring in rich soil. Christmas Roses are also now beginning to show, strong clumps of the *maximus* form pushing up numbers of buds. This is the most prolific of what are termed the "minor" varieties, three good blooms on each stalk being quite common. The blooms of all the Christmas Roses are easily damaged, the roughest method of gaining purity in the flowers being to cover the plants with dry leaves or fern. Large beds we cover with old sashes, and when we want a large number of flowers quickly they are cut in the bud state and put into a stove temperature, in which they open quite full out in the course of two or three days. For vase work we use half-expanded blooms; these open quite pure, and last much longer than fully opened blooms do. Christmas Roses as a rule are much the best used in glasses by themselves, using as a setting a good leaf of their own foliage, and at most a very good frond of Maidenhair Fern. Another indispensable winter flower is the *Ozar Violet*. This variety flowers well in most winters if the stock is annually replanted; April or May is the best time for this work, rooted runners being taken and planted in good soil well enriched. To bloom in winter we plant under the protection of walls. The same plant flowers well at the usual flowering time, but beds in the open garden do best for spring flowering. In early spring there are not many flowers which grow in the open borders which are suitable for cutting. True, we can on occasion make use of Snowdrops, Crocuses, &c., but that is only "on occasion." But a good early-flowering plant is to be found in *Doronicum caucasicum*, a pretty starry yellow flower; *D. austriacum* may also be grown, but these are much alike. *Helleborus atro-rubens* is a pretty flower—exceedingly pretty, but unfortunately does not stand well when cut. Then the earlier of the

Daffodils should be planted in quantity, *Narcissus minimus* being both pretty and useful. Other good and cheap *Narcissi* are the common Lent Lily, *N. bicolor*, *N. telamonius*, *N. poeticus*, *N. poeticus ornatus*, *N. p. flore-plena*, *N. incomparabilis*, *N. i. Leedsi*, and the double form of *incomparabilis*. These grown in quantity will yield a lengthened harvest of their beautiful flowers. A point worth noting in their culture is this: the bulbs flower much better if occasionally lifted and planted thinly. One extensive grower we know lifts annually, but that is hardly necessary, every third year doing very well. It may be noted that Daffodils make up into beautiful wreaths, and that the double *poeticus* is most useful for all decorative floral work. Then, of course, we have Wallflowers, of which we may say here that selected plants ought to be grown and seeded in pots in order to keep the strain select. The dark blood-red strains are very beautiful, but I by no means object to some shades of red. The old "double" black form is a most useful variety, and of this we grow a goodly number. Very charming flowers, too, are these improved strains of *Polyanthuses*, which everybody should grow. A bed of good whites and another of yellows is well worth the little care they require to have good, though they do under the most ordinary treatment. Seed sown early in April with us blooms in the spring succeeding.

Taking now the best cutting flowers as they come to mind we first note *Chrysanthemums*. Of these the very finest is undoubtedly *Madame C. Desgranges*, a variety which has taken a foremost place with all who have to produce quantities of good flowers for cutting. Even in our northern latitude it does exceedingly well out of doors, both as sheltered by a south wall and grown in open borders. As we

have found it possesses a few little traits which must be studied and provided for, we may be allowed to note these here. Those anxious to get as much bloom as possible out of each plant very naturally expect that a judicious system of pinching will help them. In this instance such is not the case, as pinching has the effect of reducing the quantity of bloom. Well-grown plants of this variety break all the way up the stem, and when in full bloom a broad convex head is formed by the many dozens of flowers open at the same time. Then this sort does much better grown out of pots, even should they be wanted to flower in these, although when one has to limit the size of pot for house decorative purposes, it is necessary to grow them in pots. Generally, however, the best way is to grow them like *Arums* or other decorative plants. Old plants, again, flower much earlier than those from cuttings of the same year, and this is a point of considerable importance, as by using these old plants in pots we can girdle the year with good *Chrysanthemums*, there being no difficulty in keeping such sorts as *Mrs. C. Carey* and *Fair Maid of Guernsey* in bloom until the "*Desgranges*" take their place. That, however, by the way. As to their adaptability for cutting, that almost goes without saying, although we have found full developed flowers drop their petals to a destructive extent, and that indeed is the only fault which this variety has. For wreath-making of the best class it is first-rate, the larger blooms 6 inches or so across being quite as fine as *Elaine* is later. It is also one of the best flowers for wiring for table decoration as at present in vogue, and for vase-filling nothing excels it. For the latter purpose the blooms may be used singly in the smaller glasses, or whole stems cut and employed quite naturally in conjunction with other flowers for large vases. The yellowish centre of the younger blooms are very often condemned as detracting from the beauty of the flowers, but for general purposes this does not hold. The yellow variety *G. Wernig* we fully expect to be, if not of actual value, at least not very far behind the original form. It seems to have the property which so many yellow sports possess of flowering somewhat earlier than the white.

Another very good early hardy sort is *Précocité*, a medium flower as to size, rich yellow, and flowering throughout the autumn. *La Petite Marie* is another very good kind, and useful for wreath-making. *La Vierge* may be mentioned here, as it does exceedingly well planted out and lifted to open its flowers under glass. This we expect will take its place alongside *Madame Desgranges*, *Lady Selborne*, *Mrs. Rundle*, *Elaine*, and *Fair Maid of Guernsey* as a standard cutting sort.—B.

REVIEW OF GRAPES.

I BEG to remind Mr. J. McIndoe (page 415) that I have not said one word against Mr. Taylor in this discussion nor at any other time, neither have I tried to discredit any statement made by him. Mr. Taylor was not a successful rival of mine at the Crystal Palace Show, and I repudiate Mr. McIndoe's insinuation. Your remarks on the *Gros Maroc* Grapes sent you by Mr. Stephen Castle, as well as those of "*A Medallist*" and many others, go to show that there were good grounds for discussion. It was your correspondent's "explanation" of the difference in the two bunches of Grapes in question that drew me into this discussion, in the hope that he would prove conclusively the soundness of the grounds upon which he made his first statement; but instead of trying to do this, he has shifted his position in the case from that of defendant to special pleader, and attempts to make me the defendant by wrongfully accusing me of having attributed unworthy motives to Mr. Taylor, whom he makes an unwilling plaintiff. As I never write anything that I need be afraid or ashamed to put my name, I am sorry for the sake of Mr. McIndoe that I have not given my name, as is my wont, at the beginning of this discussion, and which I most certainly should have done had I started the subject, but for the present I must remain to Mr. McIndoe—AN EXHIBITOR.

[Our correspondent is quite within his right, and he is too high-minded to write with the object of attributing unworthy motives to anyone.]

HARD WATER AND BOILERS.

WHERE nothing but very hard water is available for filling the boilers and hot-water pipes it is astonishing how soon this proves destructive to the former. Here, for instance, we are continually worried with the boilers, and not a winter passes without a breakdown of some kind. In another garden situated in Wales the boilers of all descriptions that have been tried seem equally unreliable, and many a young man has been thoroughly disheartened with the almost impossible duty of keeping up the requisite heat of the forcing houses on ordinary occasions, and more especially during frosty weather. Various remedies have been suggested and various experiments tried to soften the water, none of which is of much use when much water is constantly passing from the supply cistern into the boilers. When everything is in good working order or comparatively new very little water is wasted, and what therefore is let or poured into the feed cistern may be softened by some means and with advantage. But when the pipes run "nobody knows where and nobody knows how," many of them being very old, many buried out of reach of ordinary observation, and all connected in various forms and by various hot-water engineers, it is not at all surprising to find there is always some

thing wrong somewhere. This is a nearly correct description of our system, or want of system, of heating, and the consequence is many bottom-heat pipes are burst at the sockets, for which the rusted iron filings used in the packing are responsible. The valves when turned leak badly till rusted up again, and a few cracked pipes complete the tale of misery. Fortunately, we have a good water supply, and a steady stream is always running in. Plenty will be ready to ask, "Why not have all this rectified?" but this is much easier said than done. Nobody could say where to stop and what the cost would be, and besides a grand upset is not to my liking; in fact, I could not name a time of year when we could afford to stop everything in the way of growing plants, fruits, and vegetables. There are many more, I am afraid, in much the same predicament, and we can only sympathise with and assist each other to the best of our ability.

We cannot soften our water nor alter the arrangement of the pipes, and under the circumstances it must be a very good boiler indeed that will long stand against a train of unfavourable incidents. Various cast iron boilers have been tried, especially before I had charge of the place, and more have since been fixed and refixed by their maker, who would not accept defeat; but they all collapsed, either at the first strain or in about twelve months. The first offenders were upright tubulars (not Weeks'), and they burst at the lower ring, either from a too slow return, the cold water first passing through the hollow bars, or owing to a rapid settlement of rust or other heavy matter, which the heat rapidly transformed into rock. The old-fashioned upright tubulars are simply worthless, being liable to break down even where the water is perfectly soft. There are two glaring faults in their construction, both of which have been remedied by the leading hot-water engineers, but not by the local makers, who still persist in constructing them on the old lines. In the first place the bottom ring ought either to be cast more after the shape of a horseshoe, or with a gap in the ring, this admitting of expansion; or better still on the duplex system, so well carried out by Messrs. Weeks. Then instead of there being only one small pipe connecting the hot-water bars with the boiler there ought to be two, this being especially needful when the settlement in the boiler accumulates quickly, or wherever hard water is used. When a very experienced friend first pointed out to me how important it is that there should be one good return pipe if not two to every boiler, I felt certain that the want of this had much to do with the collapses that have occurred here. When there are two 4-inch flow pipes and only one partially choked 3-inch return it is bound to end disastrously the first time a sharp frost necessitates hard firing, and it is the ring at a spot just in front of the furnace door that gives way beyond all power of repairing. The very thought of what we have had to contend with makes me shudder. These breakdowns are always annoying, happen when they will, but I have no word to describe the gardener's feelings when it occurs, as it usually does, at the outset of a severe frost.

Upright tubulars unfortunately are not the only failures, as it has been necessary to re-rivet saddle boilers and to frequently repair those that are welded. They give way somewhere, some in about five years, others after a longer duration. The most serviceable boiler ever fixed here, an improved Trentham or Cornish, gave no trouble for twelve years, but the breakdown happened as a matter of course when the upright tubular in connection with it was also "in a bad way." Early last winter, at the commencement of a week's frost, we were fixing one new boiler and repairing the other, the new working as best they could in the daytime, and so contriving as to admit of the pipes being filled and a fire lit each night. We were up all night long and adopted all sorts of contrivances to keep out the frosts from those houses which the Trentham does not reach. It was altogether a case of gardening under difficulties, and it was not the first time I devoutly wished all the hot-water apparatuses at the bottom of the sea. I thought of all this when I saw the display of boilers and piping at Liverpool, and I quite sympathised with Mr. Witherspoon and his difficulties with defectively constructed joints. He should have had the gold medal if my vote could have been the casting one.

The one great recommendation of the Trentham boiler is the fact that it can be repaired where it is most liable to burst without the aid of a mason. With us it failed directly over the fire and within easy distance of the front. A small crack soon spread, and a steady stream proves too much for any ordinary fire. At first an iron plate half an inch thick, about 12 inches by 6 inches, and made to fit the boiler was bolted strongly over the weak place. Instead of red lead, which is liable to squeeze out, a square of the fireproof asbestos was enclosed, and this effectually stopped the leak. This papery material seems proof against a fierce fire, though in our case it was only subjected to the test for a few months; at the same time when removed last winter it was apparently uninjured. The work of drilling holes and strongly bolting on the plates is very laborious, but in spite of the great heat necessarily got up every night it was well done. As it happened it only stayed off a breakdown for a short time, as the roof of the boiler soon began to warp and crack afresh, and after an examination it was decided to cut a piece measuring 18 inches by 15 inches clean out. When this was done it was found that the whole of the roof was encrusted with rock of nearly the thickness of the water space, and the wonder is that any heat ever reached the houses connected with that boiler. In case I may appear to have exaggerated the state of affairs I am posting a sample of what came out of the boiler for the Editor to inspect. He may have seen similar instances of incrustation, but I never have, nor could have credited previously that a boiler would have got into such a bad state in a comparatively short space of time. A man worked hard all one day in clearing out the rock from that boiler, and some could not then be got at. A fresh stout plate well paced at the edges with iron filings and red lead was strongly fixed over the opening made, and it answers

well. As many as thirty-two stout square-headed screws were used, and I have no doubt such strong work will be lasting. Flimsy repairs are useless, especially in such trying positions, and we were fortunate in being able to command the services of experienced mechanics. It is no economy to patch up an old-fashioned boiler, seeing how much more powerful and less fuel-consuming are the most modern inventions, especially saddle boilers with a waterway back or "check end," but nearly any boiler can be repaired, and if the work is well done will last for many years longer. —W. IGGULDEN.

SEASONABLE HINTS ON FLORISTS' FLOWERS.

THIS month is a busy and important one for florists, and it is not too much to say that on the care and attention bestowed now will depend the success or failure of another season. Other circumstances may cause it afterwards to make or mar the season's prospects, but if neglect takes place now nothing will remedy it afterwards. A few hints, then, from an old florist may not be out of place.

AURICULAS.—These must now be put into their winter quarters. Some have houses in which "to bestow their goods," others—that is, the larger proportion of growers, use frames. These must now be removed from the shaded aspect in which they have been (or ought to have been) all the summer to a position facing the south, so that they may get the benefit of the winter sun when it condescends to shine. All dead and decaying leaves should be gently stripped off, and if there are any aphides they should be got rid of, either by brushing or fumigation, and the pots kept clear of weeds. I do not know how others have found it, but although this has been one of the finest and warmest autumns that we have experienced for many years I never had so few autumn trusses. As I potted at the usual time and treated my plants precisely as I have done in former years I know of no reason that will account for this.

CARNATIONS AND PICOTÉES.—Those who, like myself, trusted to plants in beds received a rude shock this season. For two winters my plants had done well, and I hoped that I could dispense with flowering them in pots, but the severity of last season was too much for them and grievous gaps marked the bed, so I am this year returning to pot culture, and shall bloom them under a rough structure I have put up for flowering my Chrysanthemums under. The layers, which have all been taken off some time and just planted thickly in a bed, will now be taken up, potted where the plants are large, one in a 48-pot, or two when they are small, but if there is plenty of space they are better potted singly. The compost used should be very simple—pure loam, with a little leaf mould added, but no manure. It is not desired that the plants should grow during the winter, but make plenty of roots. After potting they should be kept close for a few days after being gently watered, and they should then be removed to a frame facing south, and have abundance of air given at all seasonable times, a close damp atmosphere inducing spot.

GLADIOLI.—This is an anxious month for these, as on their successful housing depends a good deal of the success of next year's blooms. The beds containing them will have to be carefully watched, for there are some corms which are earlier than others, and will have to be lifted first. The early part of the month was very favourable for ripening them, but within the last fortnight we have had in Kent more than 3 inches of rain, and where the ground is at all heavy it has made the ground too sticky for much to be done with them. Opinions vary as to the best time for taking them up. Mr. Burrell leaves his to a very late time, even covering his beds with long litter to prevent the frost getting at them. They say at Fontainebleau that November is the month for lifting them, but in a note I had from there a fortnight ago they told me that they were already doing so. When they are taken up they should be placed in a cool shed where the air can get at them, but from which frost is excluded, so that they can be dried gradually. I never found that corms what are lifted in a sound state go off afterwards, but if they are spotted they are most likely to go from bad to worse. Some advocate their being left with all the earth adhering to them, but neither at Fontainebleau or Langport is this idea carried out. The "spawn" should be carefully saved of good varieties when the bulbs are cleaned off, and be put into paper bags with some dry sand; there they may be kept until the spring. When I clear off my corms I place them in a frame specially made for them, and place it in a dark cellar where frost cannot reach them, writing their names on the bulbs themselves, so that if they do get disarranged in any way they may be easily known.

PANSIES.—These may now be placed like Carnations and Auriculas in frames, and be treated in a similar manner. Where they are grown in beds care must be taken to save them from being broken or twisted by high winds, and a top-dressing of old manure about 1 inch in thickness will be found useful for keeping the plants in order, as well as helping their growth.

RANUNCULI.—I have been much puzzled by the observations on these tubers in a recent Journal, when the writer of the calendar said, "The Turban varieties of Ranunculuses are best for hedging out late in January. Late in January or early in February are good times for planting them." I hardly know what he means by Turbans being best for hedging out. Of course if you want to have beds all of one colour this is true, but the Persian varieties are equally good; and as to planting the Turbans then. It is, I think, the first time I have seen that recommendation. They ought to be, or at any rate they are always, planted in October, while the Persians are reserved for spring. It is to me a great surprise that these (the Persians) are not more generally grown, for they are now easily obtained. After having tried in many quarters for sorts that would bring back to me those which made so vivid an impression on me fifty years ago, I received a collection from Messrs. Ant. Roozen and

Sons of Haarlem, and they entirely fulfilled my expectations. They were of all the varied hues which the *Ranunculus* gives to us, from pure white to so dark a purple as to look like black, reds, greys, olives, white grounds, spotted or striped yellow grounds edged with various colours, and I could but feel, as day after day I revelled in their beauty, what a pity it is that more lovers of flowers do not grow them. Let me advise my readers to try a bed, and I think they will agree with me in admiring their beauty and symmetry of form.

ROSES.—It is a busy time now with the Rose grower. He will look over his beds to see what vacancies there are, what kinds are to be discarded for better varieties. He will look out eagerly for the packages from the nurseryman, and if he is wise plant as soon as ever he receives it, unless the ground is very unfavourable. In that case it will be better to lay them in and defer it to a more favourable time. Where fresh plantations are to be made the ground should have been well trenched and manure added, so that no fresh manure should be added at planting time. It is also well to be looking out for turf to prepare compost for future use.—D., Deal.

COVENT GARDEN MARKET.

ENGLISH AND FOREIGN PRODUCE.

UPON any day of the week this Market exhibits an odd mingling of the rich and poor in the throngs that pass through its avenues, for many come here even from distant parts of London who have money to buy things out of their season, be it sooner or later; and some come here thinking it must be the place to get any fruit or vegetables good and fresh, though experience after a while may alter their views about this. To say the truth, Covent Garden prices are rather anomalous. Thus, one man may be noticed getting 6d. for some article which affords another a few yards off a profit at 3d. The plants and cut flowers of the Market furnish another attraction, and those who do not buy here yet obtain some enjoyment by strolling about with observant eyes.

It is appropriate certainly that this great emporium should be on land which once belonged to monkish owners, for the convent gardens of the Dark Ages were for a long period the only places at which experiments in horticulture were carried on; and this plot, of about its present size and shape, so the old deeds show, was the garden attached to the abbey of Westminster till it became the property of the Duke of Bedford, and a small market was held on one side of the ground during the Commonwealth, but it was still a garden; down to Strype's time there remained a shady grove of trees. Could we resuscitate one of the old monks and take him round, even upon an autumn day, he would acknowledge that, clever as his brethren were in raising toothsome fare, the gardeners of modern times have completely distanced them.

An entry has been found recording the setting of young trees in 1666, probably Elms, which have all vanished. A few Sycamores of no great age grow beside the churchyard of St. Paul's near. To see what trees Covent Garden has still to show us we must ascend to the terrace or gallery which extends round a portion of the Market buildings. Here one seems to breathe a freer air than on the ground below, where a somewhat mixed vegetable odour exhales, and we find ourselves in a sort of elevated shrubbery backed by conservatories; and the sound of the birds in the aviary adjacent might suggest to us that we were in some rural retreat. Most of the trees were planted on this spot thirty years ago or more by the grandfather of the present occupier, and there are many, both English and foreign, that have stood the London smoke well. The roots are contained in tubs or boxes, and on comparing the size of these receptacles with that of several of the trees living and thriving here, it is evident that a very moderate quantity of earth suffices to keep certain species in a growing condition; but possibly some of them have extra nutrition supplied, and though October is advanced they are not yet bare of their leaves. We are overshadowed by Birches, Poplars, Hazels, Planes, and Sycamores, also by evergreen species of familiar kinds. Here, however, as elsewhere in the metropolis, Rhododendrons, though attaining a good size, will not bloom.

Evergreens of all kinds are a feature of the Market just now, as the demand for them increases with the approach of winter, but the young Firs appropriated to Christmas festivities have not yet arrived on the scene; and the numerous Chrysanthemums in pots indicate the growing popularity of this flower, which is opening just when many of its Composite kindred are ceasing to adorn our gardens. Bunches of Michaelmas Daisies and Asters are evidently in demands with autumn Roses and Violets; indeed there is probably no week of the year when cut blooms of these favourites are not to be purchased. A specimen of the Camellia-flowered Balsam, though going off, brings to our mind a row of cottage gardens where these were a conspicuous autumn adornment, beside tall Sunflowers and Hollyhocks. This is a species that might be oftener sown about our London open spaces, as also the tree Carnation. The latter will flower on till Christmas with not much injury from damp days or frosty nights. Numerous Ericas interspersed with Ferns, amongst which the predominance of

Adiantums is perceivable, *Pelargoniums*, autumn Lilies, and other plants in pots make a pleasant show, and they are somewhat in demand at this era of window gardening, when even city streets show us the rotation of the seasons. Then there are creepers ready for autumn planting, and showy herbaceous species also, guaranteed to flower early in spring. Some enterprising vendors of seeds produce their stocks of annuals, advising the public to sow these late in autumn; but I am afraid, so far as most London gardens go, the result is seldom successful owing to cats and sparrows.

Also we may see at Covent Garden the products of our fields and woodlands. Here are bunches of tall Grasses, Fescues, Catstails, and others arranged for ornament, long sprays of wild Rose well covered with fruit, and Hawthorn twigs profuse of bright berries, and amongst the edibles wild Blackberries and Mushrooms. People come to the Market for healing herbs, specially for those presumed to furnish a tonic beverage in autumn. Cheap substitutes appear for the much-advertised "Hop Bitters," and some seem to think that Danilpone can cure almost all maladies save those requiring Liquorice, while the numerous bundles of Solomon's Seal hint at the frequency with which black eyes occur amongst a certain class.

Amongst the esculents that may be said to be both palatable and healthful the Tomato claims a high place. Not so many years ago it was chiefly used with us for making sauce, but it is now freely eaten raw and cooked in a variety of ways. We have only to glance around the stalls to see that this fruit is very popular, its perishable nature being somewhat troublesome to the vendors, yet growers manage to send a large quantity to the London markets from Guernsey. It is also raised throughout England in the open air as under glass, though not regarded with favour by market gardeners owing to the uncertainties of the crop, which is apt to be infested with a minute but troublesome fly, the *Aleyrodes*. Celery is another esculent much eaten in autumn, and decidedly beneficial; it is one of the few vegetables that can be advantageously grown near the metropolis, and much of the Celery we see has not cost much in carriage. As we look around we are reminded of a burning question of the present day, for how small a proportion of the fruit and vegetables sold in this Market has been raised on British soil. Hard upon native industry, say some, let us adopt repressive measures, shut out foreign goods, or put on them heavy imposts, and then the farmer and market gardener would have a fair chance of beating the foreigner. Is it possible for us to replace the supply we have from abroad by English-grown articles? I believe not. Then let this fact be considered, that it has been estimated at least 150,000 persons in London alone gain a livelihood by selling foreign fruit, and were this no longer to arrive here their trade would be practically gone. One thing is unalterable, either by theorists or law makers, and that is our English climate, which does not favour the early ripening of fruit, so that the markets are well stocked, or perhaps glutted, with articles raised in summer lands before the English growth can put in an appearance. Then again, the Englishman while knowing he has the disadvantage of being behindhand, very often holds back his goods, in spite of this, for the sake of getting what he thinks a fair price. And indeed, he is often obliged to ask more than the competition of the day will allow the buyers to give, because he is heavily handicapped by high rent, extraordinary tithes, &c. Time was when we exported a good deal of the produce of our market gardens, now except some Cauliflowers and Cucumbers very little goes to the Continent. But as already stated, we import enormously fruit and vegetables that are also grown in these islands, chiefly from France, Belgium, Germany, and Holland. America sends in her contingent, of which Apples form the largest item. To arrest this is impossible, yet something might be done, we may say *must* be done, to help the native producer, not to outrival, but to compete fairly with, the grower in a more genial clime. It is admitted that the present rate of railway charges forbids the transit from a distance of much that would reach the London market if a lower tariff was in force, and greater facilities given for quick despatch. And we must imitate our French neighbours by whom so much land is held in small allotments, and its produce sent abroad, the cost of labour being of course much less than with our English farmer.—J. R. S. C.

THE CHRYSANTHEMUM OUTLOOK.

THE SLOUGH NURSERY.

FLORISTS' flowers have for many years received close attention in Mr. Turner's nursery. Roses, Azaleas, Dahlias, Carnations, and Auriculas have rendered the firm celebrated wherever flowers are prized, no name being better known in the horticultural world than Turner of Slough. Prompt to recognise the increasing popularity of any plants, different groups or families have been taken in hand in succession, the rule being in every case to develop their qualities to the utmost, and prove by the best cultivation their capacity for improvement. Chrysanthemums have long held an important place in the collections at this nursery, but to meet the greatly extended demand, and to do ample justice to such a beautiful

race of plants, it has been necessary to increase the number of plants grown and the house accommodation for them when in flower. Consequently a display of considerable magnitude is now provided, not of trained specimens or exhibition blooms, but of freely grown plants admirably adapted for grouping or affording a bountiful supply of flowers for cutting. Two large houses are mainly appropriated to the autumn show of Chrysanthemums, one the spacious structure near the main road, and the other a span-roof house over 100 feet long. In the latter the plants, which are remarkably dwarf and in comparatively small pots, are arranged in two sloping banks, with the path down the centre, and there is such a good proportion of light, dark, and richly coloured blooms, the plants being furnished down to the pots with fine fresh green foliage, that the effect is most pleasing. In the show house first noted the plants form central groups, and are also arranged on the side stages, some 500 or 600 plants being employed, representing a selection of all the varieties worth growing. With those of which the merits have been proved in past years are associated for trial those received from the Continent and America this year, and a good proportion of these will have to be incorporated with the general stock another season.

To supply the very large demand for cut flowers considerable numbers of Chrysanthemums are grown specially for this purpose in addition to those already referred to. One long span-roof house, which is devoted to the late variety Princess Teck, planted out in borders on each side of the path, and in the course of a week or two these plants will present a remarkable display. There are some thousands of stout healthy buds advancing very steadily and giving promise of some grand flowers. In height the plants are as level as if they had been mown over, and altogether this house will be worth a long journey to see when the blooms are at their best. Outside long beds of Mrs. G. Rundle and other favourite white-flowered varieties have been covered with lights on an improvised framework and matted round, thus bringing the blooms a little earlier, clean, and efficiently protecting them from possible rain or frost.

In other departments of the nursery the Carnations are looking well, the tree varieties now flowering abundantly, an extensive batch of seedlings, including some richly coloured varieties equal in many respects to the best named varieties and distinguished by their robust habit. Pelargoniums, Roses, Azaleas, and many other plants have houses devoted to them, while outside the Dahlias are scarcely over, and the large stock of herbaceous plants still comprises some in flower, Anemone japonica and alba having been exceedingly beautiful.

THE MAIDENHEAD NURSERY.

About twenty minutes' walk from Maidenhead station on the Old Bath Road brings the visitor to Mr. Robert Owen's nursery, whence during the past two years several meritorious novelties have been sent to exhibitions and honoured with certificates. After long experience as a practical gardener, Mr. Owen acquired this land and commenced business as a florist and nurseryman with a specialty, Tuberous Begonias, to which he had previously given much attention, and which have served to render his name familiar to large numbers of horticulturists. Some six or seven substantial and commodious houses have been erected, and these are devoted to the Tuberous Begonias, Ivy-leaf, Zonal, and other Pelargoniums, Ferns, miscellaneous flowering plants, and Chrysanthemums, the last-named forming the feature with which we are now chiefly concerned.

The collection of varieties is a large one, several houses being appropriated to the plants, which are freely grown with the object of producing as many blooms as possible; but probably another season Mr. Owen may take his place amongst exhibitors of Chrysanthemums, as it is intended to grow a portion of the stock for show purposes. One house is partly filled with the excellent late white variety Bonle de Neige, for which Mr. Owen obtained a certificate at the meeting of the Royal Horticultural Society in January this year. It is a free-flowering variety, of dwarf habit, capitally suited for culture in pots, either as a conservatory plant or for cutting, and the period at which the flowers are produced renders it still more valuable. Quite distinct from the Chinese or Japanese Chrysanthemums are *C. carinatum* and *C. frutescens*, but they deserve mention here, since Mr. Owen has formed a group of varieties or hybrids, all very free and varied in colours. That figured in this Journal some time ago—namely, Cloth of Gold, is a very pretty type, but there are several others, such as Cloth of Silver, scarcely less attractive.

Much of the ground has been devoted to Tuberous Begonias and early Chrysanthemums this season, but attention is also being directed to herbaceous plants, of which a good collection is being formed.

BEDDING VIOLAS.

I HAVE read your correspondent Mr. Dean's remarks with much interest in last issue of the Journal in respect to these flowers, and from them I gather that it is generally accepted that cow manure is the best, and I certainly consider it the best for my especial circumstances. In Mr. Dean's quotation of Mr. Baxter's letter on the subject, the latter gentleman appears to give preference to dry cow manure collected from the meadows (rather a tedious operation where it is required in quantity, unless the cows are very plentiful). I am at a loss rather to know why Mr. Baxter prefers the dry manure to that which comes from the cowshed, to which I give preference, and for reasons I have previously shown. Perhaps Mr. Baxter will enlighten me in this, and I am grateful to him for the hint of hot slacked lime, which is new to me. The sudden collapse of some varieties has hitherto been unaccountable, for the plants,

which were apparently in health to-day, are dried up and withered on the morrow, when it is certainly too late to apply anything, and there I take it to be advisable to adopt the old adage of "prevention is better than cure." Mr. Baxter also imagines that I do not put "half enough manure in the ground;" but I scarcely know if that gentleman is in earnest or whether he anticipated chasing the heads of my firm over a gigantic stack of manure and rushing them headlong into the bankruptcy court. I find, however, that I gave (which I did at the time of writing my notes on page 366 from memory) the wrong size of my Viola beds, and gave the size of the beds on the next quarter. The actual size of the beds are, which I have specially measured to-day, November 5th, 5 feet wide and 30 feet long, which makes a very considerable difference in the dressing given, and seeing that my barrows are those hideous box harrows which only know existence in the neighbourhood of London, some idea may be had of the amount given. At any rate I considered it a very liberal dressing, and not only have they done remarkably well under most adverse circumstances, but they appear to have made a lifelong impression upon Mr. William Dean, who, to say the least, is one of the most competent authorities in such matters, and one who has made these plants and their allies the study of many years. My Ardwell Gem does not look to the ground, but shows an equally good front as the Queen of Spring type, but the latter cannot equal in any degree the former for constitution in our light gravel drained soil at Hampton.—E. JENKINS.

GASCOIGNE'S SEEDLING APPLE.

THE fruit illustrated (fig.) represents a medium sized and fair example of the variety in question. Prominence is given to it because

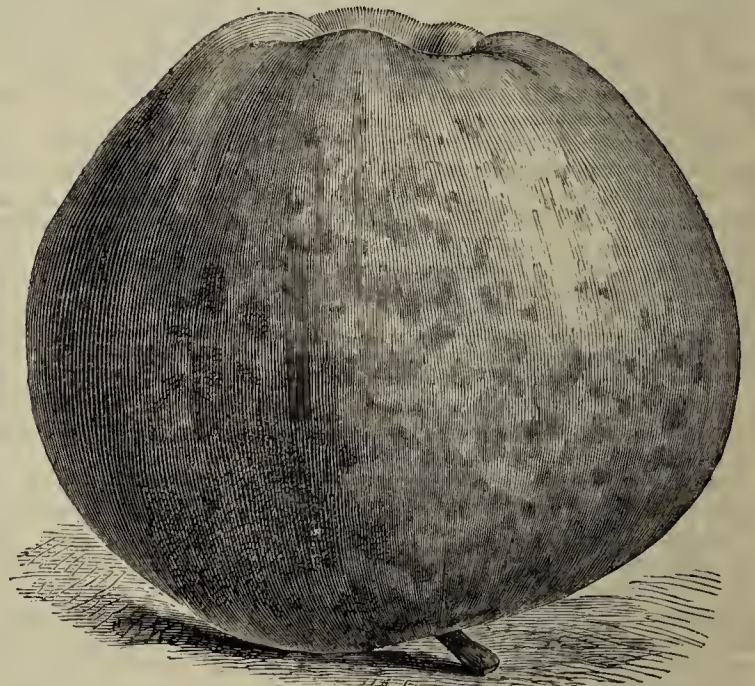


Fig. 61.—Gascoigne's Seedling.

it was quite one of the most attractive varieties in the fruit-room at Chiswick this autumn, and Mr. Barron considered it well worthy of public attention. There are three "Gascoigne's Seedling" Apples described in "British Apples" as having been exhibited at the Apple Congress in 1883. The one under notice is the best of them, and is referred to on page 187 of the work in question as "Dessert or culinary, medium, oblong, pale yellow, streaked, and flushed rosy pink, with a thick bloom, mid-season, very handsome." Our description of the specimen figured is fruit roundish ovate, very prominently ribbed towards the eye. Skin lemon coloured when ripe, marked on the side next the sun with a crimson flush, and broken streaks of the same colour; the base has a greenish grey tinge and covered with a coat of thin russet. Eye closed, with incurved convergent segments set in a deep angular basin. Stamens basal; tube conical. Stalk upwards of an inch long, inserted in a deep funnel-shaped cavity. Flesh white, crisp, juicy, and briskly flavoured with a pleasant aroma. Cells obovate, axile, or somewhat abaxile.

This is a very handsome Apple indeed, and apparently of the Dutchess of Oldenburg type, which is known as one of the best and most abundant bearers of autumn Apples.

CHRYSANTHEMUM NOTES.

NOMENCLATURE.—I deeply regret having hurt Mr. Davis's feelings by my criticism of the N.C.S. catalogue; but he and his colleagues were really too modest, as they have never before breathed a word about

spending "six weeks in corresponding with Latin and French scholars, &c." Their reticence on this point, coupled with the fact that several distinctly English slips were to be found in the work, made me jump to the conclusion that they had not consulted any authorities but themselves, and I am glad to find myself mistaken. Messrs. Thibaut et Keteleer being, as Mr. Owen points out, part English and part French, this latter gentleman makes confusion worse confounded by spelling the last name "Keteeler" in addition to "Keteleer" of the N.C.S. and "Keteller" of Mr. Davis's own catalogue last year.

I could not be expected to know of the existence of Mdlle. Paule Dnfour, as she is not mentioned in any catalogue I have yet seen, but am glad to find that even some Frenchmen believed Belle Pauline to be the correct name for that very capricious variety.

I was quite aware of "Bertier" being a man's name just as George is, yet the N.C.S. Committee have not taken "Mrs." away from "George Rundle." Why then "Madame" from "Bertie Randatler?" Mr. Davis's excuse that they did so for fear of confusion with "Madame Berthier" will not hold water, for on looking through the catalogue I find two Ceres, two Carmen, two Jupiter, two Graziella, two Aurore Boreale, two Delicata, two Duchess of Albany, and two Flocon de Niege, besides Coquette de Castille, James and Jane Salter, Mons. Roux and Mons. Raoux, Gloire de Toulouse and Gloire Toulousaine, Mr. J. Laing, Mons. John Laing, and Mons. J. H. Laing. After this Mr. Davis can hardly complain of my inconsistency. But if the Committee were so anxious to avoid confusion why did they not adopt the English synonym Curiosity? It is an excellent name, and I for one think that English names might with advantage be given more frequently than they are, as the majority of French names present insuperable difficulties of pronunciation to English gardeners and mislead Englishmen generally.

Mr. Davis does not tell us who his Latin correspondents were, and without some proof of the correctness of their views I must decline to accept their substitution of the termination "a" for "um." Why a *Chrysanthemum* is to be feminine instead of neuter I fail to comprehend, especially as the generic name ends in "um." *Chrysanthemum album* plenum surely sounds better than *Chrysanthemum alba plena*. We might just as well have *Oncidium macrantha* or *Sobralia macranthum*, and *Cattleya guttata* or *Saccolabium guttata*. Would Mr. Davis tolerate for one moment such a jumble as that?

TAKING THE BUDS.—I have little doubt of "C. L., Bristol," being right in his criticism on Mr. Molyneux's dates for the above. I followed the directions most carefully, and did not "take" a single bud before the 18th August. I think the 20th was my first, and the result has been that all have been too early, many of the best kinds being over now, therefore never again do I take a bud sooner than Sept. 1st. I am the more convinced of Mr. Molyneux's mistake, because in his concluding article he published some letters from celebrated growers agreeing with his view that the latter part of August is the right time to take buds, but on looking through that list I perceived all his correspondents to be north countrymen—conclusive evidence, I think, that southern growers do not endorse his views on this subject.

I am a trifle hazy as to the geographical position of Swanmore Park, but believe it to be near Southampton, one of the wettest places on the south coast, its climate being not unlike that detestable place Liverpool, where the *Chrysanthemum* flourishes in a way unknown in warmer and drier situations. No; Mr. Molyneux's dates may do very well in cool damp positions, but will not answer for the majority of places in the sunny south; such, for instance, as the northern slopes of the Thames valley.—B. D. K.

BELLE PAULE.—Had Mr. Murphy explained to the readers of the *Journal* in his first notes on *Chrysanthemums* that he had stopped the shoots on Belle Paule, it would have been clear to myself and others that the plants are much dwarfed by the operation of stopping. Referring to his notes, page 362, he says, "This year I have grown it differently—viz., in a highly manured border against a south wall. . . . In habit and foliage thus treated it resembles Eve and Duchess of Albany, at present they are only 4 feet high each." I agree with "*Chrysanthemum, Sussex*," "I do not see any resemblance between Belle Paule and Eve, as Mr. Murphy states there is." At page 412 Mr. Murphy plainly states that his plants were stopped, and are 4 to 5 feet high, hence the conclusion that Belle Paule, a tall long-jointed, and Eve is a close short-jointed variety. There is little or no resemblance between the two varieties. Mr. Murphy says on page 413, that "I feel inclined to doubt that Mr. Owen has not the true variety." If my variety of Belle Paule is not the true one, the Committee of the National *Chrysanthemum* Society made a grave error when they awarded me a first-class certificate for it as the true one. I recommend to Mr. Murphy, Flora, as an early yellow Pompon, because I think without doubt it is the earliest and best yellow Pompon grown. Planted out it is only 2 feet high, and of first-class habit. The flowers are full and of a bright canary yellow. I have been cutting from this variety since the middle of July, and am still cutting (November 6th) abundance of blooms from the same plants.

I am glad to relate that during my twenty-six years of cultivation the *Chrysanthemum* never performed this freak of producing hen-and-chicken flowers. I admit not quite understanding "T. P." until I referred to his note a second time.—ROBERT OWEN, *Maidenhead*.

VARIETIES WORTH TRYING.—The following varieties, which are not generally known, were flowering in Mr. Davis's collection at Camberwell a few days ago, appear to be both distinct and meritorious.

La Marguerite.—A medium-sized true Anemone-flowered variety,

not a hybrid nondescript, colour magenta violet, bold smooth cushion and good guard florets. The bloom will doubtlessly come larger, and then be an acquisition to a stand of choice varieties.

Roi de Japonaise.—The blooms of this variety were not fully developed, and on strong well grown plants they will probably attain a good size. The florets are of medium width and drooping, not twisted, and the colour very bright—reddish crimson tipped with gold. In character the bloom somewhat resembles *Etoile du Midi*, but the varieties are quite distinct.

Edouard Audiguier.—This is a Japanese variety of great promise. The bloom is full and deep, with long fluted florets; colour, rich amaranth with a silvery reflex, which is visible in the short florets in the centre of the bloom, the contrasting effect being very striking. The plant is a strong grower with dark stems and fine foliage—a variety to be "looked after."

Two older varieties worthy of mention are Temple of Solomon, a fine yellow true reflexed variety that, used to be grown thirty years ago, but has seldom been seen of late; and Queen of Anemones, a beautifully formed Pompon with a bright chestnut cushion and maroon guard florets, distinct and good.—AN OLD GROWER.

HARDY BRITISH FRUITS.

ON Friday evening last a very interesting gathering was held at the Queen Victoria Vegetarian Restaurant in the Strand, under the presidency of Mr. Edmund J. Baillie, F.L.S., of Chester. After dinner the subjects of fruit growing, reformed diet, and thrift in food were discussed. The Chairman, Mr. Baillie, gave an address upon fruit-growing, and treated upon the many varied aspects of the question. He urged upon all the necessity of making better arrangements for the sale of home-grown fruits, and pointed out the desirability for organisation on the part of the producers to put their industry upon a footing of fairness. He then spoke upon the educational aspect of the subject, and pointed out how small a proportion of the food of the people was derived from the gardens and the orchards in comparison to what it ought to be if habits of health and thrift were taught and encouraged. Amongst other speakers were Mr. G. C. F. Bartley, M.P., Professor J. E. B. Mayor, M.A. (Cambridge), Dr. Swartwout, President of Columbia University, New York, Dr. Nicholls, Dr. Allanson, Mr. Skinner, and Mr. W. S. Manning. At the conclusion of the meeting the Chairman invited the company to inspect the specimens of fruit arranged upon tables in the room. Mr. Manning had a large and representative collection of Pears and Apples grown in his orchards within seven miles of London; and Messrs. F. & A. Dickson and Sons of the Upton Nurseries, Chester, exhibited a collection of fruits grown upon the trees in their fruit quarters unprotected in their nurseries occupying, as Mr. Baillie explained, one of the bleakest and most exposed situations in the county of Chester. The collection therefore included specimens both from northern and southern districts, and prominent amongst the Cheshire fruits we observed—Apples.—Scarlet Pearmain, King of Pippins, Cox's Orange Pippin, Ribston, Court Pendu Plat, Sturmer Pippin, &c. Pears.—Marie Louise, Louise Bonne of Jersey, Marie Louise d'Uccle, Pitmaston Duchess, General Tottleben, &c.

The meeting was of a most interesting and thoroughly enthusiastic character, and great credit is due to Mr. Manning for his excellent organisation and for his untiring efforts in popularising the movement with which he is connected, and towards the development of which his energies are so constantly directed. The fruits were of splendid quality and were arranged in the order of succession as to ripening, so that the Company might make notes as to the kinds of fruits they should order for certain seasons as they might be required for use. Such meetings cannot fail to do good work and are in every way commendable.



— MESSRS. WM. PAUL & SON, Waltham Cross, writing in reply to "W. R." respecting ROSE MADAME BARTHELEMY LEVET, remark:—"If your correspondent looks once again at our Rose catalogue he will find we have no group of Roses there under the heading of Tea or Hybrid Tea, but two groups under the heading of Tea-scented Roses and their Hybrids."

— RELATIVE TO LA FAVORITE MELON, with which "A Foreman" has been disappointed, "T. H." informs us that he has grown this variety, and it set and swelled freely and proved of good quality; he considers it a very good Melon, and advises "A Foreman" to give it another trial.

— IN Messrs. Sutton & Sons' trial grounds at Reading, amongst many other attractions this season, a plant of *TROPEOLUM SPECIOSUM* on a north wall has flowered. The method of treatment is as follows.

The great difficulty experienced previously was the disinclination of the young growths to make any headway. To obviate this, slates about 6 inches high standing on edge were placed on each side of the plant, thus warding off the winds. Upon the first signs of growth small twiggy sticks were placed for the slender shoots to twine round, a point of importance, thus providing means of support without causing a check. As soon as growth commenced freely water was given to the roots copiously, and the foliage was syringed in the evening after a hot day. These few hints upon the culture of this showy plant may be suggestive to others placed in a similar position.

— THE IPSWICH CHRYSANTHEMUM SHOW will be held on Thursday and Friday, November 18th and 19th. Fifty-eight classes are provided, sixteen being for Chrysanthemums and other plants in pots, £15 are for cut blooms and floral decorations, the remainder being for fruit and vegetables. The prizes range from two guineas to 2s. The Hon. Sec. is the Rev. H. A. Berners, Harkstead Rectory, Ipswich.

— GARDENING APPOINTMENT.—Mr. Richard Weller, recently foreman at Balrath Burry, Kells, Co. Meath, has been appointed gardener to Sir Croker Barrington, Bart., Glenstal Castle, Murroe, Co. Limerick.

— MR. JOSEPH WITHERSPOON sends us what he calls a small bunch of Grapes, accompanied by a photograph of his vinery to show that his Red Rose boiler, which is exposed in the house for economising heat, does not impair the fruitfulness of the Vines nor the quality of the Grapes. The photograph represents a very fine crop, and the sample bunch sent is in every way satisfactory.

— "LIKE your correspondent, 'Foreman,'" says "T. T.," "I purchased a packet of LA FAVORITE MELON SEED, the plants raised from which I placed out in frames with other varieties—viz., Hero of Lockinge Read's Scarlet-flesh, and Eastnor Castle. Hero of Lockinge I consider one of the best for frame culture, which ripened their crop at the proper time. La Favorite sets its fruit very regularly, they swelled to a large size and netted well, but never showed any sign of ripening. I applied fresh lining to the frames and kept the plants dry at the root, but they never altered in the least, and I finally had to throw them away when the frames were wanted for other purposes."

— MR. W. JUPP sends the following note on making a VINE BORDER:—"First of all, when making a Vine border, take out the soil to the depth of 3 feet 6 inches, then give a layer of concrete 6 inches deep, sloping 1 inch to a foot from back to front. The drain should run parallel along the front, then cross drains, which should run back to the main drains about 4 to 5 feet. Place over the concrete and drain about 9 inches depth of broken brick rubbish, finishing with coarse gravel, and above this place turves grass downwards. The compost for Vines is of great importance; a good friable loam from pasture land is the best if it has been stacked about twelve months and well exposed to the sun. The loam must be rich and not sandy. To every eight cartloads of loam add one of lime rubbish, charcoal, burnt clay, decayed cow manure, and about three or four hundredweight of broken bones. Mix this well three or four times and it will form an excellent border."

— NOTICING that the SYRIAN GRAPE is objected to by one of our correspondents, "G." writes:—"I wish to state that this Grape, when well grown, is noble both in bunch and berry, and there are many of the keeping Grapes that are worse in flavour. Of late white Grapes it certainly is far above the others. Ripened up to a pale yellow or amber it has a firm crackling flesh, very much appreciated by some, and the quality is certainly surpassing that of Trebbiano and Calabrian Raisin. Gros Colman is not to be named in the same category with the Syrian, which is devoid of that earthy taste so characteristic of the Gros Colman, and not entirely absent from Gros Maroc and Gros Guillaume. In large bunches Syrian is not seen at its best, nor any Grape for that matter, but if allowed to carry only medium sized bunches, and not overcropped, the oval berries become very fine in size, ripen of a fine yellow or amber, and the quality is good. The flavour is not, of course, equal to Muscats, yet it bears comparison with any Grape classed as late, and of the thick-skinned order. For Christmas there is no nobler white Grape than the Syrian."

— "A." desires to have the experience of growers of Roses on the SEEDLING BRIAR as regards the production of suckers. He finds the seedling Briar is just as prone after it gets a little aged to throw up suckers as the veritable Dog Rose on which the standard and other Roses

are huddled. "It is the nature of the Briar to emit underground stolons or suckers from under ground, appearing at some little distance from the stem as separate plants, and these are little less determined than in the case of stocks taken out of hedges or raised from cuttings. This is not written to disparage the seedling Briar as a stock, but as showing the value of the Manetti as a stock where suckers are not wanted, as they only arise from the stem, a consequence of not removing the eyes at the time of inserting the Manetti cuttings."

— "MORE than a week ago," writes "S. P. E. S.," "when walking along a bye-way leading across some fields a few miles distant from a city of the midlands, I was much struck by the beautiful effect produced by dense masses of the golden-flowered CORN MARIGOLD, CHRYSANTHEMUM SEGETUM, which were luxuriating amongst the root crops growing in a light sandy soil. In one case they had been cleared off a portion of the ground, and were lying in ridge-like lines, and there apparently they had been allowed to remain for weeks, for the weeds amongst them, which had been subjected to the same treatment, were in a state of decomposition, and above the decaying mass rose the erect flower stems of the Marigold, bearing such a display of brilliant golden flowers as in many a cultivated plant would more than repay the grower for the exercise of no end of care and attention. I might have plucked literally loads of them, but I contented myself with gathering a modest handful, and now some of them present almost as fresh an appearance as when they were placed in the vase that is before me as I write."

— THE same correspondent remarks—"C. segetum reminds one very much of HELENIUM DOUGLASSI, which, by the way, is one of the most beautiful of our hardy annuals, but I can find no record of it in any book that I possess, although I have on more than one occasion endeavoured to hunt it up. I have known it substituted by continental seed growers for Oxyura chrysanthemoides, another of Douglas's Californian introductions. The Helenium will thrive almost anywhere."

— A CORRESPONDENT, "J.," who has recently visited AUCHENDRAIN, the well-known seat of Sir Peter Coats, about seven miles from Ayr, remarks that—"Under the practical skill and care of Mr. Currie, who has had charge there for over twenty years, the garden has long been known to be one of the finest in the county, and it is with a feeling of regret that we learn that he is about to leave for America to join his sons there in their increasing florist trade. We, as brethren in the trade will—I am sure that all who had the pleasure of knowing him will—cordially wish him success in his new undertaking. We learn that Sir Peter Coats has secured the services of an able successor in Mr. James Thompson, who is at present gardener to Samuel Boyd, Esq., Marchmont, Dumfries, and for some years previously foreman under Mr. Murray, the able head gardener at Culzean Castle, Maybole, and under his management we are well assured the place will keep up its high reputation."

— THAT gardeners in Scotland know how to enjoy themselves may be gathered from the following paragraph entitled A GARDENERS' BALL AT PERTH. The ball season was inaugurated on the 29th of October, when the practical gardeners in the county of Perth held their third annual assembly in the Opera House ballroom. The hall was most artistically decorated for the occasion. A prominent feature in the decorations was the large number of appropriate mottoes which adorned the walls, and which reflected great credit upon the gardeners and the friends who assisted them. There were fully 100 ladies and gentlemen present, including many from a distance, several who had recently left Perthshire coming from other counties. Messrs. J. Macdonald and W. M. Penny officiated as M.C.'s, and by their tact and good management contributed very much to the pleasure of the large gathering. The music was supplied by Mr. J. H. Miller's Quadrille Band, and as it was augmented by the addition of several of the leading performers in Poole's Diorama Orchestra it was more than usually good, and the programme embraced all the newest and most fashionable selections. The refreshments were purveyed by Mr. W. H. Harley of the "Bee" Restaurant, who catered to the assembly in a way that gave complete satisfaction. The entire proceedings passed off with the greatest *eclat*, the company breaking up at an advanced hour in the morning, with the expectation of having another equally pleasant reunion next year.

— AT the ordinary meeting of the ROYAL METEOROLOGICAL SOCIETY to be held at 25, Great George Street, Westminster, on Wednesday, the 17th inst., at 7 P.M., the following papers will be read:—"The Gale of October 15th-16th, 1886, over the British Islands," by Charles

Harding, F.R.Met.Soc.; "The Climate of Carlisle," by Thomas G. Benn, F.R.Met.Soc.; "Results of Hourly Readings derived from a Redier Barograph at Geldeston, Norfolk, during the four years ending February, 1886," by E. T. Dowson, F.R.Met.Soc.; "Results of Observations taken at Delanassau, Bua, Fiji, 1881-1885," by R. L. Holmes, F.R.Met.Soc.

— IN December of last year a plant of *STAPELIA GIGANTEA* was noted as flowering in Mr. Major's collection of curios at Cromwell House, Croydon. The plant is now, and has been for some time, flowering again, the flowers being produced from near the base of the Cactus-like stems. They are remarkable alike from their singular appearance, and in attracting large carrion flies, that "strike" them, maggots resulting, which seem quite at home crawling about the segments of the flowers. These are stout, resembling in texture and appearance the skin of an animal, being dark purplish brown in colour and thickly covered with long silky hairs. They recurve like those of a *Lilium lancifolium*, and when extended each flower is 6 inches across. The odour from the flowers, especially in the morning, is so offensive that persons whose olfactory nerves are at all sensitive cannot long remain in the house in which the plant displays its peculiar charms to its owner, his gardener, and the gadflies.

WATERTIGHT ASHPITS.

HOT v. COLD WATER.

I AM pleased to find Mr. Bardney favouring with a detailed reply on this question, also Mr. Taylor, "Albion," and Mr. Muir so strongly supporting my theory. Mr. Bardney is quite right in saying that the system is not a new one, yet I am strongly of opinion that it is not nearly so general in gardens as it deserves to be. In the article penned by me on stoking nearly two years ago I stated the plan was copied by me from large furnaces. My contribution was given the leading position in the *Journal* of November 27th, 1884.

I am not surprised to find that Mr. Bardney does not lay much stress upon his theory. From this we may fairly conclude that the cold water at any rate has shown no very striking results. For this I was in some degree prepared, for by no means could I comprehend how anything approaching a cooling tendency could be obtained. This is confirmed by the fact that Mr. Bardney's large boilers are not proof against twisting, and yet three advantages remain—better draught, no dusty ashes, and no sulphurous fumes from the clinkers, if they be at once put in the ashpit to stack, as in our case, but this latter practice would operate a little against Mr. Bardney's system, as it would raise the temperature of the water. I have tried the flow system in order to test the lowest temperature, but unless a very considerable quantity of water is used there seems to be no means of keeping it below 70°, and then only with open doors. With a tap and piece of hose, as mentioned by Mr. Taylor, the labour of refilling is very trifling indeed, and is done while the stoker is brushing up the stokehole twice each day.

Mr. Bardney hardly, I think, draws a fair comparison in the case of his gold medal boiler heating 1500 feet of 4-inch piping in the conservatory under his care during the last eight years. I have not had the pleasure of visiting Norris Green, much as I have long desired to do so, but if I am not wrongly informed some very fine and well-grown Camellias help to grace the conservatory there. This being so, it is not very difficult to estimate the amount of hard work it is called upon to do. The same boiler employed to heat some other departments might have equally as much to do in three years. The quantity of piping so wisely liberal for a conservatory doubtless represents ease rather than hard work.

I hope Mr. Bardney will not conclude that I have any notion that stoking may be in fault under his care. My remarks are purely confined to theory. On the other hand, I admit that it is quite possible a good system of stoking with dry ashpits would go far to compensate for some bad habits of stoking with watertight ashpits. No one, perhaps, knows better than Mr. Bardney that it is alone the systematic carrying out of a good scheme which means economy. Evidently the insertion of the sentence through an oversight will prove to be a useful mistake. Mr. Bardney invites opinions regarding the Cornish form of boilers or the use of thinner bars. About the latter I think there can hardly be two opinions. Thinner bars of course mean so many more openings, less space between each for waste, and a correspondingly greater amount of outer surface upon which the cool air or vapour may act.

It has been within my power to see many boilers for various purposes, and have as freely used such opportunities. Some have had water beneath, and some have not. As regards the fires belonging to locomotives and the like, it has to be considered what a vast difference there is between a fire running many hours during the day unattended, and, say, from 10 P.M. to 6 A.M., during which time the clinker is forming sometimes between the bars, and eventually cooling into a solid mass to be removed as best it can, though we have no trouble on this point—to use the commonest expression, they form as "flat as pancakes." In the case of locomotive fires this never happens owing to constant attention whenever in motion, nor are clinkers formed in the same proportion from good coal as from many kinds of coke which is most generally used in gardens. With most mill furnaces I do not think it is of very great importance whether there be water in the ashpits or not. Anyone who may have watched the

regular care in their management, the coal rake with broad teeth being plied once in every ten to twenty minutes, the clinkers leaving mostly in small and roundish particles, while the fire is regulated into a rather uniform thickness to 6 inches, the new fuel added close to the door, to be pushed forward as it gets burnt through, must perceive that a strong current of cool air passes freely among the bars, and rarely do they become red hot more than half an inch downwards. How many gardeners or stokers under the best of systems and management have needless labour through want of taller chimneys, or an additional row or two of piping. Probably there are more crooked bars owing to the latter than any other fault.

Mr. Bardney seems a little curious with regard to the absorption of the vapour by the bars. I have very carefully watched this process several times, and have come to the conclusion that there is nothing to expel, that no sooner is the vapour absorbed than it is, in the service of cooling the bars, consumed.—E. BURTON.

I HAVE read the various articles which have appeared in the *Journal of Horticulture* bearing on this subject, expecting to find in some of them the results accruing from steam or water vapour passing over red hot iron and through a charcoal fire. Excepting Mr. Taylor's reference to the oxygen derived from the water, none seem familiar with the changes which occur; and although my pen is not able to do justice to this, to all appearance important subject, it may influence those of more experience and greater knowledge to "lend their light and leading" towards the end in view.

Instead of cold water in the ashpits I would strongly recommend hot, or steam, under the following reasons. As it is due to the presence of oxygen in the atmosphere, and which forms about one-fifth of its bulk, that all substances used for fuel are combustible, and as one-third by volume of water is oxygen, the other two-thirds being hydrogen, it will be seen that a greater amount of oxygen can be obtained from steam than from equal volumes of it and atmospheric air, and thereby combustion is facilitated by mixing the two. It is of interest to know what influence the red hot iron bars have on steam passing over them, also the changes which take place in it passing through a charcoal fire.

A certain portion of the steam, or water vapour, which comes in contact with the red hot iron bars is decomposed, the iron taking up the oxygen and setting the hydrogen free. That part of the steam which passes the red hot bars unchanged undergoes a similar decomposition in coming in contact with the red hot charcoal, the charcoal taking up the oxygen and forming carbonic acid gas. That portion of this carbonic acid gas which passes through the centre of the fire takes up another atom of carbon in the molecule, converting it into carbonic oxide, but on leaving the fire and coming in contact with oxygen it takes up another atom of oxygen, and is carried away by the draught in this form (carbonic acid gas).

The free hydrogen which has been liberated by the red hot iron bars and charcoal passes through the fire unchanged, excepting that a small percentage may unite with other elements eliminated by the burning fuel, its combustion taking place on coming in contact with oxygen, the product being water. Now we know that the greatest heat the chemist has ever obtained has been by the combustion of these two gases—*e.g.*, the oxyhydrogen blow-pipe. This is the principle upon which is based the economy of having water in ashpits. However, the oxidation of the bars must not be overlooked, as this oxidation or rusting means their destruction—not their preservation, as some seem to imagine—and necessitating their frequent renewal. This rust will, to a certain extent, prevent the clinkers taking hold of the bars, because the rusted part will give way with the clinkers; yet a greater draught will be occasioned by the greater heat of the oxygen and hydrogen burning, which will have its influence in keeping the bars cold.

To be able to utilise to the full the benefit derived from steam as a supporter of combustion a certain quantity of air ought to be allowed to pass in by the furnace door. I have held the opinion for some time that a jet of steam playing under the bars of a furnace would be of greater assistance in keeping up a temperature than either hot or cold water in the ashpit, but have not had an opportunity of proving this. Of course it must be remembered that water evaporates at all temperatures, and hot or cold will always form an auxiliary in the combustion of coke, coal, and most substances used for fuel. Yet I do not wish it to be inferred that steam alone will support combustion. I believe that it must be mixed to a certain extent with air before it is of service for that purpose, and the extent to which it is advantageous to mix it will depend upon the size of the fire.

From these statements it will be seen that the colder the water the less the benefits derived from its presence in the ashpit so far as economy in fuel and a greater heat is concerned; yet one is able to remove the ashes with impunity.—J. RIDDELL.

INDIAN EXPERIENCES.

(Continued from page 408.)

INTERSPERSED amongst the Cocoanut tree are groups of Areca Palms, the fruit of which is so extensively chewed by the natives, in conjunction with the Betel leaf, a species of Pepper, Piper Betel. This is perhaps the most graceful of all the Palms found in India; stem tall, straight, and slender, surrounded by a symmetrical cluster of fronds, all forming a very beautiful object. I think it was Sir J. Hooker who aptly described the tree as like an arrow shot from Heaven.

Everywhere nestling amongst this belt of Palms are to be seen native

huts, with framework of Coconut timber and sides and tops of Coconut leaves. The natives of this coast have an idea that the nearer the trees are to their homes the better will they grow and the greater will be the yield of fruit. A few acres of these trees is, to the native possessor, quite a fortune—say 500 to the acre, and the estimated revenue from nuts and toddy at Rs. 1, or 2s. per tree, or £50 per acre. Alongside the roads intersecting this belt of Palms are numerous fine specimens of the Jack Fruit tree, *Artocarpus integrifolia*, and the Bread Fruit tree, *Artocarpus incisaefolia*, the latter a very handsome tree. Many flowering trees may also be seen, such as *Poinciana*, *Lagerstroemia regia*, &c., &c. Between this coast line of Palms and the foot of the Western Ghats is a comparatively flat country varying from fifteen to twenty-five miles in width, and intersected by numerous backwaters navigable for small craft from the sea to the very foot of the hills. This tract is covered at intervals with scrub, hardwooded timber of various kinds, large Banana plantations, Rice fields, and Pepper gardens. The latter plant is grown in small gardens in close proximity to the native huts and villages, and is trained to the thorny stems of the *Erythrina indica*, forming high thick columns of beautiful foliage, and in the season clustered with the Pepper fruits like miniature bunches of Grapes, the supporting tree itself making yearly a splendid show of scarlet heads of blossom.

A few days' stay at Calicut gave me an excellent opportunity of inspecting and admiring this wonderful wealth of tropical vegetation, and although the heat was very oppressive during the day and the mosquitoes troublesome during the night, I yet felt regret when the time came for me to leave the scene that had so struck my imagination.

My journey from Calicut to the foot of the Ghats was performed in a bullock coach, and overnight. Arriving at daybreak at the rest house close under the foot of the mountains, I found a pony from the Coffee Estate awaiting my arrival to take me to the top of the pass, a distance of some nine or ten miles, through a magnificent forest the whole way. After leaving the rest house I rode through a belt of gigantic Bamboo clumps interspersed with handsome specimens of the Teak and other hardwooded trees; the canes of these clumps rising in many instances to a height of from 60 to 70 feet, erect for about half the length, then gracefully bending over like colossal sheaves of Wheat rivalling the coast belt of Palms in gracefulness and beauty. As I began the ascent of the pass, the Bamboos became smaller and smaller, and amongst the more stony and arid portion of the slopes might be seen numerous examples of Cycads rearing their splendid heads, whilst in the cool shady ravines Tree Ferns waved their beautiful fronds. As I ascended, this vegetation gradually gave place to the primæval forest of the Western Ghats, one of the wonders of India, so dense that the leafy tops of the mighty trees completely shut out the midday rays of the tropical sun.

I was alone in this half-darkened pass in the mountains, and all was silent in the early morning air save the occasional sound of an invisible mountain stream, as it sprang from rock to rock in the deep, dark ravine below, or now and then the boom, boom, of the great Wanderoo, or black monkey of Malabar, as it sprang from branch to branch far overhead. The scene was weird in the extreme in this grand Cathedral of Nature, but for me it had its charms. I had not unfrequently pictured to my mind what a real tropical forest must be like, but the reality far exceeded my expectations, and I felt on that—to me—memorable morning, as I frequently paused to gaze on the scene before me.

Few signs of animal or bird life were to be seen save the monkeys before alluded to, or a pigeon or woodpecker of splendid plumage crossing the path, and now and then a flight of paraquets. These forests, unlike those of more temperate climates, are evergreen, with an almost impenetrable undergrowth, consisting of species of Bamboo, Calamus, Ficus, Tree Ferns, &c., &c., and even the stems and tops of the giants of the forests are grasped and entangled with huge rope-like climbers, making altogether a wonderful mass of evergreen vegetation. At intervals might be seen the stem of a huge tree clasped from root to branches by a close-fitting network formed by a species of parasitical Ficus, which in the course of time so retards and clogs the functions of the tree it holds in such close embrace, as to invariably cause its death. This particular Fig, I have been told, is named by the planters of Ceylon a Colombo Agent, a very significant term! The high bank or cutting formed in the process of making the road through the pass in the mountains was clothed with a mantle of Ferns, Lycopods, Mosses, Impatiens, and many other dwarf flowering plants, leaving not an inch of ground to be seen, such is the luxuriance of the vegetation in this region of the South-West Monsoon. The average rainfall towards the summit of the range being about 280 inches.

Gaining the crown of the ridge—at this point about 3000 feet above sea level—I found the same black forest to extend for a considerable distance down the eastern slope, broken only at intervals by clearings of from 100 to 300 acres in extent for the cultivation of Coffee. Proceeding eastward, this forest gradually gives place to a perfect sea of hardwood and Bamboo jungle—the latter predominating—and stretching right away to the Mysore frontier, and into the Mysore country as far as the eye can reach. Not far from the top of the Ghaut I rode on to the first Coffee estate I had seen, and was most hospitably received by the resident planter. The Coffee plant at that time of year (December) looks its best, picking operations are in full swing, and the estates are generally at that season free from weeds, and everything was tidy and in order. I was charmed with my first view of a plantation, for the Coffee is unquestionably a very beautiful shrub, and when in full berry, as it was on this my first acquaintance with it, I thought I had never beheld a more beautiful plant, and a few months later, when I saw it in full flower, I simply put it down as the queen of all evergreen shrubs.

Towards the afternoon I continued my journey, and before nightfall arrived at another estate, in what is called the Bamboo district, where I stayed the night, and was treated with the greatest kindness and hospitality by the manager, a Mr. James Boosey, who had been a very successful gardener in England, and as a Coffee planter in the Wynaad was still more successful. I had the pleasure of his friendship throughout the whole of his subsequent residence in India, and was greatly grieved when I heard of his sudden death in England, about the year 1875, while on a visit for the good of his health. The estate he was then managing for a Bombay firm was about 150 acres in extent, and the Coffee trees, all in full bearing, very healthy, and the whole plantation in excellent condition. The estate was situated in South Wynaad, and until Mr. Boosey set the example of systematic manuring and scientific culture, it was too much the custom to dibble in the Coffee seedlings, heedless whether the tap roots were turned up or not; keep the plantation as clear of weeds as possible, prune in some instances by hacking the trees to pieces after crop was gathered, and in others leaving it entirely untouched, and trusting to Providence for a yearly bumper crop. With this mode of treatment splendid crops were undoubtedly gathered from the virgin soil of this district for years in succession without the aid of manure, but the exhausting system invariably told in the long run, in "gappy" estates, short crops, and at last utter decay. I can remember that Mr. Boosey's idea was to begin at the beginning with proper cultivation and pruning, giving as much manure as was available after the plants yielded their maiden crop, and the result of his mode of treatment on this particular estate was heavy paying crops of Coffee annually for a great number of years, the estate, in fact, being the model one of the district. It may here be mentioned that at that period and for many years later it was the custom of the Bombay capitalists to send anyone they could find to the Wynaad to open and superintend estates for them, it mattered not what profession or calling they belonged to. At the time of my arrival in the country out of some eighty to 100 superintendents there were not more than three professional gardeners or agriculturists; the rest were made up of ex-navy officers, captains of trading ships, young men from England who had been plucked for the Civil Service, carpenters, boys fresh from Eton and Oxford, ex-army captains and colonels, clerks from Bombay, civil engineers, drapers, and pickle merchants from Finsbury Pavement, &c. I by no means wish to infer from this that many of the above did not prove good and successful planters; on the contrary, a certain percentage took to the life of planting with a keen zest, were not above receiving and acting upon information from more experienced men, the result being success, but in the majority of instances the reverse might be said. I was instructed as to the proper mode of planting, pruning, and general cultivation of the Coffee tree after I had been in the district some twelve months by an ex-fourth officer of a P. and O. steamer, whose term of office as superintendent of a plantation had not much exceeded three weeks.

After a very pleasant and instructive evening spent with Mr. Boosey, who, by the way, entertained me with the utmost hospitality, I next morning started on my journey north on horseback. The track lay through Bamboo jungle mostly, with occasional open glades. I had several large rivers to cross, and the ride, a distance of nearly forty miles, took me the whole day, and proved to be the hottest and most trying part of the whole journey from England.—PLANTER.

(To be continued.)

ROYAL HORTICULTURAL SOCIETY.

NOVEMBER 9TH.

EXHIBITS were not very numerous before the Fruit and Floral Committees on the above date, but the conservatory contained a magnificent display of Canadian Apples and Gourds, some of the latter being enormous grotesque fruits.

FRUIT COMMITTEE.—Present: T. Francis Rivers, Esq., in the chair, and Messrs. H. J. Veitch, J. Smith, G. Norman, J. Burnet, G. T. Miles, J. E. Lane, J. Woodbridge, W. Warren, A. W. Sutton, R. D. Blackmore, Harrison Weir, and Phillip Crowley.

Mr. Edward Woodall, St. Nicholas House, Scarborough, exhibited a bunch of a seedling Grape named Mrs. Clark, which was said to have been obtained from a cross between Black Hamburgh and Gros Colman, and was described as ripening four weeks later than Gros Colman in the same house. The Committee expressed a desire to see it again at the next meeting, and advised that specimens of the foliage be sent to Mr. Barron at once. Mr. Bowman, Hylands Park, Chelmsford, sent a bunch of Winter King Grape, which has been shown before on several occasions, and they considered it as identical with Gros Maroc. Mr. B. Gidley, Hoopern House, Exeter, sent a Pear named Gidley, but the three fruits were over-ripe, and six good samples are required according to the rules of the Committee. Mr. W. Roupell contributed fine samples of Apples Cox's Orange, Cox's Pomona, and Lady Henniker, for which a cultural commendation was awarded. Mr. Perkins, Thornham Hall Gardens, Eye, Suffolk, showed four fruits of Dell's Green-flesh Melon, which were found to be very unsatisfactory in flavour. Messrs. Lane & Son, Berkhamsted, were awarded a cultural commendation for sixty large and highly coloured fruits of Apple Prince Albert. Mr. H. M. Roberts, The Brewery, Ivinghoe, Tring, showed some samples of English dried fruits, such as Damsons, Apples, &c., a vote of thanks being accorded, and the experiment was considered very interesting. From Mr. Toogood, Peterborough, came a seedling Apple; from Mr. H. Divers, Ketton Hall, came two dishes of Plums and samples of Apple Carlton Seedling; and Messrs. J. Veitch & Sons, Chelsea, exhibited fruits of Apple Prince Bismarck, all of which were passed without any award.

FLORAL COMMITTEE.—Present: G. F. Wilson, Esq., in the chair, and Messrs. Shirley Hibberd, W. Wilks, H. Bennett, W. Bealby, G. Paul, H.

Cannell, G. Duffield, H. Herbst, T. Baines, W. Holmes, C. Noble, H. Ballantine, J. Dominy, H. M. Pollett, James O'Brien, Hugh Low, E. Hill, and A. F. Lendy.

small narrow whitish leaves. Mr. Tautz, Hammersmith, was accorded a vote of thanks for flowers of *Cypripediums Lceanum superbum* and *Lawrencianum*, a similar recognition being adjudged to Mr. Measures of



Fig. 62.—AMARYLLISES.—1, MRS. W. LEE; 2, PERLOTI; 3, G. FIRTH. (See page 423.)

Collections of new Chrysanthemums from Messrs. J. Veitch & Sons, H. Cannell & Sons, W. Bull, and Robert Owen formed the chief floral attractions of this meeting, several of the most promising novelties being honoured with certificates. Messrs. J. Veitch & Sons also had a pretty miniature *Panicum* named *Oplismenus albidus*, and Indian species with

Camberwell for *Lælia præstans rosea* with five good flowers. A bronze medal was awarded to Mr. R. Clarke, Twickenham, for a large group of *Cyclamens* in pots, healthy profusely flowered plants, the dark red varieties predominating.

First class certificates were awarded for the following:—

Chrysanthemum Coquette de Castille (W. Holmes, Hackney).—A Japanese variety, with narrow fluted slightly recurving florets, of a blush tint or delicate pink. The blooms were of fine form and substance.

Chrysanthemum gloriosum (J. Veitch & Sons).—One of the Japanese section, with long, slender, partly tubular, bright, clear, yellow twisted florets.

Chrysanthemum White Ceres (J. Veitch & Sons).—A bold Japanese variety, with long, flat, straight, white, or faintly tinted florets, making a fine bloom.

Chrysanthemums Phæbus (J. Veitch & Sons), *La France*, *Eynsford Gem*, *Admiral T. Symonds*, and *Jane* (H. Cannell & Sons).—All these have been previously noted. The first was figured in this Journal last week, and the rest is described in the report of the Crystal Palace Show.

Amaryllis Lady Mayoress (J. Veitch & Sons).—One of the autumn-flowering group, obtained from a cross between *A. reticulata* and a variety of *A. Leopoldi*. It is an exceedingly handsome hybrid, with large beautifully formed flowers, deeply veined and suffused with rich rosy red, and having a broad well-defined bar in the centre of each lobe. It is one of the best of the group.

Angræcum aviculare (Sir Trevor Lawrence, Bart., M.P.).—A graceful species, bearing racemes of twelve or fifteen flowers, the sepals and petals narrow, white, and reflexed, the spur 3 or 4 inches long, and curved.

Primula capitata major (G. F. Wilson, Esq.).—A variety distinguished by the larger size of its flowers and heads.

Clerodendron nutans (W. G. Head, Crystal Palace).—An old but neglected East Indian species, which was introduced in 1820, and is occasionally met with in botanic gardens. It has long drooping racemes of white flowers, with long slender white filaments, and a red-tinted calyx. The leaves are narrow, lanceolate, and waved, and the margin, the plant being of free growth, and succeeding well in a warm conservatory or intermediate house.

Pontederia crassipes delicata (Mr. Ross, Pendell Court Gardens).—A variety of this curious aquatic plant, with flowers of a soft blush tint.

CHRYSANTHEMUM SHOWS.

HAVANT.—NOVEMBER 3RD AND 4TH.

THE third Show of this flourishing young Society was held on the above-named date in the Town Hall, and was a great success. The growth of the Chrysanthemum in this neighbourhood has made rapid strides; so enthusiastic have the local growers become that a capital exhibition can now be held, the exhibits being contributed solely by local growers. Very fine were the Japanese blooms staged, but the incurved classes contained some inferior blooms, being rough, the result of the excessively hot weather experienced in August. Groups of Chrysanthemums showed a marked improvement on the two previous years. There were four entries, all of which were good, each one being arranged in the four corners of the Hall had quite an imposing appearance. In the first-prize group from Mr. A. Payne, gardener to Mrs. E. Smith, Havant, were some splendid blooms, mainly Japanese varieties, and being lightly arranged was much admired as it was meritorious. The second prize went to Mr. Roberts, gardener to E. R. Longcroft, Esq., Havant, whose group was more closely packed, nor were the flowers of such good quality. The third prize went to Mr. J. Agate, nurseryman, Havant, whose plants were well suited for the purpose, being dwarf and with splendid foliage, but the flowers were rather small. Specimen plants were well shown by Mr. C. Penford, gardener to Sir F. Fitzwygram, Bart., Leigh Park, Havant, whose collection of eight plants composed of half incurved and half Japanese were capital specimens 3 to 4 feet across, neatly trained and carrying from seventy to eighty flowers of good quality. The second-prize collection was a long way behind, being simply natural-grown plants, and these not of large size.

Cut blooms were staged in large numbers, competition in most classes being severe. For twenty-four varieties, twelve Japanese and twelve incurved, all distinct, Mr. Penford was easily first, his Japanese varieties being very fine, Madame C. Audignier, Comte de Germiny, Maiden's Blush, Margaret Marrouch, and Val d'Andorre, all being grand; the best incurved were Nil Desperandum, Prince Alfred, Jeanne d'Arc, and Lord Wolseley; the whole being fresh and solid. Mr. Payne was second; Beauty, Thnnberg, and J. Delaux were his best. Mr. C. Hoskins, gardener to J. Wilder, Esq., Stansted Park, Emsworth, was third. For twelve Japanese Mr. Penford was again first with blooms similar in character to his former stand. Mr. Hoskins was second with a capital stand; third Mr. Payne, in this there were eight entries. Mr. Penford followed up his former successes by staging the best twelve incurved flowers, his Nil Desperandum and Lady Hardinge being especially fine. Mr. R. Woodbine, gardener to C. P. Boyd, Esq., J.P., Havant, was second with blooms rather rough; third, Mr. Roberts. For six Japanese Mr. Newell, gardener to H. M. Green, Esq., Havant, was first, and for six incurved Mr. Moseley, gardener to J. Taplin, Esq., was easily first. Mr. Penford once more was the winner of first prizes by staging the best twelve reflexed varieties, and the same number of Anemone kinds with very fine produce, his Pink Christine in the reflexed, and Fabian de Mediana in the Anemone class being specially noteworthy. Mr. Woodbine and Mr. Payne were second respectively. Some splendid blooms were shown in the amateurs' classes by the Rev. J. Wells, Havant.

Table plants, Primulas, and Solanums by Mr. Moseley, Mr. Hoskins, and Mr. Kinchott, gardener to Mrs. Hodgkinson, Havant. Grapes, both black and white were well staged by Mr. Penford; his Alicantes were very fine in bunch, herry, and colour. Mr. E. Smith, gardener to Mrs. Learmouth, was a good second with Alicante in capital condition. Mr. Fuller, gardener to Sir J. Jervoise, Idsworth House, Horndean, staged the best four dishes of Apples, followed by Messrs. E. Smith and Penford. Mr. Roberts had the best four dishes of Pears, followed by Mr. Moseley.

Vegetables were a strong feature of the Show, the best eight varieties being staged by Mr. Fuller; Brussels Sprouts, Celery, and Carrots being especially fine. For the best collection of salading a large number of dishes were staged, and for which a special prize was offered by Lieut.-Col. Sandeman, Hayling Island, which caused much interest in this class. Very representative were the collections staged, and all were very close in merit. Ultimately the first prize was awarded Mr. E. Smith, who had twenty-one kinds, his Endive and Beet being especially good. Mr. Hoskins was a close

second, while Mr. Fuller was a capital third. The arrangements were in every way satisfactory, reflecting great credit on the Committee and the Hon. Secretaries, Messrs. Fuller and Norkitt.

STOKE NEWINGTON.—NOVEMBER 4TH AND 5TH.

AFTER holding their Shows for many years in the Defoe Road, Stoke Newington, this Society has transferred them to the Highbury Athenæum, and the first one was held there on the dates above given. As is expected of such an old pioneer Society, the Exhibition was very satisfactory, plants and blooms being numerous and well shown. The plants are always good at these shows, especially those from Mr. W. Monk, gardener to W. Fowler, Esq., Leytonstone, who has so frequently won the premier awards for trained specimens. He again repeated his former success with nine fine even plants. Mr. K. Bass, gardener to Miss Cotton, Leytonstone, was also a good exhibitor in the plant class. Mr. S. Gilbey, Mr. Lovegrove, Mr. G. Saunders, and Mr. Davey were competitors in several classes, securing second and third-rate awards. Mr. J. Wittey had the best group, a testeful arrangement of plants and good selection of varieties.

Incurved blooms are generally distinguished by their high finish and symmetry at the Stoke Newington Show, and this occasion was not an exception to the rule, for though perhaps somewhat wanting in size they were remarkable for their cleanness and good form. One of the most successful competitors was Mr. Bettesworth, gardener to R. Ewing, Esq., Burton Grange, Cheshunt, who was accorded the first prize for thirty-six handsome blooms. Mr. W. Monk was similarly successful with twelve blooms, while for six Mr. W. Davey, gardener to C. Paine, Esq., Stamford Hill, was the chief prizetaker. In the class for Japanese blooms Mr. Bettesworth repeated his previous success, taking first place with twenty-four varieties, which were represented by excellent blooms. Mr. H. Smith, gardener to W. H. Sewell, Esq., Warren Hill, Loughton, followed in that class, but was first for twelve and six blooms, showing praiseworthy samples of the most effective varieties. Anemones were not quite so well represented, nor were the Pompons. Table plants, miscellaneous plants, and non-competing collections were shown by several exhibitors, the cut flowers from Mr. T. S. Ware, Tottenham, attracting much attention.

BRIXTON.—NOV. 4TH AND 5TH.

COMPARATIVELY few local societies can boast a record of twenty-seven annual exhibitions of the same merit as those held at Brixton Hill; and with such a long successful career it is not surprising that the Show has gained a more than ordinary degree of fame. The hall near the congregational church, where the Exhibition is held, is of moderate dimensions, and consequently does not admit of an extensive display, but one remarkable point is that it always seems to be well filled without any crowding. Another prevailing character is the uniformity of merit distinguishing the exhibits, a general refinement with an absence of coarseness in all classes, that impresses a visitor very quickly. Sufficient classes for miscellaneous plants are also introduced to impart diversity to the Show, and the Orchids, which for several seasons have been contributed by J. Southgate, Esq., Selborne, Streatham, add materially to the beauty and interest of the Exhibition. Viewed from the gallery an exceedingly bright and pleasing effect is obtained, and it is evident that the courteous Secretary, Mr. W. Hall, utilises to the best advantage the material at his disposal.

The Show on Thursday and Friday last was of similar merit to its long series of predecessors, the competition being close in most of the classes. The beautiful specimen plants formerly seen are still missed, for no one seems to have acquired the skill in training that rendered the plants of one or two exhibitors so famed; the cut blooms were, however, good, the best shown up to that date. The Japanese were particularly notable for their fresh bright colours and good substance. With twenty-four blooms of Japanese varieties Mr. T. Mursell, gardener to Mrs. Burton, Streatham, secured the chief prize for a capital stand of blooms comprising the following varieties:—Back row.—La Triomphante, Val d'Andorre, Mlle. Lacroix, Madame de Sevin, Peter the Great, Jeanne Delaux, Elaine, and Marguerite Marrouch. Middle row.—L'Adorable, Madame J. Laing, Jupiter, a fine deep rich red bloom; Sarnia, Fernand Feral, M. Astorg, Madame C. Audignier, and Dr. Macary. Front row.—Belle Paule, Source d'Or, Coquette de Castille, M. Burnet, Boule d'Or, Margot, l'Incomparable, and N. Davis, very fine and bright red colour. Mr. T. Sadler, gardener to C. Lambert, Esq., Streatham, and Mr. C. J. Salter, gardener to J. Southgate, Esq., Streatham, were second and third, each showing good blooms. Eight exhibitors entered with twelve Japanese blooms, Mr. G. Pell, gardener to A. Margetson, Esq., Streatham, winning the first prize with bright handsome blooms of good substance, representing in the back row Bonquet Fait, Boule d'Or very large, and Marguerite Marrouch; in the middle row, Mlle. Lacroix, Japonaise, Elaine, and Soleil Levant; in the front row, J. Delaux, M. Astorg, Criterion, and Maiden's Blush. The second and third places were taken by Mr. W. Howe, gardener to H. Tate, Esq., Park Hill, Streatham, and Mr. T. Mursell.

The incurved blooms were not quite so large as they are sometimes seen, but they were neat and in some instances exceptionally good. Mr. C. J. Salter won triple honours, being first in each of the three classes for twenty-four, twelve, and six blooms; he also had the premier incurved bloom in the Show—namely, a substantial well-formed Prince Alfred in his twenty-four stand, two other blooms of this variety from the same exhibitor being nearly equally fine. The varieties in the first twenty-four stand were as follows. Back row—Prince Alfred, Mrs. Heale, St. Patrick, Jeanne d'Arc, Jardin des Plantes, John Salter, excellent; Princess of Wales, and Lord Alcester. Middle row—Nil Desperandum, very fine; Mr. Bunn, Lady Hardinge, G. Glenny, Princess of Wales, Mrs. Dixon, Mr. Brunlees, and Mrs. Crossfield. Front row—Reine des Blanchées, Lady Derby, Mrs. G. Rundle, Cherub, White Globe, Refulgence, Beverley, and Sir Stafford Car-y. The other prizes were taken by Mr. T. Sadler and Mr. J. Howe, gardener to Mrs. Bennett, Upper Tulse Hill. The premier twelve incurved contained in the back row—Prince Alfred, Nil Desperandum, Mrs. Heale, and Prince of Wales. In the middle row—Refulgence, Mr. Bunn, Mr. Brunlees, and Jeanne d'Arc. In the front row—G. Glenny, Lady Hardinge, Beverley, and an exceedingly beautiful bloom of Mrs. Dixon. The best six blooms were Prince Alfred, Lord Wolseley, Jeanne d'Arc, G. Glenny, Mrs. Dixon, and Beverley; Messrs. J. Howe, W. Howe, and T. Sadler following in the two

classes. Mr. T. Sadler had the best stand of six reflexed blooms, followed by Messrs. W. Howe and C. Livermore, the last-named being first with a very pretty stand of Anemone Pompons; and Mr. J. Swan, gardener to E. Jones, Esq., Clayton Park, gained similar honours with twelve large Anemone varieties, Messrs. Livermore and F. Fulbrook being second and third.

In the specimen plant class for six incurved varieties Mr. E. Cherry was adjudged first honours, his two best plants being Mrs. Dixon and Mrs. G. Rundle, with about fifty blooms each and very neatly trained; the others were John Salter, Empress of India, Queen of England, and Lord Alcester. Mr. J. Weston, gardener to D. Martineau, Esq., Clapham Park, was second with well-flowered plants, but not so evenly trained as the others. This exhibitor was, however, a good first with six Pompons, 3 to 4 feet in diameter, Rosinante, Salomon, Golden Cedo Nulli, Golden Madame Marthe, and Mrs. Forsyth being the best varieties; Messrs. Luff and E. Cherry following. Mr. R. Clark was first with three standard Pompons, and Mr. Livermore with three pyramids; Mr. E. Cherry and Luff showing well.

Of the miscellaneous plants the Orchids and Ferns were the principal features, especially the group from Selborne so tastefully arranged by Mr. C. J. Salter. This included *Cypripedium Spicerianum* with fifteen flowers, several good plants of *Vanda cœrulea*, one with a raceme of nineteen flowers and buds, another with twelve large highly coloured flowers; *Cypripedium Lawrenceanum*, *Cattleya Dowiana*, *Lycaste Skinneri*, *Cymbidium giganteum*, *Cypripedium purpuratum*, *Mesospinidium vulcanicum*, *Masdevallia tovarensis*, and several others. The same exhibitor was first with six and three Orchids, showing *Vanda Sanderiana*, *Cattleya Dowiana*, *Masdevallia chimæra Wallisi*, *Cattleya Skinneri*, *Vanda cœrulea*, and *Cattleya gigas*; Mr. Luff being second for three Orchids with *Lycaste Skinneri*, *Cypripedium Spicerianum*, and *Oncidium tigrinum* bearing a large paucity of flowers. Mr. Guyett was first for a specimen Orchid with *Phalænopsis grandiflora* bearing eight fine blooms, Mr. Luff second with *Lycaste Skinneri rosea*, and Mr. Sadler third for *Cypripedium insigne*. In the fine-foliage and other plant classes the principal exhibitors were Messrs. H. Guyett, Luff, Livermore, Gedner, and Fulbrook; Mr. H. Wright, gardener to J. A. Whittard, Esq., Streatham Hill, having the best four Ferns, fine healthy specimens of *Adiantum trapeziforme*, *Goniophlebium subauriculatum*, *Gymnogramma Laucheana giganteum*, and *G. schizophylla gloriosa*, a grand example of this graceful Fern.

The vegetables and fruit were staged in the gallery and a small adjoining room. Mr. W. Howe had the premier collection of twelve sorts of vegetables, Mr. A. Sandy taking similar honours for eight sorts, both these and the other competitors having well-grown produce. A special prize for Grapes offered by H. Tate, Esq., was won by his gardener, Mr. Howe, with three bunches of Alicantes and three Muscat of Alexandria, both well coloured; Mr. C. J. Salter being adjudged a second prize for three bunches of Gros Colman very large in berry. In the class for black Grapes Mr. Howe was also first with handsome Alicante, Mr. A. Wing second for the same variety, and Mr. Russell third with Black Hamburgh. Mr. Salter leading with beautifully ripened Muscat of Alexandria. With three dishes of dessert Apples and the same number of culinary varieties Mr. Sandy was first, showing good fruits, Messrs. Collins, Sadler, and Guyett securing the other prizes; and the same exhibitors competed in the Pear class, Mr. Guyett being first. Mr. Salter was first for Cucumbers with Selborne Rival, and was also awarded a certificate for fruits of the same variety. Mr. Weston had a tasteful stand of flowers for the dinner table, being awarded the first prize, and Messrs. Guyett, Luff, and Mursell were the winners for table plants, Mr. W. Roupell exhibiting a collection of Apples and Grapes and a tree in a pot of Lord Derby Apple.

Mr. Walter Edmunds of Chelsea exhibited a "new" garden rake named the "easy leveller." The iron teeth are square, tapering to a point, and arranged so that the sharp edges are at right angles with the head, and thus break up the soil in which they come in contact. This kind of rake, which is now "registered," have been in regular use in the north of England for considerably over a quarter of a century. It was commended by the Judges.

CRYSTAL PALACE.—NOVEMBER 5TH AND 6TH.

COMMENCING with March 26th this year a series of seven highly successful horticultural shows at the Crystal Palace, Sydenham, under the able management of Mr. W. G. Head, terminated on Friday and Saturday last with an admirable Chrysanthemum Exhibition, in which the prizes were well contested by a large number of growers. The expectations recorded some weeks ago, that incurved blooms at the early shows would be found rather deficient in substance and quality, have been too well fulfilled, scarcely any samples of exceptional merit having been hitherto staged. The damp weather has caused many blooms to suffer materially, and the complaints of "reflexing" in such varieties are frequent. The Japanese, on the other hand, have been well represented, and the increasing popularity of this section can be readily understood for several reasons, the primary one being that they are more easily grown to exhibition quality. At the Crystal Palace this difference was clearly noticeable, for even in the large classes, though many neat and good incurved blooms were shown, many also were undersized or weak, while plenty of substantial handsome well-developed Japanese could be found. Reflexed varieties were strongly represented, and very seldom have seventeen stands of a dozen blooms each been entered in one class. Anemones and Pompons, though in smaller numbers, were interesting for their bright or delicate colours. Specimen plants were, with one or two exceptions, somewhat below the average, but the handsome bright effective groups amply compensated for this defect, and in few places could similar groups be seen to such advantage. It too often happens at Chrysanthemum shows that collections of plants which really constitute the most effective portion of the display are crowded into corners in dark hall or rooms, where their beauty is greatly lessened or quite lost.

A liberal schedule was provided, the great class being that for forty-eight blooms, twenty-four incurved and twenty-four Japanese, not less than eighteen varieties of each, or more than two blooms of one variety. In this four prizes were offered—namely, £10, £7, £5, and £3, amply sufficient to encourage keen competition, as proved by the fact that twelve collections were staged, or 576 blooms—an imposing array in one class. The most successful exhibitor was Mr. C. Gibson, gardener to J. Wormald,

Esq., Morden Park, Mitcham, who was an easy first with a praiseworthy collection of fresh even blooms, the incurved heavy in the back row and medium-sized in the others, the Japanese all large and bright. The varieties included in these stands were as follows:—

INCURVED.—Back row—Golden Empress, Empress of India, Golden Queen, Princess of Wales, very fine; Nil Desperandum, Queen of England, Empress of India. Middle row—Jeanne d'Arc, Nil Desperandum, Barbara, Prince Alfred, Jeanne d'Arc, Lord Wolseley, Hero of Stoke Newington, Lord Wolseley. Front row—John Salter, Princess Teck, Refulgence, Cherub, Lady Hardinge, Princess Beatrice, Golden Eagle, and Venus.

JAPANESE.—Back row—Comtesse de Beauregarde, Val d'Andorre, Thunberg, Maiden's Blush, Japonaise, Grandiflorum, Maiden's Blush, and Madame C. Audiguier. Middle row—Grandiflorum, M. Burnet, J. Delaux, Boule d'Or, Mdle. Moulise, Baronne de Prailly, J. Delaux, and Boule d'Or. Front row—M. Astorg, Yellow Dragon, Comte de Germiny, Elaine, Fernand Feral, Duchess of Albany, Mdle. Lacroix, and Marguerite Marrouch. Messrs. W. & G. Drover, Fareham, Hants, were second, their incurved blooms rather smaller though neat, but the Japanese blooms were not so good. The third place was taken by Mr. J. M'Kenzie, gardener to F. S. W. Cornwallis, Esq., Linton Park, Maidstone, his back row incurved blooms being very fine. Mr. M. Sullivan, gardener to D. B. Chapman, Esq., Downshire House, Roehampton, was fourth, all his blooms being fresh and clean, but the Japanese were the heaviest, Val d'Andorre being capitally shown.

INCURVED BLOOMS.—In the class for eighteen incurved varieties Messrs. W. & G. Drover were first for medium size blooms of the following. In the back row—Lord Alcester, Jeanne d'Arc, Queen of England, Empress of India, Alfred Salter, and John Salter. In the middle row—Nil Desperandum, Lady Hardinge, Mrs. H. Shipman, Lord Wolseley, Prince Alfred, and Beauty. In the front row—Prince of Wales, Mrs. Dixon, Princess of Wales, G. Glenny, Baron Benst, and Mrs. G. Rundle. Mr. Horsfield, Heytesbury, and Mr. J. W. Springbett, Cheshunt, were second and third with clean, neat blooms. Eleven entries. With twelve incurved there were ten exhibitors. Mr. J. Gore, gardener to Captain Taylor, Glenleigh, Hastings, securing first honours with neat blooms. Mr. J. Wyatt, gardener to J. Perry, Esq., Braddenhurst, Caterham Valley, was second, and Mr. E. S. Cole third. Mr. J. Wyatt had the best six blooms of one variety, neat compact examples of Nil Desperandum. Mr. M. Russell, gardener to D. C. T. Lewis, Esq., Broomfield, Henfield, was second with Jeanne d'Arc, small; and Mr. A. Holmes, gardener to H. B. Hill, Esq., South Road, Clapham Park, third with Queen of England, in a class of fifteen competitors.

JAPANESE VARIETIES.—A capital stand of eighteen Japanese secured the first prize for Mr. J. Munro, gardener to J. D. Paul, Esq., Cambridge House, Twickenham. The blooms were very bright and of good substance, representing the following varieties:—Back row—Baronne de Prailly, Bouquet Fait, Boule d'Or, M. Ardene, Val d'Andorre, Madame C. Audiguier. Middle row—Fair Maid of Guernsey, Marguerite Marrouch, Madame B. Rendatler, Comte de Germiny, Comtesse de Beauregarde, Soleil Levant. Front row—Criterion, Gloire de Toulouse, F. A. Davis, Fernand Feral, M. Lacroix, and John Laing. The second place was accorded to Mr. E. Wills, gardener to Mrs. Pearce, The Firs, Bassett, Southampton, who had Criterion and Val d'Andorre, very large and handsome. Mr. H. W. Ward, gardener to the Right Hon. the Earl of Radnor, Longford Castle, Salisbury, was a close third, eleven other competitors in this class contributing creditable stands of blooms. For twelve Japanese varieties Mr. H. Shoesmith, gardener to the Rev. Canon Hodgson, Saltwood Rectory, Hythe, Kent, was first with a fresh, bright collection. Mr. Fred. Moore, Blendon Hall Gardens, Bexley, and Mr. E. S. Cole, gardener to W. Pethick, Esq., Woodside, Sneyd Park, Bistol, being second and third in a class of fifteen exhibitors. Mr. Gibson led in the one-variety class with six handsome blooms of Grandiflorum. Mr. A. Elphick, gardener to J. Clutton, Esq., The Orchard, Reigate, was second with Madame C. Audiguier, and Mr. Shoesmith third with Elaine, large, deep, pure blooms. There were nineteen stands in this class.

REFLEXED ANEMONE AND POMPON VARIETIES.—Seventeen competitors entered in the class for twelve reflexed blooms, not less than eight varieties. Mr. W. Neville, gardener to F. W. Flight, Esq., Cornstiles, Twyford, was placed first with Madeleine Tezier, King of the Crimsoms, Emperor of China, Chevalier Damage, Dr. Sharpe, Cullingfordji, Peach Christine, and Cloth of Gold. Mr. E. Wills was second with fine blooms, and Mr. C. Gibson third.

Fifteen stands of twelve Anemone-flowered varieties were exhibited. Mr. M. Sullivan leading with clean even flowers of Lady Margaret, Acquisition, Fleur de Marie, Guck, Georges Sands, Emperor, Reine des Alveoles, Prince of Anemones, Margaret d'Anjou, and Queen Marguerite. Mr. F. Moore secured the second place, his blooms of Minnie Chaté, Fleur de Marie, and Laing's Anemone being excellent; and Mr. C. Penford, gardener to Sir F. Fitzwygram, Bt, M.F., Leigh Park, Havant, was third. The fine stands of twelve Pompon Anemones made a pretty class; Mr. Gore winning the premier place with Perle, Marguerite de Coi, Regulus, Antonius, Madame Montels, Calliope, Mr. Astie, Madame Chalonge, Madame Sentir, and Firefly. Mr. J. Howe and Mr. E. Chadwick were second and third.

In the class for twelve Pompons, three blooms of each, there were nine competitors. Mr. W. Neville gained the chief award with White and Golden Madame Marthe, President, Mustapha, Black Douglas, La Pureté, Marie Crouart, Marabout, Toussaint Mauvesot, and White Trevenna. Messrs. G. Duncan and J. Gore were second and third.

Amongst twelve stands of six Japanese Anemone blooms Mr. C. Gibson was first with Fabian de Mediana, Madame Cabrol, Sœur Dorothee Souille, and Madame Clos. Messrs. W. & G. Drover were second, and Mr. W. H. Ward third. Only one stand of single varieties was entered, Mr. E. Chadwick being awarded the third prize for small flowers.

PLANTS.—The groups of plants constituted an important feature in the Exhibition, considerable taste being evinced in the disposition of the plants. For a group arranged in a space of 100 square feet Mr. G. Edwards, Balham Nursery, was awarded first honours, showing a very effective group with a good proportion of light and dark varieties, chiefly Japanese, with a margin of Pompons. Messrs. J. Laing & Co., Forest Hill, were second with an imposing group, including many new varieties; and Mr. N. Davis, Camberwell, was third with a handsome group. For a group in a space of 50 square feet Mr. W. Webster, gardener to Mrs. Croll, Mavis Bank, Grange Road, Upper Norwood, was first with a bright informal arrangement, the

blooms good and the plants healthy. Mr. J. Howe, Tulse Hill House Gardens, took the second place with a varied arrangement. Mr. F. Ball, gardener to H. Doulton, Esq., The Woodlands, Tooting Common, was third. The best group of incurved varieties was from Mr. J. Townsend, Providence Nursery, Putney, including some good quality blooms. Mr. N. Davis was a very close second with a fine group, the blooms of good size. Messrs. J. Laing & Co. were third.

Mr. A. Tomalin, gardener to S. White, Esq., Oakwood, Crayford, Kent, was deservedly awarded a first prize for six trained specimens, Japanese varieties, standards about 4 feet high, with a semi-globular head nearly 3 feet in diameter, even and well-flowered. The varieties were Gloire de Toulouse, Madame B. Rendatler, Dr. Macary, Elaine, Peter the Great, and Gloire Rayonnante. In the same class Mr. C. Portway, gardener to B. B. Portall, Esq., Daventry House, Upper Tooting, was second with dwarf-trained plants, and this exhibitor was first with six Pompons in 12-inch pots. For six incurved varieties Mr. E. Cherry was first with healthy neat plants, and he was awarded an extra prize in the Pompon class for six good plants, which, however, comprised one of La Pureté, not admissible. With four trained specimens Mr. C. Portway was first, Mr. G. Kinson second, and Mr. W. Griffin third, the first having one standard and three dwarf plants, and the second three standards and one dwarf. The prizes for Primulas were won by Messrs. J. Howe, J. Radbourn, and J. Little.

MISCELLANEOUS.—Mr. Edwards of Balham had a pretty group of Carnations, which were commended. Messrs. John Laing & Co., Forest Hill, showed a box of Tuberos Begonia blooms very bright and fresh. Mr. W. F. Smith showed three Queen Pine Apples of good size, which were highly commended. Messrs. H. Cannell & Sons, Swanley, exhibited stands of new Chrysanthemums, several of which were certificated. A small collection of Nova Scotian Apples being also shown by a firm of importers. Certificates were awarded for the following varieties.

Mrs. J. Wright (F. W. Flight, Esq.).—A Japanese variety with pure white partly narrow, tubular, or fluted florets, curved and twisted, of good substance, and beautiful. It is a seedling raised by Messrs. Laing & Co., and will no doubt become a favourite variety.

Elsie (H. Cannell & Son).—A reflexed variety, with slightly fluted recurving delicate cream or pale primrose florets, of good form and substance.

William Holmes (H. Cannell & Sons).—Previously certificated and described.

Miss Cannell (H. Cannell & Sons).—A single variety with pure white rosy florets, very neat and pretty.

Cincinnati (H. Cannell & Sons).—A large Anemone variety, with long flat rosy florets, white tinged with purple, and short central tubular florets of similar colour.

Jane (H. Cannell & Sons).—A single variety, with narrow fluted, twisted, and curving pure white rosy florets, and a bright gold centre. A charming variety.

La Marguerite (J. Laing & Co.).—A distinct Anemone-flowered variety with deep crimson blooms, broad rosy florets, and dense centre.

Mdlle. Elise Dordan (J. Laing & Co.).—A pretty Pompon previously described.

KINGSTON-ON-THAMES.—NOVEMBER 9TH AND 10TH.

MANY splendid exhibitions have been held in the capacious Volunteer Drill Hall at Kingston, but not one more extensive and generally imposing than this, the tenth annual display of Chrysanthemum plants and blooms now to be noticed. The specimen plants exhibited by the chief prize-winners were magnificent, miscellaneous collections of plants admirably and tastefully arranged, groups of Chrysanthemums excellent, while the competition in the cut bloom classes was unusually keen, no less than eight stands of forty-eight distinct varieties being staged in the hope of winning the first chance for the fourth 25-guinea champion vase, the coveted honour falling to Mr. Gibson, a reward as popular as it was merited. The character of the blooms throughout the Show cannot be described as of superior finish, but on the contrary many of the incurved examples were somewhat rough, this being due in part, no doubt, to the season, and in part certainly to a want of time or care in arrangement. The Japanese blooms were bright and fresh rather than "heavy," still there were many splendid examples; and a few new varieties were exhibited and certificated, one at least which will make its mark in the future, and will almost sure to become known as "Golden Meg."

CUT BLOOMS.—The principal interest of the Exhibition centred in the challenge vase class, in which, as already mentioned, Mr. C. Gibson, gardener to J. Wormald, Esq., Morden Park, was the most successful amongst the eight competitors. The incurved were of moderate size, but fresh, clean, even blooms, the Japanese being of good substance and wonderfully bright. The varieties were as follows:—Incurved, back row: Alfred Salter, John Salter, Golden Queen, Princess of Wales (fine), Queen of England, Golden Empress, Nil Desperandum, and Empress of India (very handsome). Middle row: Princess Teck, Nonpareil, Cherub, Jeanne d'Arc, Lord Wolseley, Hero of Stoke Newington, Jardin des Plantes, and Sir Stafford Carey. Front row: Mahel Ward, Refulgence, Lady Hardinge, Golden Eagle, Princess Beatrice (very neat), Barbara, White Venus, and Yellow Perfection. Japanese, back row: Grandiflorum, Mdlle. Lacroix, Japonaise, Baronne de Prailly, Maiden's Blush, Boule d'Or (very fine), and Comte de Beauregard. Middle row: Thunberg (excellent), Fernand Feral, Val d'Andorre, Golden Dragon (large), White Dragon, Criterion, Jeanne Delaux (very fine), and Elaine. Front row: Duchess of Albany, Meg Merrilies, Comte de Germiny, Albion Striatum, Triomphe de la Rue des Chalets, M. Astorg, M. Brunet, and L'Adorable. Mr. E. Coombes, gardener to W. Furze, Esq., Teddington, was second with an even collection of incurved and Japanese, but of moderate size. Messrs. W. & G. Drover, Fareham, were a close third, their incurved being somewhat rougher, but with the Japanese included some fine blooms. Mr. C. Beckett, Juniper Hill, Dorking, was a good fourth, but his incurved blooms were too irregular.

A class was also provided for twelve incurved and twelve Japanese blooms, distinct varieties, in which a £5 5s. silver cup was offered as a first prize, open to residents within the Kingston Poor Law Union. Mr. W. Smith, gardener to J. F. Schwann, Esq., Wimbledon, won this cup with good blooms of the following:—Incurved, back row: Emily Dale, Lord

Wolseley, Golden Empress, and Empress of India. Middle row: Prince of Wales, Novelty, Jeanne d'Arc, and Prince Alfred. Front row: White Venus, Lady Hardinge, Nil Desperandum, and Princess of Wales. Japanese, back row: Madame C. Audiguier, Fair Maid of Guernsey, M. Ardene, and Criterion. Middle row: Marguerite Marrouch, Fernand Feral, Triomphe du Nord, and Mdlle. Lacroix. Front row: M. Astorg, John Laing, Japonaise, and F. A. Davis. The Japanese were very strong in this collection. The second place was accorded to Mr. G. King, gardener to Mrs. Few, Esher, who followed closely with handsome blooms, and Mr. E. Coombes third with smaller but very fresh blooms.

With twenty-four incurved Mr. E. Coombes was first for neat and clean blooms of moderate size, his varieties being:—In the back row: Lord Alcester, Lord Wolseley, Queen of England, Princess of Wales, Golden Empress, Prince Alfred, Empress of India, and Jeanne d'Arc. In the middle row: Lady Hardinge, Mrs. Heale, Mr. Bunn, John Salter, Novelty, Jardin des Plantes, Baron Beust, and Prince of Wales. Front row: White Beverley, Refulgence, Cherub, Mr. G. Glenn, Golden Eagle, White Venus, Le Grand, and Mrs. Dixon. Mr. G. Woodgate Warren House, Kingston, was second, with rather smaller but fresh bright blooms. Mr. C. Lane, M. yfield, Cheam, being third. For twelve incurved blooms Mr. R. Cawte, gardener to J. P. Robinson, Esq., Esher, was first with Empress of India, Emily Dale, Queen of England, Lord Alcester, Nil Desperandum, Jeanne d'Arc, Sir Stafford Carey, Venus, Lady Carey, Mr. Bunn, Empress Eugénie, and Barbara. Mr. J. Thorne, gardener to A. E. Flood, Esq., Walton-on-Thames, Mr. A. Carter, gardener to Alderman Evans, Ewell, and Mr. J. Macpherson, gardener to J. S. Page, Esq., Surbiton, were respectively second, third, and fourth, amongst five exhibitors.

Mr. C. Slade, gardener to Lady Bowater, Richmond Park, was first with six incurved, having Queen of England, Golden Empress, Prince Alfred, very good; Empress of India, Lord Alcester, and Lord Wolseley. Mr. H. Trussler, gardener to J. Shand, Esq., Old Malden, and Mr. G. Holder, gardener to Mrs. Izod, Esher, third, in a class of seven competitors. The best six blooms of one variety incurved were handsome examples of Golden Empress of India from Mr. J. Munro, Cambridge House, Twickenham. Mr. G. Carpenter, gardener to C. J. Abbott, Esq., Walton-on-Thames, was second with small Jeanne d'Arc, and Mr. A. Carter third with the same. Five exhibitors. In the class for six incurved blooms, open to those who had never taken a prize, Mr. C. Lane was first, Mr. J. Thorne second, and Mr. H. Hawkes third. Nine competitors entering.

The Japanese varieties were well represented in several classes, their bright and varied colours contributing greatly to the beauty of the Exhibition. Mr. G. King was awarded first honours for twenty-four Japanese blooms, very bright, and in the back row large blooms. The tall varieties were as follows:—Back row: Madame C. Audiguier, Criterion, Baronne de Prailly, Bronze Dragon, Val d'Andorre, Comte de Germiny, Mdlle. Lacroix, and Boule d'Or. Middle row: Flamme de Punch, M. Astorg, Yellow Dragon, Meg Merrilies, Triomphe de la Rue des Chalets, F. A. Davis, Japonaise, and M. Burnet. Front row: Elaine, Garnet, Arlequin, Marguerite Marrouch, Balmoreau, Joseph Mahood, John Laing, and Soleil Levant. Mr. J. Child, gardener to Mrs. Slade, Claygate, followed very closely with substantial blooms, Val d'Andorre, The Daimio, Thunberg, and Boule d'Or being extremely fine. Mr. J. Munro took the third place, and Mr. C. Lane the fourth. Seven entries.

The stands of twelve Japanese formed an interesting class, eight competitors entering, the majority of whom had good blooms. Mr. W. Smith won premier honours with capital examples of M. Ardene, Val d'Andorre, Fernand Feral, Marguerite Marrouch, John Laing, Comtesse de Beauregard, Mdlle. Lacroix, Japonaise, Fanny Bouchard, Thunberg, F. A. Davis, and M. Astorg. Mr. G. Holden was a creditable second, Mr. G. Duncan, Warnham Court Gardens, Horsham, third, and Mr. Hunt, gardener to Sir Robert Carden, Bart., West Moulsey, fourth. For six Japanese of one variety Mr. G. King was first with Japonaise; Mr. Slade second with Madame C. Audiguier, and Mr. G. Carpenter with F. A. Davis. In the maiden class Mr. C. Waite was first with six neat blooms, followed by Messrs. Williams and Thorne, nine stands being entered.

Reflexed varieties were well shown by Mr. Carpenter, who had the best twelve blooms, Messrs. E. Coombes and A. Carter following. With twelve Japanese Anemone blooms Mr. Child took the lead for fine blooms of Fabian de Mediana, Mdlle. Cabrol, Madame Clos, Madame B. Pigny, and Sœur Dorothee Souille. Mr. G. Carpenter followed. Mr. C. Gibson was first for twelve Anemone blooms with a beautiful collection, in which Fleur de Marie, Gluck, Lady Margaret, and Mrs. Pethers were very fine. Mr. C. Slade and Mr. G. Carpenter followed in a full class of seven entries. Mr. W. E. Clark had the premier stand of twelve bunches of Pompons, and Mr. E. Coombes the best twelve Anemone Pompons, both very pretty collections. In the classes confined to amateurs who do not employ a gardener more than one day a week some good blooms were shown, Mr. W. Minnett, Mr. A. W. Hardy, Mr. T. Varley, Mr. W. J. Lemon, Mr. C. Hall, Mr. H. Stacey, Mr. R. Preis, and Mr. F. Bowler were awarded premier prizes.

GROUPS AND PLANTS.—The groups of miscellaneous plants and those of Chrysanthemums are always an important feature at Kingston, and this year they were even better than usual. For a group of plants arranged for effect Mr. G. Fittell, gardener to G. R. Greaves, Esq., Twickenham, was deservedly first with a most tasteful contribution, light Palms, Dracænas, Crotons, with a few Bouvardias, Heaths, and Callas, rising from a groundwork of Adiantums, and a few scattered Caladium argyrites near the margin, the pots being concealed with moss. Mr. H. Trussler was second also with a free and effective arrangement, Dendrobiums, Cyrtipediums, and flowering plants being more freely employed. Mr. R. Cawte was third with a good group somewhat in the same style as the first, but not quite so well finished. Mr. J. R. Martin, gardener to C. H. Outram, Esq., Elm Lodge, Surbiton Hill, was awarded a fourth prize for a rather heavier but bright group.

The groups of Chrysanthemums were very rich in colour, Mr. W. Smith taking first honours with a most handsome arrangement of strong yet dwarf and compact healthy plants well clothed with foliage, and comprising a suitable proportion of both Japanese and incurved varieties, the blooms large, substantial, and fresh. Mr. C. Orchard, gardener to W. Middleton Campbell, Esq., Coombe Ridge, was an admirable second, his group being beautifully finished and the blooms fine. Mr. H. W. Pitcher, gardener to Mrs. Dunnage, Surbiton, and Mr. C. Lane, were third and fourth.

The trained specimen plants formed a beautiful group at the end of the hall, and at few shows are such fine plants seen. Mr. G. King secured the chief award for six specimens, having grandly flowered plants 4 to 5 feet in diameter of Mrs. Dixon, Lady Hardinge, John Salter, Mr. G. Glenny, Mrs. Haliburton, and Prince of Wales, some with over 200 blooms each. Mr. C. Beckett was second with more irregular plants, and Mr. Trussler third with smaller specimens. Mr. R. Cawte had the best three specimens of large-flowering varieties—namely, Mrs. G. Rundle, Mrs. Dixon, and Mr. G. Glenny, each about 4 feet in diameter and beautifully flowered. The same exhibitor was also first with three Japanese varieties, even and handsome specimens of Orphée, Mont Blanc, and Madame B. Rendatler; and with six Pompons he was similarly successful, having profusely flowered bushes of Rosinante, Adele Prissette, Marguerite de Coi, Toussaint Maurisot, Mr. Astie, and Miss Nightingale. Mr. C. Beckett took the lead with three standard large-flowering varieties, Mrs. G. Rundle, Chinaman, and Mrs. Dixon, the stems about 4 feet high, with conical heads over 3 feet in diameter. For a single specimen incurred variety Mr. R. Cawte was first with Mrs. G. Rundle, very beautiful. Mr. G. King followed with a similar plant of the same variety, and Mr. Trussler third with Hero of Stoke Newington, much smaller. With a specimen Japanese Mr. Cawte was again first, showing Peter the Great $4\frac{1}{2}$ feet in diameter and covered with blooms. Mr. G. King was second with La Nympe, very neat. Mr. Beckett had the best single Pompon—Fanny, a free untrained plant well flowered. Messrs. Child, Elliott, and Beckett also took second prizes in other classes.

Table plants are a strong feature at Kingston, the competition being keen. Mr. A. Carter was first with nine plants, Pandanus Veitchi, Crotons Nevellii, angustifolius, Hawkeri, Chelsoni, and Warreni, Aralia Veitchi, Cocos Weddelliana, and Dracaena superba. Mr. W. Smith and Mr. C. Waite were second and third with larger plants. Mr. H. Trussler had the best six plants, Mr. H. Holden and Mr. W. Reed following. In the class for six berried plants Mr. Holden was first with Capsicum Prince of Wales, having large yellow fruits. Mr. C. Waite had the best basket of plants, good specimens, but rather crowded.

FRUIT.—White Grapes were well shown by Mr. B. Dockerill, gardener to G. W. Palmer, Esq., Reading, Mr. W. Smith, and Mr. Bates, who won the prizes in that order with Muscat of Alexandria. For black Grapes Mr. C. Griffin, gardener to Miss Christy, Coombe Bank, Mr. W. Smith, and Mr. Dockerill were the prizetakers, all showing Alicante. A vote of thanks was accorded to Messrs. Thomson & Son, Clovenfords, for good bunches and splendid berries of Gros Colman, Messrs. T. Jackson & Son, Kingston, having bunches of Black Hamburgh and Kempsey Alicante.

Apples and Pears were represented by good fruits. Mr. Reed, Broadwater, Oatlands Park, Mr. J. Lamb, Mr. C. Orchard, Mr. Rogers, and Mr. Waite securing the prizes. Mrs. Hardy, High Street, Dorking, was first both with a stand of foliage and berries and one of flowers, both very tasteful. Mr. W. Rogers being first with six bouquets. Messrs. Hooper and Co., Twickenham, had a small group of Carnations.

First-class certificates were awarded to the following varieties:—

Mr. Ralph Brocklebank.—Exhibited by Mr. J. Winkworth, gardener to Ralph Brocklebank, Esq., Childwell Hall, Liverpool. It is a bright primrose sport from Meg Merrilies, and a decided acquisition, the blooms equal in size those of its prototype and possess the same character, while the new colour is very pleasing.

Amy Furze.—Exhibited by Mr. E. Coombe, gardener to W. Furze, Esq., Teddington. It is a seedling reflexed bloom, of a pinkish flesh colour, large in size, but a little loose and "bristly;" this, however, may have been due to some extent to age, and the new comer will find its way into stands of the class, not too well represented, to which it belongs.

Moonlight.—Exhibited by Messrs. Jackson & Sons, Kingston, and we believe of American origin. The florets are pure white, broad, and loosely incurved, indeed the character of the bloom cannot be better conveyed than by describing it as a White Peter the Great.

Among others new forms, blooms of a bronze sport from Mr. Bunn were staged, but not in condition to be certificated; this sport, however, must not be lost sight of, as the florets may come longer and smoother another year.

PECKHAM RYE.—NOVEMBER 8TH AND 9TH.

THE Surrey Chrysanthemum Society's annual Exhibition took place in the Public Hall, Rye Lane, Peckham, on Monday and Tuesday last. We understand that the Society is comparatively young, but it will require some considerable encouragement before it can be described as flourishing, for a balance of 12s. 8d. is scarcely sufficient to provide for unpleasant contingencies. The Hall is a large one, and there were not enough entries in the plant classes to give it a well-filled appearance. Several good groups were, however, staged, and that for which Mr. Haynes was awarded the silver cup was especially worthy of commendation. With the exception of a few stands of Japanese, the blooms were rather small in the cut bloom classes.

An extremely handsome group was contributed by Mr. Haynes, gardener to John Sadler, Esq., and for which the first prize, a silver cup, was awarded. The plants were healthy with large beautiful blooms, mostly Japanese, very bright in colour. Mr. Neville, gardener to H. H. Lennard, Esq., was second with a much smaller and rougher group. In a class specially reserved for amateurs Mr. Tucker, Lansanne Road, won the chief place with a fine collection. Mr. F. W. Snoad, Bellenden Road, was second; and Mr. Finch, Waterloo Street, third. In the nurserymen's class for a group Mr. T. O. Stevens, Grove Nursery, Coleman Road, won the first place for a group of dwarf plants. Mr. T. Sadler, gardener to C. Lambert, Esq., Streatham, showed some specimen plants, Palms, Ferns, and Orchids not for competition. Mr. Drew, James Grove, also had a group of Chrysanthemums not in competition. Mr. Castle, Lausanne Road, exhibited a group of fine-foliage plants, Palms, Ferns, Pelargoniums, &c. Mr. Christmas, Grove Lane, showed several stands of blooms not in competition.

In the cut bloom classes the Japanese were fairly good, Mr. T. Sadler having a capital dozen blooms, which secured him the first prize. He also had twelve fine reflexed blooms and the same number of incurved, which secured him the premier awards in those classes. Mr. G. R. Johnson, Tottenham, was first with a stand of twelve excellent Pompons. In the smaller classes Messrs. G. R. Parker, Herne Hill; H. Clitter, Nunhead;

C. J. Bennett, Milkwood Road; Finch, Waterloo Street; and F. W. Snoad were the prizetakers.

LAMBETH.—NOVEMBER 8TH, 9TH, AND 10TH.

THE Society of Lambeth Amateurs, all of whom reside within $1\frac{1}{2}$ mile of the Elephant and Castle at Newington, have found fresh quarters for their Exhibition, which this year was held in the Bridge House Hotel, London Bridge. The room or hall is a commodious one, and amply large enough for the Show, but the fact of having to climb several flights of stairs to reach it was not likely to increase the number of visitors. It is not often that flower shows are held in such elevated regions, but this one was literally above the housetops. It will be interesting to learn what the financial results of the Exhibition were, but we should think that a site somewhat nearer the ground level would be advisable another season.

In the plant classes the groups were the principal feature, and occupied one side of the hall. The first prize was awarded to Mr. J. A. Howett, who had a bright and varied arrangement of well-flowered plants, incurred of the G. Glenny and Mrs. G. Rundle types being very neat. There was also a good proportion of Japanese with dwarf Pompons in front. Mr. Hadden gained the second prize for a large group rather loosely arranged, chiefly composed of Japanese; Mr. J. Hole being third.

With six standards, Mr. Williams secured the first prize and silver cup for fairly good healthy plants; Mr. Ellis taking a similar prize for six standard Pompons neatly trained. Messrs. Davison and Williams secured other prizes. Mr. J. A. Howett was first with six untrained Pompons, well flowered bushes; Messrs. Hadden and Davison taking other prizes in the same class. Mr. H. Ellis had the best six dwarf Pompons, and Mr. Williams the best three standard plants.

The cut bloom classes were well filled, but most of the blooms entered were rather small, though neat and clean. Mr. T. Hadden was first for twelve incurved, his stand including a good Nil Desperandum, Mr. Bunn, and Prince Alfred. Mr. J. A. Howett was second for small blooms, and Mr. Ellis third. Mr. Childs had the best six blooms—Prince Alfred, Beverley, Venus, Mr. Bunn, Nil Desperandum, and Mrs. G. Rundle. Mr. Davison was second and Mr. Williams third. For six of one variety Mr. Ellis was first with Prince of Wales, very neat; Mr. Davison second with G. Glenny, and Mr. Williams third with the same.

The Japanese varieties were much better represented than the incurved. Mr. Childs had a pretty stand of six blooms one variety Japanese, and was awarded the first prize for good examples of La Triomphante, and he was also first with six Japanese varieties, Val d'Andorre and Gloriosum being his best blooms. With twelve Japanese the same exhibitor also secured first honours, showing fresh, substantial, beautiful blooms of good varieties, a fine bloom of the new Edouard Audiguier being included. Messrs. Ellis, Williams, and Hadden were awarded other prizes. An excellent stand of twelve reflexed blooms gained Mr. Hadden the first prize, Mr. Williams being second with twelve and first with six blooms.

Mr. Whitley contributed a group of fine-foliage plants, which formed a bank at one end of the hall. Mr. Benjamin Field, Old Kent Road, had samples of horticultural requisites, and there were some pretty stands of Chrysanthemum flowers.

NATIONAL CHRYSANTHEMUM SOCIETY.—NOVEMBER 10TH AND 11TH

A MAGNIFICENT and extensive exhibition was opened at the Royal Aquarium, Westminster, yesterday (Wednesday), and, admirable as the records of this Society have been, they have this season surpassed all previous efforts. Cut blooms, specimen plants, groups, fruit and vegetables constituted a show of remarkable excellence, the competition in all the classes being very keen and the quality of the contributions exceptional. Unfortunately the brief time at our disposal after the awards were made will only permit a brief report, but we obtained the winners' names in the principal classes, and may refer more in detail next issue to some of the chief features of the Show. The Hon. Secretary, Mr. W. Holmes, and the Executive deserve the congratulations of Chrysanthemum growers for their successful efforts in extending the interest in these plants.

The body of the large hall was occupied with the plants and some of the cut bloom classes, but most of the incurved blooms with the fruit and vegetables were arranged in St. Stephen's Hall.

In the great class for forty-eight incurved blooms, not less than twenty-four varieties, there were seven competitors, Mr. C. Gibson, gardener to J. Wormald, Esq., Morden Park, Surrey, had much the best collection, superb blooms of good substance and finely finished. They were arranged as follows:—Back row: Empress of India, Princess of Wales, Golden Queen, John Salter, Golden Empress, Queen of England, Golden Empress, Princess of Wales, Golden Queen, Empress of India, Queen of England, Golden Empress, Queen of England, John Salter, Princess of Wales, a magnificent bloom, and a grand Empress of India. Middle row: Nil Desperandum, Golden Perfection, Empress Eugénie, Golden Queen, Chernb, Princess Teck, Jeanne d'Arc, Nil Desperandum, Jeanne d'Arc, Princess Teck, Golden Eagle, Hero of Stoke Newington, Jardin des Plantes, Hero of Stoke Newington, Nil Desperandum, and Golden Queen. Front row: Lady Hardinge, Lord Wolseley, Princess Beatrice, Refulgence, Mabel Ward, Barbara, Princess Beatrice, Golden Eagle, Jardin des Plantes, Sir Stafford Carey, Mrs. Dixon, Nonpareil, Princess Beatrice, Mrs. G. Rundle, Barbara, and Princess Teck. Mr. Gibson well deserved a victory in this class, but the stand was disqualified for containing four Golden Queens. Messrs. W. & G. Drover, Fareham, were first with rather looser and rougher blooms, but including some very fine specimens. The second prize was awarded to F. R. Wildman, Esq., Oaklands, Grove Road, Clapham Park, which were small, but neat and fresh; Mr. C. J. Salter, of Streatham, being third.

For twenty-four incurved blooms Mr. Wildman was first, and Mr. E. Sanderson, Felix Villa, St. Mary's Road, Willesden, was second, but the accuracy of these awards was questioned, as a number of the blooms in the first stand were small and irregular. Mr. W. R. Strong, Wellington College, Wokingham, Berks, was third, these three being the only exhibitors. The best eighteen incurved were entered by Mr. J. Martin, gardener to C. N. Kidd, Esq., West Hill House, Dartford, substantial and fresh blooms of the following:—Back row: Princess of Wales, Empress of India, Prince Alfred, Golden Empress, Lord Wolseley, and Lord Alcester. Middle row: Mr. W. Shipman, Cherub, Jeanne d'Arc, Mr. Brunlees, Mrs. Heale, and John

Salter. Front row: Eve, Princess Beatrice, Prince of Wales, Isabella Bott, Nil Desperandum, and Baron Beust. Mr. J. Horsefield, Heytesbury, and Mr. J. Mitchell, gardener to Mrs. Arbuthnot, Borgden Place, Bexley, were the other prizetakers in a class of five entries.

A handsome stand of twelve incurved gained Mr. J. Doughty, gardener to Mrs. Tomlin, Angley Park, Cranbrook, the first prize, his blooms being capital examples of Queen of England, Golden Empress of India, Empress of India, Lord Alcester, Prince Alfred, Jeanne d'Arc, Alfred Salter, Princess Teck, Lady Hardinge, Mrs. W. Shipman, Mrs. Heale, and Hero of Stoke Newington. Mr. H. Shoesmith, gardener to Rev. Canon Hodgson, Saltwood Rectory, Hythe, Kent, was a good second, a corner bloom of Queen of England, being superb; and Mr. J. Gore, gardener to Captain Taylor, Glenleigh, Hastings, was third, amongst ten exhibitors, all of whom showed very well.

With forty-eight Japanese Mr. C. Gibson gained a decided victory, having magnificent blooms of the following varieties:—Back row—Madame C. Audiguier, Mdle. Lacroix, Grandiflorum, Baronne de Prailly, Japonaise, Comtesse de Beauregard, Boule d'Or, Maiden's Blush, Madame C. Audiguier, Mdle. Lacroix, Grandiflorum, Baronne de Prailly, Japonaise, Maiden's Blush, Boule d'Or, and Elaine. Middle row—Thunberg, Val d'Andorre, Mr. Burnet, Golden Dragon, Meg Merrilies, Jeanne Delaux, Elaine, Roseum Pictum, Thunberg, Fernand Feral, Jeanne Delaux, Gloriosum, Meg Merrilies, Criterion, Mr. Burnet, and Comtesse de Beauregard. Front row—White Dragon, L'Adorable, Comte de Germiny, M. Astorg, Duchess of Albany, Hiver Fleuri, Yellow Dragon, Fernand Feral, M. Astorg, Duchess of Albany, Hiver Fleuri, Fair Maid of Guernsey, Roseum Pictum, Alhum striatum, Marguerite Marrouch, and L'Adorable. This was one of the best stands of Japanese we have seen, every bloom being good. Mr. J. Ridout was a good second, and Mr. J. Bettesworth third, seven exhibitors staging collections.

Reflexed blooms were fine in the class for twelve, Mr. F. Moore, gardener to W. C. Pickersgill, Esq., Blendall Hall, Bexley, securing the chief honours with large examples of Mrs. Forsyth, Cloth of Gold, Garibaldi, Golden Christine, Felicity, Peach Christine, Cullingfordi, Dr. Sharpe, and Phidias. Mr. E. Wills, gardener to Mrs. Pearce, The Firs, Basset, Southampton, was a close second with handsome blooms; and Mr. J. Gore third. Seven good stands were entered. Anemone Pompons were capitally shown by Mr. R. Whibley, Bethlehem Hospital, who was first in the class. Mr. Gore had the best twelve Pompons, gaining a similar prize. In the metropolitan classes, Mr. Langdon won the first place for twelve incurved with neat even blooms, and he was also first with twenty-four incurved, Mr. S. Gibbey leading with twelve Japanese.

Grapes were admirably represented in the class for a collection of twelve bunches, not less than three varieties, six competitors entering. Mr. J. Harvey, gardener to J. Waters, Esq., Myskyns, Sussex, was awarded chief honours for grand bunches of Gros Colman, Gros Guillaume, and Alicante, the last well coloured. Mr. J. H. Goodacre, gardener to the Earl of Harrington, Elvaston Castle, Derby, was second with six varieties, his Gros Colman being extraordinarily fine. Mr. W. Allan, gardener to Lord Suffield, Gunton Park, Norwich, was third. For white Grapes, Mr. J. Roberts, Gunnersbury, was first with Muscat of Alexandria very fresh and clean. Mr. J. Chalk, gardener to G. Read, Esq., Salisbury, and Mr. A. Smith, gardener to W. H. Sewell, Esq., Loughton, was third, all with the same variety. Mr. J. Harvey was again first with black Grapes, Gros Colman. Mr. A. Smith and Mr. J. Wing, gardener to M. Shepherd, Esq., Roupell Park, Tulse Hill, was third with Alicante in a class of nine exhibitors.

In the Apple classes, Messrs. Duncan, C. Ross, and C. Jacobs were the prizewinners for dessert varieties. Messrs. J. McKenzie, Linton Park Gardens, C. Ross, and A. Smith taking the similar honours for culinary varieties. The best Pears were from Messrs. W. Allan, C. Goldsmith, and Bettisworth.

Messrs. Sutton & Sons' prizes for a collection of vegetables brought eight exhibitors, Mr. C. J. Waite leading with clean produce; Mr. J. May second, Mr. H. Miller was third, Mr. S. Haines fourth, and Mr. T. H. Beckett was fifth. Messrs. Webb & Sons' prizes for vegetables brought six competitors, the prizes being accorded to Mr. S. Haines, gardener to the Hon. Earl of Radnor, Coleshill House, Highworth, Mr. J. May, Northau House Gardens, Barnet, and Mr. T. A. Beckett, Cole Hatch Farm, Amersham. The leading Potato prizes were won by Messrs. E. S. Wiles, C. Osman, W. Pepper, W. C. Jacobs, and E. Chadwick.

In the plant classes Mr. W. Monk, Leytonstone, was a successful exhibitor with large flowered specimens, Mr. R. E. Reeve, Hadley Green, Barnet, being first with six Pompons; while for groups, Mr. Edwards of Balham, Mr. Townsend, Putney, and Mr. Stevens, Putney, were the prize winners, having very beautiful effective collections.

Messrs. Cannell & Sons have a large and handsome collection of Chrysanthemum blooms, Mr. R. Owen a collection of blooms, Messrs. Laing and Co. a group of plants, and Messrs. Sutton & Sons about 150 dishes of Potatoes.

CROYDON.—NOVEMBER 10TH AND 11TH.

The annual Show of the Croydon Horticultural Society was held in the small Public Hall, Croydon, on the above dates. The Show was an attractive one, cut blooms and groups of Chrysanthemums being good, but unfortunately the weather was very unfavourable on the opening day. The principal awards were as follows:—For twenty-four incurved blooms, open, the first prize was awarded to Mr. H. Alderman, The Gardens, Morden Hall; the stand was a very even one, Mrs. Heale, Blush Queen, Jardin des Plantes, and Lady Slade being good. The second prize went to Mr. Gibson, gardener to J. Wormald, Esq., Morden Park, Kingston-on-Thames; Empress of India, Princess of Wales, and Golden Empress were very fine in this stand, but many other blooms were poor. Mr. R. Ridge, gardener to Lady Ashburton, Addiscombe Farm, Croydon, was third, one other group being shown. In a corresponding class for Japanese the positions of Messrs. Gibson and H. Alderman were reversed, the former winning with something to spare; nevertheless, Mr. Alderman had an excellent stand. Mr. S. Elsey, gardener to R. G. Perry, Esq., Ashleigh, Addiscombe, was third. Two other stands were shown. For a group of Chrysanthemums Mr. W. Curd, 73, George Street, Croydon, was a very easy first with a well-arranged collection of healthy well-flowered plants.

One other group was shown—namely, that of Mr. J. Cook, gardener to S. Ezekiel, Esq., Duppas Hill, to which a third prize was given. For twelve foliage plants in 6-inch pots Mr. H. Alderman was first and Mr. J. Rodbourn, gardener to Baroness Heath, Coombe House, second. There was but one entrant (Mr. J. Cook) in the class for three trained plants of large varieties, three Pompons, one specimen plant of a large variety, and one specimen Pompon, he taking first prizes in all. For a collection of Apples, not exceeding twenty varieties, there were three entries, an excellent collection from Mr. H. Alderman securing the first prize. Mr. Jones, gardener to J. B. Brougham, Esq., Wallington Bridge, was a very good second; Mr. Rodbourn third. The following were the awards in the section for local exhibitors. For a group of plants (one entrant) first prize to Mr. J. Cook. For twenty-four incurved flowers (one entry) first prize to Mr. C. Evans, gardener to S. Underhill, Esq., Chichester Road, Croydon. For twelve incurved (four entries), first, Mr. Evans; second, Mr. Rodbourn; third, Mr. G. Lane, gardener to Mr. Alderman Barrow, J.P., Park Hill. For six incurved (two entries), first, Mr. Warner, Frome Cottages, Church Road; second, Mr. J. Cook.

For twelve Japanese (three entries).—First, Mr. G. Lane; second, Mr. C. Evans; third, Mr. Rodbourn. For twelve large Anemone varieties (four entries) first, Mr. J. Cook, a good stand; second, Mr. Rodbourn; third, Mr. Dobson, gardener to Miss Stenning, Addiscombe Road. For twelve Anemone Pompons (two entries).—First, Mr. Dobson; second, Mr. Cook. For twelve cut blooms, with foliage (six entries).—First, Mr. S. Elsey; second, Mr. Westead, gardener to Mrs. Lodge, Bramley Hill; third, Mr. Lane. For six blooms, any incurved variety (five entries).—First, Mr. Ridge (Prince Alfred); second, Mr. Staines, gardener to J. Newton, Esq., J.P., Park Hill (Mrs. Dixon); third Mr. Lane (Mrs. G. Rundle). In the corresponding class for Japanese, Mr. Ridge was first with Comte de Germiny, very fine; Mr. Rodbourn second with Madame Audiguier and third with Dormilion. There were five entries.



HARDY FRUIT GARDEN.

HINTS TO PLANTERS.—Before all things make sure of enough trees of sorts of well-known excellence of each kind of fruit to ensure a full successional supply both for the dessert and for cooking; then add as many choice sorts as space can be had for, but never sacrifice utility for the sake of fancy. We know a large garden with several hundreds of fruit trees so badly chosen as to sorts, that at the present time the display of fruit in an exceptionally fine fruit house is meagre and altogether unsatisfactory. It is really a large collection obtained from all parts of this country and the Continent, and though undoubtedly both curious and interesting, it practically fails to meet the requirements of a large establishment. Cordons afford special facilities for making collections of fruit. Planted against walls, buildings, or fences 18 inches apart, trained diagonally at an angle of 45° upon low supports, and vertically upon lofty ones, they constitute an important feature, and we may add a very useful one without any encroachment upon space required for pyramidal, standard, or bush trees. In planting a wall of single cordon Pears, let them be arranged in the order of ripening, beginning with early summer sorts and ending with such late sorts as Olivier de Serres and Madame Millet. Try and make the arrangement of the trees in the fruit garden attractive; an avenue of pyramids with an occasional archway of cordons over the path, marginal horizontal cordons, cordons as espaliers, as well as palmette verriers. Then have out upon the quarters whole rows of such indispensable sorts of fruit as Rivers' Early Prolific Plum, Crittenden Damson, Pearson's Prolific Nut, Margil, Cox's Orange Pippin, Warner's King, and Small's Admirable Apples, and such "sure" Pears as Williams' Bon Chrétien, Comte de Flandre, Knight's Monarch, and Doyenné du Comice. At corners and other conspicuous positions have handsome specimens of fruit remarkable for beauty of form and colour, such as Api, Kerry Pippin, King of the Pippins, and Worcester Pearmain Apples, Transparent and Belle Magnifique Cherries, Beurré Clairgeau and Louise Bonne de Jersey Pears. Turn north walls to account not only for Morello Cherries, but also for the choicest Plums and a few of the best early autumn Pears, our object in doing this being to prolong the season of favourite sorts. For example, we have Williams' Bon Chrétien, Fondante d'Automne and Marie Louise Pears, which generally afford us excellent late fruit from tree against a north wall. We have, too, from the same wall a nice and very valuable successor of Green Gage, McLaughlin's Gage, Transparent Gage, Reine Claude de Bavay, Blue Imperatrice, and Coe's Golden Drop Plums.

FRUIT FORCING.

VINES.—*Early Forced Vines in Pots.*—The house must now be ready and the plants placed in position. If weight and quality of Grapes are desired the apertures in the pots should be widened and some turfy loam placed within easy reach of the roots. It may be placed against or on the pedestals of loose bricks, and the roots will follow the liquid given, and the turf hold so that the roots will send up plenty of support for the Vines. The stands or pedestals will admit of the ready turning of the fermenting materials without disturbing the Vines. Oak or Beech leaves are the best to afford bottom heat. They supply a genial warmth and moisture in the early stages, and rich stimulating food towards the close.

If the canes have not been shortened to the proper length and dressed with styptic it is best to leave the Vines their full length and disbud after they break. For all purposes none is better than Black Hamburgh. Royal Ascot is good, but none is more appreciated than Madresfield Court. It requires liberal feeding up to the Grapes changing colour, and then lessened supplies, with a dry atmosphere. Where the Muscat flavour is wanted White Frontignan should be grown.

Early Planted out Vines.—To ensure ripe Grapes in May the house must be closed by the middle of the month. This more particularly applies to young and vigorous Vines that do not, as a rule, "break" so quickly as Vines that have been forced for a number of years. As a fuel economiser, and to produce a soft humid atmosphere, a good ridge of fermenting material may be placed upon the border and turned over at short intervals, additions being made as the heat declines. Old Vines will not need depressing, they may be tied up to the wires, but young Vines will need to be brought into a horizontal position over the hot-water pipes or fermenting material where they can be well syringed with tepid water about 10° warmer than the house. The temperature of the house may range 50° at night, 55° by day, and 65° on bright days.

Houses of Ripe Hamburghs.—The atmosphere cannot be kept too dry. A steady temperature of 50°, a gentle warmth in the pipes, and free ventilation on dry days will best suit them until the leaves fall. This effected, the Grapes had best be cut, bottled, and placed in late houses, Muscats or Lady Downes, or in a sniftable house for keeping them. The leaves should be cleared away as they fall, and water excluded from the house.

Late Grapes not Finishing Well.—There are three primary causes of this—i.e., too late starting, overcropping, or a bad condition of the roots. Nothing will be gained by pushing the fires now or after the wood is ripe, but that must be effected under any circumstances. A high temperature will not prevent the Grapes shrivelling when the leaves fall. The defect in finish being due to overcropping, relief should be given the Vines by cutting a portion of the crop at the earliest convenience, but where it can be traced to imperfect drainage or bad borders no time should be lost in getting out the old soil, rectifying the drainage, and relaying the roots in fresh compost.

PINES.—As growth advances in these plants they should be placed so as to obtain all the light possible, and be enabled to make the most of every ray of sunlight whenever it prevails. With a view to this keep the glass clean, and let the plants be placed near to it. The beds of fermenting materials subside considerably through decomposition, and fresh made up ones, unless well trodden down, are apt to settle rapidly. In either case attention should be promptly given to raising the plants so that they have the full benefit of the light, and in so doing not chilling the plants or allowing them to become over-heated at the roots.

Assorting the Plants.—It should be a practice at this time of year, if not done earlier, to assort the plants according to their respective requirements before winter. The fruiting plants should be given the best places for swelling off the fruits properly at a time when natural means will not afford much assistance. The fruiting plants must under any conditions have a night temperature of 65°, and 70° to 75° by artificial means during the daytime. The successional plants will only require a night temperature of 60°, and 65° by day, with an advance from sun heat, but not without air, to 70° or 75°. Other young stock, which it is not advisable to bring forward too quickly, as they are not prepared to make much growth, will progress satisfactorily in a night temperature of 55° to 60°, and 60° to 65° in the daytime, above which ventilating freely, but avoiding chills or anything likely to cause a stunted growth. Fruiting plants will require atmospheric moisture at all times. Sprinkling available surfaces must be regularly attended to, and the plants will need syringing in a light house during bright weather twice or thrice a week. Successional plants and others will only require syringing occasionally, as they will derive considerable moisture from the fermenting beds. Keep the glass clean, as every ray of light is of great value.

Fermenting Beds.—For these Oak and Beech leaves are much the best. They are more durable than others, and the heat is consequently milder and lasts longer. New beds should be made where necessary. The best plan, where the extent of glass admits of it, is to free all the pits of the plants, and not return them until the beds are in proper condition. More injury arises from the plants being shifted about, taken from warm beds and chilled, and from cold quarters to warm beds, than many give credit for. The greater care the plants are taken of in these respects the better they will respond to the call of the cultivator.

STRAWBERRIES IN POTS.—All plants for early forcing must be in frames, with a view to protect them from heavy rains, snow, and severe cold; those for late work are just as well, if not better, plunged in ashes in a sheltered situation, having a light covering of bracken or straw in severe weather. The practice of wintering Strawberries for forcing in Peach and other houses with open ventilators, where from the piercing currents of air evaporation is constant and excessive, only wastes the energies of the plants, and not infrequently destroys the roots at the sides of the pots. Drought is the great bane of the Strawberry; therefore, those in frames or pits must not be neglected for water, the soil always being kept moist. About the middle of this month a hatch of La Grosse Sucrée, Vicomtesse Hericart de Thury, should be prepared for placing in the early Peach house, to which fire heat will be given early in December. The plants must have the drainage seen to, and if defective rectified, the surface of the soil raked, the pots washed, and a surface dressing given of fresh horse manure rubbed through a sieve. Those having the convenience of a house for forcing Strawberries may make a start, the plants being

placed well up to the light, and the temperature 50° by day and 40° to 45° at night, admitting air freely above 50°.

CUCUMBERS.—Plants that have been in bearing some time will be invigorated by receiving a top-dressing of turfy loam, to which has been added a sixth of charcoal, surfacing with an inch of sweetened horse droppings. If put in fresh they will part with too much ammonia, and probably injure the foliage. See that the soil is not too dry, but let it be getting into that condition before any is given, then afford a thorough soaking with water at the same temperature as the house. Ventilate moderately whenever the weather is favourable, but avoid lowering the temperature or admitting air in such quantity as to cause excessive evaporation, as a check or chill from any cause is alike injurious to plants and fruit. The temperature should be maintained at 65° at night, and in severe weather 60°, and 70° to 75° by day from fire heat, advancing 10° to 15° with sun heat.

PLANT HOUSES.

Imantophyllums.—These plants will have completed their growth, and those not wanted to flower for some months should have a cool airy structure. They should also be watered with great care, giving considerably less than has been the case up to the present time. If overwatered during the resting period the tips of their dark green foliage are certain to turn yellow and the beautiful appearance of the plants is destroyed. If kept on the dry side they will remain in perfectly good condition. Some of the earliest plants are showing their flowers, and will be much brighter in colour if they are developed in a little warmth. At this season of the year the flowers, if allowed to expand in a cool house, are practically colourless. Seedlings raised from good varieties will be better in a cool than a heated house during the season of rest. This treatment results in increased strength and vigour another year.

Amaryllises.—The whole of these plants will have made and completed their growth; they should now be given a cool but light position to further ripen and harden the bulbs. The secret of flowering these plants profusely is well-ripened bulbs, which is brought about after a good season's growth by withholding water gradually at this season of the year until both bulbs and roots are thoroughly matured. If water is discontinued suddenly the roots are certain to die back, but if the supply is decreased judiciously they will remain perfectly fresh and plump. After the plants are once put to rest they will do very well in any position, even under the stage, but this position is not advisable if a large amount of drip will fall upon them.

Chrysanthemums.—Some care is needed just now with plants that are unfolding large flowers. Very large flowers, such as are grown for exhibition, are much more difficult to preserve from damp than those of a smaller size. A close confined atmosphere is certain to result in the petals damping, and so quickly do they fail after they once commence that the flower becomes rotten and useless in a few days. Where heat is used to expand the blooms the difficulty of keeping them right is greatly increased. A good circulation of air must be maintained if they are to develop their beautiful large flowers without risk of the petals damping. The first petal that displays signs of damping must be removed at once, for others quickly rot around them. Princess of Teck and other late kinds for flowering after Christmas may still remain outside, but they should be near some shed or house where they can be carried in at once if stormy bad weather sets in. It is a good plan to secure the pots so that the wind cannot blow them about and break them, and then cover them with canvas in case of frost, fully exposing them during the day when favourable. By slight protection of this description we hope to keep our late plants outside for another month, unless the weather proves very ungenial. Chrysanthemums are later than usual this year, and this is an advantage where the plants are required for decoration, as such large numbers will not come in at one time, and the latest will be certain to yield a good supply of flowers at a time when they are most needed.

Tree Carnations.—These should be in their winter quarters, and it is an admirable plan where a good stock of plants is grown to sort them into two or three batches. Those for spring flowering—that is, the latest, should have a cool, light, airy position as close to the glass as possible, so that they will not draw up weakly. They should also be stood upon some moisture—holding material, such as gravel or ashes afford. The earliest should have a position where the temperature can be kept from falling below 45° or 50° at night. These will unfold their blooms and yield flowers for cutting until Christmas if carefully watered and freely ventilated on all favourable occasions. Air is not of vast importance if the atmosphere of the house is kept moderately dry to prevent the blooms damping, and the temperature not too high. Young stock that has been raised by layering should be lifted and potted singly in 3-inch pots, and then stood in a cold frame. Spring-struck plants are undoubtedly the best, and start into growth more freely, but if these are well cared for they will make extra size plants for early autumn flowering. Gloire de Nancy and the whole of the Souvenir de la Malmaison type should be lifted and potted at once.

THE BEE-KEEPER.

NOTES OF THE SEASON—SYRIAN QUEENS, BEES, AND DRONES.

OCTOBER with us has been the finest month of the year, exceptionally so for that month, and an eventful one with the

bees. The temperature has been uniform throughout, seldom lower than 45° at night. One day it reached 65° , and the two last days of the month were brilliant, with a temperature of 60° and 58° consecutively. Sweet Peas have grown from 1 to 2 feet, and bloomed freely. Ferns have thrown up many fresh fronds; herbaceous plants are fresher and blooming better than they did during the summer months. Wall-flowers have grown more than at any other time during the season, while Poppies and Marigolds have flowered profusely, keeping the garden gay and the bees at work. Colchicums have lasted one month only, while last year they lasted two months. Thus our undug plot has given us flowers for nine months of the year and promises still longer. A seedling Briar, which has beautifully coloured and fine formed petals, is now covered with hleps, appearing no way injured by the tendrils of a perennial Pea that covered it, and bloomed for many weeks during summer, while beneath it and adjoining trees, there were from February till May Snowdrops in variety, and Crocuses, Daffodils, Narcissus, Aconites, Hyacinths in variety, the Grape Hyacinths in variety, and other bulbs, together with different members of the Crowfoot tribe, &c., which in their turn bloomed and kept gay the greater part of the year what without them would have been almost a barren spot.

Not only has October given us Roses and other flowers that July and August denied us, but there has been scarcely a day during the whole month that the Syrian bees have not collected much pollen. They are, without doubt, the most assiduous and interesting bees I know. As foretellers of the weather they eclipse the barometer, and as collectors of honey the propensity is so great that it is almost a fault, if the bee-keeper is careless enough to allow them a taste from any hive in the apiary. So quick are they in discovering exposed sweets and conveying the intelligence to the inmates of its whereabouts that it surprises many. Recently I put out a little peameal and along with it a small piece of honeycomb, for the purpose of ascertaining the state of several hives that were too strong to be meddled with at this season. I lifted one bee on the comb and put it in my revolving peameal holder, watching its return at the entrance to the hive. It had not gone in more than six seconds when a number flew out in search of the honey, and in not more than a minute hundreds were upon the wing. How they convey the news is a mystery to me.

When I commenced raising my second batch of queens during the beginning of August, and when dividing into nuclei, their thieving propensity was shown very strongly, and had I not stopped it by closing them in alternately, and setting robbers upon the strongest ones by spilling a little syrup, the fight must have ended similarly to that of the Kilkenny cats, so persistently did some of them continue to rob from each other. The amusing part of it was that when shut out of their own hive they return quite contentedly with their ill got gains to where it was taken from, and immediately set out in quest of more from other hives where they could force an entrance. After a while they were looked upon by each other as strangers, and acted in defence of their citadels. Nothing superfluous is allowed inside the Syrian or Cyprian bees' hive. It is because of these excellent qualities that I recommend them.

Their spiteful nature when invading their hive I have overcome by showering sweets upon them and a little tact in manipulation, and I am in hopes that their tenderness during winter will disappear after a few generations, and with a little more care in the preparation of their hives, so that after a little they will be no worse than other bees, but better, as they never molest people unless when disturbed, so that people who are annoyed by the bees attacking them when walking in the garden are free from this molestation by keeping the wicked and spiteful Syrians.

After all my care to preserve and perpetuate the pure race of these bees, I had abandoned all hopes of doing so after October had set in, when the drones were becoming

inactive, and were being rapidly killed, in hives, too, both well provisioned and having unfertilised queens; and I was surprised to find further on several that had been fertilised so late as the 4th and 14th of October respectively. Previous to the first date I observed that the queens flew early in the day, while the drones did not care about flying until about 3 p.m., while in the other hives they had killed theirs. From this hive, already well stored, I removed all the filled combs, and confining the bees upon almost empty ones, fed a little, which had the desired effect of causing the bachelor drones to make themselves more conspicuous in the sunshine than they had previously done, resulting in the mating of queens during October. Nor is this all. Many hives swarmed this year at the Heather during the end of August and early part of September, and but for these late-preserved drones many hives would have been useless. The preservation of drones till late in the season is wise.

Bees seem not only to have forethought but, to a certain extent, foreknowledge. I have shown where with large stores they carry on successfully the internal economy of the hive, whereas with a paucity of these a system of waste of eggs and queen power goes on daily; while fit and start and dribble-feeding causes the bees to depose their queen at a most inconvenient and improper time, which to remedy can only be accomplished by preserving drones until the very latest. To effect this there must neither be short supplies of food nor stinted feeding. The killing of the drones is not always an indication that the queen has been fertilised.

In every instance with these late bred queens the bees, up till the queens were about seven weeks old, carried much pollen, after which they abandoned it, thus again differing in this respect from other varieties. The queens were fertilised between the eighth and ninth week of their existence from creeping out the cell, and the youngest drones were ten weeks old. Seeing that fertilisation has taken place, it is possible I may be wrong that aged drones become incapable at so early a date, if at all. If health will permit, I will next season take more pains in securing early fertilisation by removing the young queens and drones to a distance. At last I have been fortunate, but during the months of July and August one disaster followed another, until but one pure queen remained.—A LANARKSHIRE BEE-KEEPER.

THE COTTAGER'S STRAW SKEP—HOW TO GET SECTION HONEY FROM.

MODERN bee-keeping has undoubtedly placed the cottager with his skep and straw supers at a disadvantage. Comb honey in his "caps" will not sell when sections are in competition with them, nor does their "run" honey compare favourably with the modern bee-keeper's extracted. This being so, it behoves him to look about and see how he can adapt his ancient hives to altered circumstances. He must accustom himself to the use of such modern appliances as will place his honey on a level with that of his neighbours. To do this it is not necessary to abandon his straw skep, as I have been told certain unscrupulous hive-makers keep telling the ignorant cottagers. To assist any of your readers who are not yet acquainted with the modern sections and how to use them the present notes are written.

The change need not be a very difficult nor very expensive one. The little boxes here figured (fig. 63) are so simple in construction that anyone willing to try can make them in their leisure hours. Timber is cheap enough, and I think the best plan is to go to the nearest joiner's shop and get suitable well-seasoned boards. A box to hold ten 1 lb. sections has to be 11 inches by 10 inside measurement. For sides and bottom fittings $\frac{3}{4}$ -inch board is strong enough; and for ends, tops, and bottoms, &c., $\frac{1}{2}$ -inch will do. Get the boards 11 inches wide. To make one complete box it takes 25 inches of the former ($\frac{3}{4}$ by 11 inches), and of the latter 3 feet. First cut the boards for the body of the box to the measurements given in the accompanying sketch:—Sides, 12 inches by $4\frac{1}{2}$; ends, 10 inches by $4\frac{1}{2}$; next cut out four pieces, *a, a, a, a*, 13 inches by $1\frac{1}{2}$. The fourth piece is required to fill up the spaces *b, b, &c.*, when fitted on to the box. Off the same piece of wood cut three pieces $\frac{1}{2}$ inch wide, and fit them on to the other three as shown at *c, c, c*, using wire nails long enough to go through and rivet. These are

simply nailed on to the bottom of the box, taking care that the middle one is exactly in the centre, the others resting against the sides of the box inside, so that there is just $4\frac{1}{2}$ inches between the dividing laths, *c, c, c*, for the 1 lb. sections. This done, a triangular piece made out of the $\frac{1}{2}$ -inch board is fitted into the end of the box in the position shown in dotted lines at *d*, and nailed to the end of the box. A similar piece is required as a wedge to keep the sections tight together, the only difference being the cutting the top corners off, as shown at *e*, and a nail driven into one end with a piece of string attached to pull it up by when about to remove sections. The top is shown at *f*, and the bottoms are made the same, only a round hole, 3 inches in diameter, is cut out in the centre to allow the bees to pass from the hive into the box. The spare pieces of board are required for nailing on to the ends of top and bottom to keep them from warping. It is quite unnecessary to plane or dress the wood for these boxes, so that the only tools absolutely necessary are a square, a saw, and a hammer. I think it is necessary that, to work to advantage, two such boxes should be provided for each hive, with only one top and bottom for the two.

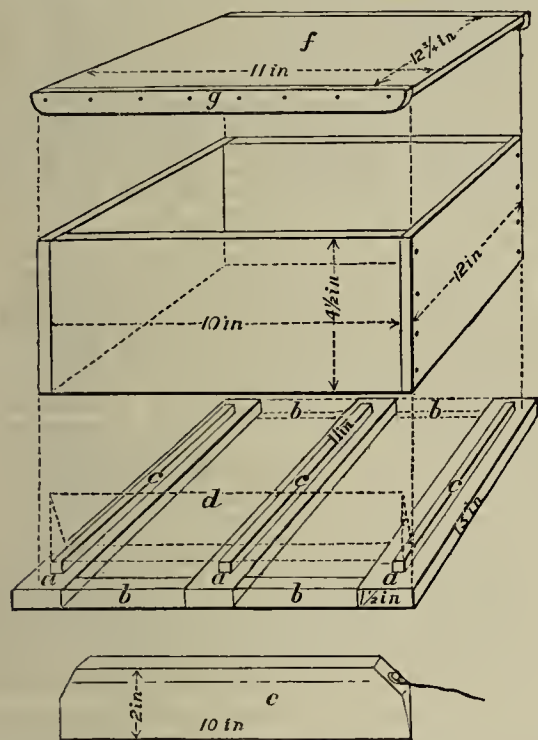


Fig. 63.

The expense per hive would be about 10d., not much more, if any than the price of a good "cap."—A COTTAGE BEE-KEEPER.

CALEDONIAN APIARIAN SOCIETY.

THE above Society held its annual closing meeting of the session in M'Innes' Temperance Hotel on Wednesday, the 27th October, at 2 P.M. Wm. Sword, Esq., Bonny View, presided. There was a fair attendance, and several new members were enrolled, while those present seemed to take a deeper interest in the welfare of the Society than usual. After the minutes of previous meeting had been read, approved of, and signed, the prize schedule for show to be held at Perth next summer was revised and some alterations made from the previous year. During the meeting a telegram from Angus Cameron, Esq., Blair Athole, was handed the Honorary Secretary, Major Bennett, apologising for his absence and recommending more extensive prizes for the produce of bees and fewer for hives and appliances, which I think right and have advised for long. Mr. Wm. McNally, Glenluce, said owing to the great work that necessarily fell upon the Honorary Secretary, he thought an Assistant paid Secretary should be appointed. Mr. J. S. Hutcheson proposed Mr. Wm. Thomson to that office, but he declined accepting it, on the ground that the Society was sure to suffer if the secretaryship was removed from the long established and central premises of Major Bennett. Mr. Sonds was thereafter unanimously appointed Assistant Secretary at an unnamed salary. Owing to the untoward weather during the time of the Show at Dumfries, the funds of the Society showed a slight deficit. The members present, however, pledged themselves to do their best to wipe it off and relieve Major Bennett not only of the responsibility of expenses, but of much labour as well in the future.

Two interesting papers were then read, one by Major Bennett the other by Mr. Wm. McNally, Glenluce, upon the past season and doings of the bees. Both papers were much appreciated, the authors being applauded, and a vote of thanks were passed for their excellent papers. Mr. J. D. Hutcheson made a statement and showed where much good would result by holding conversations during the winter months, and reading thereat papers on bee husbandry and kindred subjects, such meetings to be held early in the afternoon to afford those at a distance an opportunity of

attending and getting home at an early hour. Mr. Hutcheson, although urging his proposals, did not get the support they deserved, although they were not opposed. It is to be hoped the members will yet give it their more serious consideration, while by so doing they are but carrying out the object and constitution of the Society. We hope that these meetings will be taken up before another year passes away.

Mr. A. Sweet, a new member, put a question regarding the peculiar but fine flavour of the far-famed Borgue honey, asking if it was owing to the flowers peculiar to the district, such as wild Sage, Orchis, or other flowers common near the seashore. Mr. Wm. McNally said it was gathered from Clover. Mr. W. Thomson said that every district produced a different flavoured honey, even although it was gathered from the same kind of flowers. In his opinion the flavour was due to the soil the flowers grow on, as bees did not store promiscuously different kinds of honey together, but always separately. The form of hive was also discussed. There was a general consensus of opinion that the Stewarton type of hive was the hive.

The Honorary Secretary made a few remarks at the loss of Mr. James Anderson, Dalry, Ayrshire, a staunch friend and indefatigable worker amongst his bees and for the good of this Society, to which all agreed, and a letter of condolence was agreed upon to be sent to his daughter, who attended her father and assisted him with his bees, and who also belongs to the fraternity, having been a prizewinner at the last Dumfries Show. At this stage the letter of J. D. McNally in September number of the *Bee-keeper's Record* was read to the meeting, and denied by Mr. Thomson. Mr. McNally was allowed to bring forward his proofs for the charges against the Judge, but failed to prove a single item, and as no further attempt to give proof was made, the chairman closed the discussion, especially as the Honorary Secretary, who was at Dumfries, exonerated Mr. Thomson from the charges made, and explained how, through the illness of an assistant, the arrangements had got out of gear, and partly accounted for the said irregularities, which were much to be regretted. A vote of thanks to the chairman and Honorary Secretary closed the proceedings.

TRADE CATALOGUES RECEIVED.

James Vetch & Sons, Royal Exotic Nursery, King's Road, Chelsea.—*Descriptive Catalogues of Fruit Trees and Roses.*

Little & Ballantyne, Carlisle.—*Catalogue of Forest, Fruit Trees, Evergreens, &c.*



All correspondence should be directed either to "THE EDITOR" or to "THE PUBLISHER." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

TO CONTRIBUTORS.—In consequence of the pressure on our columns this week the insertion of some valuable contributions have to be postponed to future issues.

Primulas Decaying (*Hortus*).—We could not find any grubs in the soil sent, but the most likely cause of the Primulas decaying at the "collar" is that at some time the soil has become too dry, thus killing the roots, and the plants have been unable to appropriate the water subsequently supplied. This is a common cause of failure with Primulas.

Wintering Petunias (*H. O.*).—We have no difficulty in preserving these plants on a shelf in a light house in which the temperature is never forced beyond 50° by fire heat and seldom falls to 40°. Care is necessary in watering, an excess causing the roots to decay; while if kept too dry they shrivel. The *Ne Plus Ultra* Peas from a sowing made on June 11th are very good for either the north or south of England.

Vines Unhealthy (*Inquirer*).—The sample of Vine root sent with fruit for naming, indicates that the soil is very unsuitable for Vines. The roots should be carefully lifted, cutting off decayed and cankered portions, and placed in fresh loam containing a liberal admixture of wood ashes, also some lime rubbish, and, if procurable, crushed bones. The uninjured roots we should rotch at intervals of 2 or 3 feet, and surround them with a mixture of half sandy loam and half wood ashes for inclosing fresh roots. A depth of 2 feet of soil well drained will suffice. The roots should be covered about 4 inches deep, and the surface of the border mulched 2 or 3 inches thick with half-decayed manure. Your Vines cannot flourish until active roots are plentiful in good soil.

Plants for Covering Ground under Trees (*Balkan*).—There is nothing better than the common or English Ivy (*Hedera Helix*), or Irish (*Hedera canariensis*), both of which grow quickly and soon form an acceptable green clothing. It is best to break up the ground before planting, thoroughly clearing it of weeds, and to insure its covering the ground soon put in strong plants at about a yard apart every way, and train the shoots every way, pegging them to keep them in position. They will root into the soil as they grow, and if watered during dry weather they will grow more freely. Periwinkle is also good for the purpose, the plants being put in about a foot apart. The Lesser Periwinkle is best—viz., *Vinca minor*.

Fir Tree Oil (*A. B.*).—We are obliged by your letter, but doubt if any public advantage would result from its publication. We know several excellent gardeners who use this insecticide to their satisfaction, and we have seen plants injured by its use even when the instructions as to quantity have been carefully followed. We suspect that the nature of the water employed in the mixing is a matter of importance, more especially since a very intelligent gardener found the insecticide injurious to some plants when mixed in hard water, while it did not injure the same plants when used with rain water. We cannot imagine any gardener persistently employing any article that failed to answer its purpose, nor on the other hand rejecting what he found to be safe and good because of its condemnation by someone else. Plants with soft woolly foliage are more liable to be injuriously affected by strong insecticides than those are which have firm smooth leaves.

Destroying Weeds on Walks (*F. J.*).—We have seen Smith's weed killer answer its purpose well; but as you cannot procure it in your district you can try the following:—A quarter of a pint of sulphuric acid mixed in a gallon of water and immediately poured upon the path will destroy all small weeds; so will an ounce of crude carbolic acid in the same quantity of water. A waterpot with a fine rose answers best for the work. Care must be taken not to let the acid touch the clothes or boots, or it will burn holes in them, and it will also kill Box or Grass edgings. Apply it in fine weather, and you will have no more weeds for several months. The acid can be had from any chemist or oil and colour dealer. We have not tried Birkenhead's beetle-trap for catching woodlice.

Vines Failing (*A Young Gardener*).—You appear to be growing Grapes under great disadvantages. In such a house with a flat heavy roof glazed with small squares you cannot be expected to produce good Grapes with the Vines only 2 feet apart. With a very thin disposal of the laterals and a light roof we have seen good Grapes produced with the Vines 2 feet asunder, but special and careful management was given in preventing overcrowding and the production of good foliage. You say the growths of your Vines were crowded, yet the leaves were large but thin. They were large because of the efforts made to reach the light they needed, which could not reach them, and they could not be otherwise than thin under those circumstances. Very different foliage must be had before good crops of satisfactory Grapes can be produced. You had better carry out your plan of cutting out every alternate rod, and try your proposal of taking up a young cane between each spurred Vine and crop it on the "long rod system." The laterals on the spurred rods should be 18 inches apart, and each should produce six or eight leaves, according as there may be space for their unchecked development under the full and direct action of light; then, with healthy root-action in good soil and moderate cropping for a year, the Vines ought to improve considerably. As soon as the leaves fall is the best time for cutting down and pruning Vines, and you may dress the wounds well with painters' knotting. We are pleased you find the Journal useful.

A Selection of Apples (*E. Mordant*).—We give, as you requested, two dozen each of the varieties that were the most numerous exhibited at the Apple Congress at Chiswick. They are as follows:—King of the Pippins, Cox's Orange Pippin, Ribston Pippin, Kerry Pippin, Blenheim Pippin, Irish Peach, Devonshire Quarrenden, Sturmer Pippin, Scarlet Nonpareil, Court Pendu Plat, Yellow Ingestrie, Fearn's Pippin, Claygate Pearmain, Worcester Pearmain, Margil, Wyken Pippin, Cockle Pippin, Court of Wick, Red Astrachan, Adams' Pearmain, Mr. Gladstone, Golden Pippin, Mannington's Pearmain, Gravenstein, Lord Suffield, Dumelow's Seedling, Keswick Codlin, Warner's King, Blenheim Orange, New or Winter Hawthornden, Cellini, Ecklinville Seedling, Stirling Castle, Hawthornden, Manks Codlin, Golden Noble, Cox's Pomona, Alfriston, Emperor Alexander, Northern Greening, Tower of Glamis, Mère de Ménage, Beauty of Kent, Lord Derby, Yorkshire Greening, Annie Elizabeth, Norfolk Beefing, Loddington Seedling. We also extract from "British Apples" in reference to the poll in question:—"These returns are valuable as showing the extent of appreciation in which certain varieties are held throughout the country. They cannot, however, be altogether accepted as complete lists of the best or most desirable sorts to cultivate in all cases. For example, many excellent varieties of Apples, through being comparatively unknown, are placed much lower in the lists than their merits otherwise entitle them; among others, the following may be named, Pearson's Plate, Melon, Grenadier, Lane's Prince Albert, Bramley's Seedling, Frogmore Prolific, Lady Henniker, Golden Spire, Schoolmaster, &c. The most popular Apple—or that which has received the greatest number of marks (101 of a possible 130)—is Lord Suffield, King of the Pippins being placed second with 93. The most popular dessert Apple in England is Cox's Orange Pippin; but it is evidently not so well known or so well suited for the colder climate of Scotland. With this exception the returns are singularly uniform, the varieties selected as most suitable for the north being also held in the same appreciation in the south. Thus, the varieties of Apples that are really worthy of cultivation may be reduced to comparatively narrow limits. It may be remarked that the Committee consider many of the dessert Apples as too small for general use; since there are now so many good ones it would seem useless to cultivate them, such as Sun Young, Golden Harvey, Lamb Abbey Pearmain, Court of Wick, Redleaf Russet, Guernsey Pippin, Downton Pippin, &c. And in regard to culinary Apples, since so many excellent varieties of large size, &c., are now in cultivation, all those under the standard of 'Large, i.e., 3 inches in diameter,' might be, with advantage, at once discarded, excepting always a few sorts that are specially adapted to certain localities."

Planting Florists' Tulips (*W. E. L.*).—These handsome flowers will repay for the care you propose bestowing on their cultivation. A rich soil

is necessary, yet it must not be over-rich. Procure some one-year-old cowdung; spread over and upon the drains a stratum of this cowdung 2 inches thick; then mix about one-sixth of very well decomposed hotbed dung with the loam thrown out and laid on one side on commencing the operation of draining. If there is not enough soil to make the bed up level as before, procure some good loam for the purpose, mixing it with the same proportion of well decomposed dung. If the situation is low and damp, it will be advisable to place an edging round the bed, 6 or 8 inches deep, of sufficient strength to bear up the soil when it is raised to that height. The best material for an edging of this kind is blue slate, and the next, slabs of wood nailed to strong uprights driven into the ground at proper intervals. Mix the top surface with a considerable quantity of river sand; this will cause the bulbs to come out of the soil at taking-up time, clean, and of a bright brown colour. The best planting season is about the beginning of the second week in November, as near the 10th of that month as the weather and the state of the ground will permit. This rule applies to all the country north of London; perhaps, in the milder climate of the southern counties a week later would be better. Offsets may be planted a little sooner or later, as may be convenient. The tallest should be in the centre of the bed. This renders it necessary to plant them in rows lengthways of the bed, and not across it. This being determined upon, let the soil be levelled; then with a hoe draw a drill the length of the bed, as nearly 2 inches deep as possible. As soon as the drill is drawn, bring out all the tall growers, and plant them 5 inches apart at the bottom of the drill, giving each a gentle pressure. When the row is finished, thrust in at each end a strong stick, to mark where the row of bulbs is when covered up. Cover up the bulbs by the aid of a short-toothed rake. After that let the soil on each side of the planted row be stirred up with a three-pronged fork. Then set the line at the right distance from the centre (we mentioned that the beds should be 4 feet wide, which would allow 9 inches between each of the five rows, and 6 inches next the edging); the line then must be set at such a distance from the centre that the next row of bulbs will be exactly 9 inches apart from the centre one. Draw the drill the same depth as the first, and plant the next tallest flowers in it. Then mark the row with a stick at each end, and so proceed till the whole is finished; the lowest growers will then be next the paths all round the bed. Where the collection is small, hoops, either of wood or iron, with canvas covers, or mats to be thrown over the hoops, which ought to be high enough to keep the covering clear of the flowers, will do. This covering should be applied, not only when the plants are in bloom, but also to shelter them from the late frosts after the plants make their appearance, as well as the cutting winds during the early months of the year. Too much shelter only coddles the plants, and makes them tender. On all favourable occasions remove the coverings entirely, and let the Tulips have the benefit of fine weather and gentle rains. If the spring is unusually forward and warm, so as to bring the flowers on too early, retard them by putting on the covers only on the side exposed to the heat of the sun. For a large collection, a regular tent, formed of a frame of wood and covered with canvas, is required. As soon as a Tulip has done blooming cut down the flower stem, but do not injure the leaves. Expose these fully to the light and air. As soon as the leaves are turned yellow take up the bulbs. If delayed some time, and the weather should be wet, there is danger of their starting fresh roots, which would injure the bloom next year. When taken up, expose them to the sun a few hours every morning until they turn brown; and when perfectly dry, divide from the flowering bulbs all the offsets. They should be kept in a cool, dry room till the planting season arrives again.

Names of Fruits.—The names and addresses of senders of fruit to be named must in all cases be enclosed with the specimens, whether letters referring to the fruit are sent by post or not. The names are not necessarily required for publication, initials sufficing for that. Only six specimens can be named at once, and surplus fruits beyond that number cannot be preserved. (*St. Michaels*).—Pears: 1, Nouveau Poiteau; 2, Doyenné du Comice; 3, Duchesse d'Orléans. Apples: 1, Longville's Kernel; 2, Green Balsam; 3, Minchall Crab. (*F. L.*).—1, Nouveau Poiteau; 2, Bois Napoleon; 4, Beurré Clairgeau; 5, Beurré Diel. (*F. Jellico*).—1, Not known; 2, Beurré Superfin; 3, Epine du Mas; 4, Doyenné du Comice; 5, Not known; 6, Catillac. (*Hillside*).—You will find the reply in No. 1987. (*N. E. Owen*).—1, Alfriston; 2, Northern Greening; 3, Golden Reinette; 4, Cox's Orange Pippin; 5, Golden Winter Pearmain; 6, Dutch Codlin. (*Subscriber*).—1, Pitmaston Duchess; 2, Duchesse d'Angoulême; 3, Beurré Diel; 4, In bad condition; 12, General Todleben. (*J. E. R.*).—1, Beurré de Jonghe; 2, Fondante de Noël; 4, Winter Nelis; 5, Adèle de St. Denis; 6, Beurré Capiaumont. (*C. P.*).—1, Blenheim Pippin; 2, Golden Pearmain; 4, Hollandbury; 5, Flanders Pippin; 6, Winter Greening.

Names of Plants.—We only undertake to name species of plants, not varieties that have originated from seed and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in firm boxes. Slightly damp moss or soft green leaves form the best packing, dry cotton wool the worst. Not more than six specimens can be named at once. (*C. T. Grange*).—*Euonymus europæa*. (*West Country*).—1, *Oncidium ampliatum*; 2, *Oncidium tigrinum*; 3, *Diplacus glutinosus*. (*H. S.*).—The Orchid is *Lycaste lanipes*, the other plant is *Panicum variegatum*. (*Inquirer*).—The numbers were all displaced from the specimens except 4, which is *Maranta zebra*. The leaf with green and white stripes is *Aspidistra lurida variegata*. The two large leaves are *Dieffenbachias*.

COVENT GARDEN MARKET.—NOVEMBER 10TH.

TRADE very quiet, with good supplies. Prices unaltered.

FRUIT.

		a.	d.	s.	d.			s.	d.	s.	d.
Apples	.. .. 1/2 sieve	1	6	4	0	Melon	.. .. each	0	0	0	0
"	Nova Scotia and					Oranges	.. .. 100	6	0	12	0
"	Canada, per barrel	12	0	21	0	Peaches	.. .. per doz.	0	0	0	0
Cherries	.. .. 1/2 sieve	0	0	0	0	Pears	.. .. dozen	1	0	2	0
Cobs	.. .. 100 lb.	60	0	0	0	Pine Apples English	.. lb.	3	0	4	0
Figs	.. .. dozen	0	6	0	9	Plums	.. .. 1/2 sieve	1	0	2	0
Grapes	.. .. lb.	0	6	3	0	St. Michael Pines	.. each	4	0	6	0
Lemons	.. .. case	10	0	15	0	Strawberries	.. .. per lb.	0	0	0	0

VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Artichokes dozen	1 0	0 0	Lettuce dozen	1 0	to 1 6
Asparagus bundle	0 0	0 0	Musbrooms punnet	0 6	1 0
Beans, Kidney per bushel	2 0	3 0	Mustard and Cress punnet	0 2	0 0
Beet, Red dozen	1 0	2 0	Onions bunch	0 3	0 0
Broccoli bundle	0 0	0 0	Parsley dozen bunches	2 0	3 0
Brussels Sprouts 1/2 sieve	1 6	2 0	Parsnips dozen	1 0	2 0
Cabbage dozen	1 6	0 0	Potatoes cwt.	4 0	5 0
Capiscums 100	1 6	2 0	" Kidney cwt.	4 0	5 0
Carrots bunch	0 4	0 0	Rhubarb bundle	0 2	0 6
Cauliflowers dozen	3 0	4 0	Salsafy bundle	1 0	1 0
Celery bundle	1 6	2 0	Scorzonera bundle	1 8	0 0
Coleworts doz. bunches	2 0	4 0	Soakale per basket	0 0	0 0
Cucumbers each	0 8	0 4	Shallots lb.	0 3	0 6
Endive dozen	1 0	2 0	Spinach bushel	8 0	4 4
Herbs bunch	0 2	0 0	Tomatoes lb.	0 2	0 6
Leeks bunch	0 3	0 4	Turnips bunch	0 4	0 0

PLANTS IN POTS.

	s. d.	s. d.		s. d.	s. d.
Aralia Sieboldi dozen	9 0	to 18 0	Ficus elastica each	1 6	to 7 0
Arbor vitæ (golden) dozen	6 0	9 0	Fuchsia per dozen	0 0	0 0
" (common) dozen	6 0	12 0	Foliage Plants, var. each	2 0	10 0
Asters per dozen	0 0	0 0	Heliotrope per dozen	0 0	0 0
Bedding Plants, var. doz.	0 0	0 0	Hydrangea per dozen	0 0	0 0
Begonias dozen	4 0	9 0	Ivy Geraniums per dozen	0 0	0 0
Chrysanthemum dozen	6 0	12 0	Lilium anatum per doz.	0 0	0 0
Cockscombs per dozen	0 0	0 0	Lobelia per dozen	0 0	0 0
Cyperus dozen	4 0	12 0	Marguerite Daisy dozen	6 0	9 0
Dracena terminalis, dozen	30 0	60 0	Mignonette per dozen	3 0	6 0
" viridis dozen	12 0	24 0	Musk per dozen	0 0	0 0
Erica, various dozen	9 0	12 0	Myrtles dozen	6 0	12 0
" hyemalis dozen	12 0	24 0	Palms, in var. each	2 6	21 0
" gracilis dozen	9 0	12 0	Pelargoniums, scarlet, doz.	3 0	6 0
Eucalyptus, in var. dozen	6 0	18 0	Pelargoniums per dozen	0 0	0 0
Evergreens, in var. dozen	6 0	24 0	Primula sissensis per doz.	4 0	6 0
Ferns, in variety dozen	4 0	18 0	Solanums per doz.	9 0	12 0

OUT FLOWERS.

	s. d.	s. d.		s. d.	s. d.
Abutilons 12 bunches	2 0	to 4 0	Lily of the Valley, 12 sprays	0 0	to 0 0
Arum Lilies 12 blooms	4 0	8 0	Marguerites 12 bunches	2 0	8 0
Asters 12 bunches	0 0	0 0	Mignonette 12 bunches	1 0	3 0
Azalea 12 sprays	1 0	1 6	Myosotis 12 bunches	0 0	0 0
Bouvardias per bunch	0 8	1 0	Narciss, Paper-white, bunch	0 4	0 8
Camellias 12 blooms	2 0	4 0	Pelargoniums, per 12 trusses	0 9	1 0
Carnations 12 blooms	1 0	3 0	" scarlet, 12 trusses	0 4	0 6
" 12 bunches	4 0	9 0	Roses 12 bunches	4 0	9 0
Chrysanthemums 12 bches.	2 0	6 0	" (indoor), per dozen	0 6	2 0
" 12 blooms	1 4	2 0	" Tea dozen	0 9	1 0
Cornflower 12 bunches	0 0	0 0	" red dozen	0 0	0 0
Dahlias 12 bunches	2 0	4 0	Parma Violets (French)	4 0	5 0
Epiphyllum doz. blooms	0 6	0 0	Primula (single) per bunch	0 8	0 9
Eucharis per dozen	3 0	6 0	" (double) per bunch	0 9	1 0
Gardenias 12 blooms	3 0	5 0	Pyrethrum 12 bunches	3 0	6 0
Gladioli 12 bunches	0 0	0 0	Stephanotis 12 sprays	4 0	6 0
Hyacinths, Roman, 12 sprays	1 6	2 0	Stocks, various 12 bunches	0 0	0 0
Lapageria, white, 12 blooms	2 0	4 0	Tropeolum 12 bunches	1 8	2 0
Lapageria, red 12 blooms	1 0	2 0	Tuberose 12 blooms	0 6	1 0
" longiflorum, 12 blms.	3 0	8 0	Violets 12 bunches	1 0	1 6
Lilac (white), French, bunch	6 0	8 0	" Czar, French, per bunch	1 3	1 9



DAIRY COWS.

THE request of a correspondent for our "formula for feeding milch cows" is a reminder that more care is required in the management of cows during the winter months than at any other season of the year, and that especial care must be taken with the dietary if we would have a sweet, wholesome, and palatable supply of milk, cream, and butter from the present time till the cows have a full supply of grass once more. Instead, therefore, of giving a brief answer, the matter is of sufficient importance to merit at least one article now for the assistance of our readers generally; for although it presents no difficulty—no complicated course of treatment, yet, as in most other things, there is a right and a wrong way, and it has been our experience to find that the wrong way is that which is most frequently followed.

Advisedly have we taken dairy cows for our subject, because the term of "milch cows" is too broad and comprehensive for our purpose. We have shown in former papers on this subject that the milch cows must for particular purposes be divided into the two distinct sections of dairy and stock herds, the first for the production of dairy produce, the last for the breeding of beasts for the butcher. On many a home farm the dairy herd presents itself to us in the guise

of a careful selection of pure breed, Jerseys, Guernseys, Kerrys, or Ayrshires; while the stock herd consists of an equally choice strain of Herefords, Shorthorns, Sussex, Devons, or one or other of the polled breeds. Whether the cows of our dairy herd are pure or cross-bred animals, all must have equal care shown to them now.

The articles of diet which may be used for them in winter are the best meadow hay, bran, Carrots, Mangold, Cabbages, Oats, and silage. They must not have any Turnips or cake of any kind, whether pure linseed or the compound round cakes. Hay forms the chief article of diet, and that is given them either in cribs in the yard or in racks in the open lodges. Bran is used at milking time, and for weakly delicate cows there is an addition of crushed Oats to strengthen and keep them in condition. Of roots Carrots are used principally during the last three months of the year; this autumn grass has grown freely so late that Carrots were not used at all in October. Mangolds come into use with the new year, and are given sliced or minced regularly with the bran at milking time. So bountiful is our supply of this useful root now that it must largely exceed all possible requirements. Cabbages should be given sparingly by way of imparting wholesome variety to the winter dietary, and not so freely as to impart any unpleasant flavour to the milk. Silage, too, requires care, and so far as our experience of it goes we should only venture to use it once daily in the cribs or racks.

It is obvious that watchfulness, care, and sound judgment are highly necessary to cow management. The quantity of food should be very much in proportion to the size of the cows. A Kerry or Jersey cannot consume the same bulk of food as a shorthorn, and small cattle require more attention to quality and richness of food than others. Never suffer cows to consume large quantities of uncrushed Oats, a kibbling mill is not very expensive, and it renders corn passed through it easy to masticate and digest. See that the drinking water is both fresh and abundant; to insure this let there be pumping or other means for a fresh supply daily. We once had a home farm with the yards of the homestead on one side of a valley abounding in springs of water, and we continued to convey fresh water through pipes to an open cistern in each yard, the water passing onwards through each cistern to the next, so that it was impossible for the cows to have stagnant water.

The cows' house should be lofty and commodious, the stalls and pens so large that the cows have ample space to lie down when the weather is so severe that they have to be kept in. The yard should open, but so enclosed as to exclude cold cutting wind as much as possible. This is best done by having the cow house on one side, and deep open lodges on the other sides. We strongly object to keeping cows in the cow house throughout winter. They should have daily exercise in the yard, and be accustomed to rest in the open lodges by day, and also by night when the weather is not wet or stormy. Divisions are useful, for we never will allow delicate cows to be turned into a yard with stronger animals to be bullied and knocked about. As a standing rule all Jerseys are shut in at night in closed sheds or in the cow house. We like to have small stacks of litter made in the open yards, both to insure a full and regular supply of fresh litter daily and to give the cows snug resting places on sunny days. We never allow stable dung or any foul litter to be thrown into the cow yard, for cows will often eat it, and an unpleasant flavour is imparted to the milk.

WORK ON THE HOME FARM.

Hedges have sadly fallen off in condition since the agricultural depression set in, on many a farm the annual trimming of hedges and scouring of ditches being altogether neglected. We regard this as mistaken economy, for eventually hedges outgrow due bounds, and then the labour of cutting is a heavy matter in comparison with the light work of an annual clipping. We have added a few fields to the home farm this Michaelmas, and we not only found overgrown hedges but a rank growth of perennial weeds inside them. All this had to be cut down at once

around fields ploughed for Wheat, so that the rubbish might be burnt before the drilling was done. Drains both with pipes and bushes are in hand, our object being to relieve the soil of superfluous water at once. Pipes are indispensable where land is to be laid down to permanent pasture, but we use bush drains extensively for corn land as a matter of economy. Avoid very long drains; short branches to a large main drain, or, better still, to an open ditch, are altogether preferable. A "blowing" drain, which is really a drain with a stoppage, is frequently a serious source of mischief in summer. We had quite an acre of winter Oats spoiled by a faulty drain this year, and it was all the more vexatious to hear a stupid bailiff declare he knew it was a "wet" place.

On the whole, the condition of our farms and farming stock is satisfactory. We have been able to clean foul land well this autumn; our store of fodder and roots is so abundant that we have several stacks of both fine meadow and Clover hay to spare. Pig yards are well filled at all the farms, and we find a brisk and profitable sale for them as they fatten. We have added some two hundred ewes to our breeding flock, and we have a fine lot of old sheep in folds now, and, judging from their condition, we ought to realise from £700 to £800 from this source alone during the next three months, to say nothing of the good they are doing to the land. The winter corn has gone in well; we are fast ploughing the other land for spring corn, and we might even venture to express hopes of an improvement in future if only prices for corn ruled a little higher. It is well not to overlook the fact that both straw and hay still prove profitable, and hay can certainly be produced without an extravagant outlay for labour.

SMALL HOLDINGS.

YOUR correspondent "Inquirer" asks for some reliable information regarding small holdings, or the three acres and cow, and I may be able to give some hints on the subject. Yet no scheme in detail has yet been propounded. The mention of three acres and a cow is more a by-pharse than otherwise. "Inquirer" would appear to be anticipating too much in entertaining fear that by such undertaking considerable inconvenience would be encountered, although it is more than probable that many cases of disappointment through various causes would result; but that is so with every undertaking. If such a scheme should sooner or later become general, it should not be supposed that the conditions would be so favourable as to cause anything like a scramble by those whose surrounding circumstances were not suitable. The idea of procuring employment on special conditions, as set forth by "Inquirer"—namely, of finding a master willing to employ a man four days per week, leaving him at liberty the other two, may, I feel sure, be abandoned. Few employ more men than are strictly needed every day, and a man who works his full hours has no great inclination to further increase his time of labour. Many, doubtless, through having a large family might be tempted to do so; but that, though apparently thrifty, is in the end questionable economy from a physical point of view, while on the other hand, those who may have sons growing up are in good position in many instances to reap every benefit from such scheme; also others who in country villages may be following small trades, which barely yield a livelihood might by good management be benefited. Milk produce would not only be increased, but made much more conveniently obtainable and no doubt cheaper. This in turn would prove a benefit to cottagers and the working class generally, more especially in the case of skimmed milk for large families. This may read a little tame and homely, but if the condition of the poorer classes is to be improved it must be by homely measures. It should also be remembered that a great boon to the labourer was removed when turnpike or highway grazing was abolished nearly thirty years ago, which ought surely to have suggested some recompense through legislation, for if universal benefits are to be provided it must almost of necessity be done by legislation.

It has always been and no doubt will continue that owners of property, backed naturally by the larger farmers, are loth to subdivide their land. If, however, as appears possible, such a departure would be beneficial to the community, by all means let it be done on fair and equitable terms to all, and my opinion is the owner might in the long run be a gainer. The matter of providing separate buildings for very small holdings would be the greatest drawback, but there is no reason why in many villages and small towns when the bulk of property is owned by one or two, the buildings should not be erected in blocks convenient to the village or as the case may be, which would well suit a plan I have now more than thirty years known to work satisfactorily in so far as summer grazing is concerned—viz., to procure one very large fertile pasture, or by throwing fields together as requirements suggest to graze a given number of cows in milk, allowing, as per agreement, from one to three cows to each small holder at fixed rental; the land rented in proportion to his stock elsewhere, and often less convenient, produces hay, &c. The

acreage required would of course depend greatly on the quality and nature of the land. Good meadow land would, under such a system, provide aftermath and hay sufficient to winter three cows.

Leaving the allotment or labourer class, it is beyond my power to suggest what might be required to provide regular and profitable employment in order to maintain a family. Small farmers as a rule either disappear after a trial or make every effort to become large farmers, and that I think at once steps outside the object our legislators have in view. At any rate, no one should attempt to farm many acres who does not already through experience know what is needed to stock and furnish such a farm. As to the price of a good cow, a visit to any fair will most practically inform beginners, which at present average from £14 to £18 per head.

Implements required on something like the three acres and cow principle would not prove a very expensive item, as the occasional work of carting on manure would be most economically done by hire. Some other readers will doubtless deal with the financial aspect.—E. BURTON.

FLAX GROWERS' ASSOCIATION.

THE following appeal to British landowners and capitalists has been sent to us for publication:—

"The numerous inquiries received by this Association from all parts of the country during the last two months prove conclusively that the farmers of the United Kingdom are desirous of giving the Flax industry a fair trial during the coming season, and it is proposed raising a fund for the purchase of suitable Flax-scutching machinery, which will then be hired out to such persons at a price that will ensure a fair profit to the owners, and at the same time will not press too heavily upon the new industry.

"It is intended that the assistance hereby rendered shall be confined at first to those districts where the farmers growing Flax are willing to work up the same in partnership with their labourers on the co-operative system, receiving a fair market value for their straw out of first profits realised, say £3 per ton.

"In all such cases it is believed that the local gentry and tradesmen will assist in raising a fund sufficient for paying the expense of working until the Flax fibre is ready for market (£1000 will be ample for this at starting); this Association will then supply the machinery on hire, charging 10 per cent. yearly on the cost of the same (5 per cent. interest, and 5 per cent. for depreciation), until such time as the Co-operative Company is able to purchase it at a fair valuation.

"It is believed that the extension of the Flax industry on the lines herein laid down will prove of national benefit and importance, affecting landlords, farmers, and labourers alike, and bringing about a closer union between the three classes.

"Messrs. Ransom, Bouverie & Co., 1, Pall Mall East, have consented to act as bankers for this Association, and the fund, when subscribed, will be administered by a Committee chosen by the subscribers, to whom every assistance will be rendered by the Flax Growers' Association.

"For further particulars apply to—GRAHAM PARRY, *Secretary Flax Growers' Association, 57, Charing Cross, London, S.W.*"

OUR LETTER BOX.

Food for Milch Cows (H. E. G.).—You will find an article in the present issue that will probably give the required information.

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude, 111 feet.

DATE.	9 A.M.					IN THE DAY.					Rain
	Barometer at 32° and Sea Level.	Hygrometer.		Direction of Wind.	Temp. of Soil at 1 foot.	Shade Temperature.		Radiation Temperature.			
		Dry.	Wet.			Max.	Min.	In sun.	On grass.		
1886. October and November.	Inches.	deg.	deg.		deg.	deg.	deg.	deg.	deg.	In.	
Sundday 31	30.093	56.4	55.7	E.	51.3	61.2	49.0	68.6	40.6	0.162	
Monday 1	30.036	55.0	53.6	S.	52.6	58.8	52.7	78.4	50.6	0.029	
Tuesday 2	30.141	51.9	49.4	S.E.	51.8	57.6	48.2	77.3	40.3	0.010	
Wednesday 3	30.139	45.2	43.6	S.	51.0	54.2	38.1	60.8	29.1	0.256	
Thursday 4	29.901	43.1	41.5	W.	50.2	54.3	39.6	77.2	29.3	—	
Friday 5	29.545	48.1	47.0	S.E.	49.0	51.7	42.8	61.4	33.9	0.544	
Saturday 6	29.948	43.1	42.0	S.	48.2	45.9	38.7	48.7	31.7	0.126	
	29.829	49.0	47.5		50.6	54.8	44.2	67.5	36.5	1.127	

REMARKS.

31st.—Fog early; fine morning; cloudy afternoon; rain in evening and night.
1st.—Dull showery morning; fine bright afternoon; rain at night.
2nd.—Fair as a whole, with alternate breaks of sunshine and sprinkles of rain; fine clear night.
3rd.—Fine and bright early; fine morning; wet afternoon and night.
4th.—Fine, bright, and cold; a little cloudy, with spots of rain in late afternoon.
5th.—Dull all day.
6th.—Fine early; wet day; clear cold evening and night.
A very unsettled and rather wild and wet week, marked by great range, and sudden changes of pressure temperature. Temperature nearly 2° below that of the preceding week, but about the same amount above the average.—G. J. SYMONS.

COMING EVENTS

18	TH	Hitchin, Chiswick, and Hull Shows.
19	F	Sheffield Show.
20	S	Kentish Show.
21	SUN	22ND SUNDAY AFTER TRINITY.
22	M	Seeds Show.
23	TU	Liverpool and Manchester Shows.
24	W	Birmingham Show.

POTATO EXPERIMENTS AT READING.

AS will be remembered by many of our readers, Messrs. Sutton & Sons of Reading conducted with great care last year some highly interesting experiments in raising Potatoes by intercrossing what was considered to be *Solanum Maglia* with a new variety raised by Mr. R. Fenn, and now named Sir Charles Douglas. The history of the experiments in question is briefly this. In 1883 Lord Cathcart received from Mr. Baker of Kew specimens of the wild form of *Solanum tuberosum* under the name of *S. Maglia*. The produce of these tubers was sent by his lordship in March, 1884, to Messrs. Sutton & Sons, who raised plants from them, and the flowers being fertilised developed three berries filled with seeds. These were sown, and twenty-eight plants raised, the progeny of which was inspected, and the varieties described in this Journal on October 29th, 1885. It was also there stated that Mr. Arthur W. Sutton had succeeded in crossing *S. Maglia* with three varieties of admitted excellence—Reading Russet, Walker's Regent, and Paterson's Victoria. The progeny resulting from these crosses is now on view, together with the increase from the tubers of the preceding year, in one of the offices in Messrs. Sutton's trial grounds. The collection forms what may be fairly described as a remarkable museum of Potatoes, the like of which is not to be seen elsewhere.

The species and varieties on view are quite unlike the examples that are arranged at Potato shows, for apart from the pea-like tubers of some of the wildings the heaps of the seedlings take us back in imagination to a period anterior to the outbreak of the destructive murrain upwards of forty years ago. At that time the Potatoes generally grown in bulk for ordinary consumptive purposes were a rougher and hardier-looking race than now obtains. No systematic attempts at raising new varieties were then made, and those most extensively cultivated very closely resembled the kind sent by Lord Cathcart to Reading, and as there increased in size by cultivation. The similarity was indeed so striking that we had no hesitation in suggesting that the species grown at Reading under the name of *S. Maglia* was the progenitor of the present race of English Potatoes. We had before us, at the time of writing, figures of *S. tuberosum*, as prepared at Kew, and published in the Linnean Society's Journal, and also of Mr. Baker's figure of *S. Maglia*. The latter far more closely resembles the growth of the strong-growing English varieties than the former does; and, as before observed, the so-called *Maglia* tubers as grown at Reading, together with some of the seedlings, bear a striking likeness to the old rough reds of half a century ago. There appears, however, to be a doubt as to whether the tubers sent by Lord Cathcart to Reading were, after all, examples of the true *S. Maglia*. That they were obtained by his lordship under that name from Kew we have had sufficiently conclusive evidence, and we are fully satisfied that the Reading experiments have been conducted with such a zealous regard to accuracy that

no mistake has occurred there; yet the *S. Maglia* that we referred to last year as grown at Reading, and obtained from Kew, differs from what is admitted to be *S. Maglia* by the Kew authorities. This difference has been established by striking cuttings from the true *Maglia* and what we will call the "New *Maglia*," and carefully noting the results. What, then, is this "new" *Maglia*? What can it be but *S. tuberosum*?

But it has been said, and doubtless with truth, that Darwin's Potato or *Solanum Maglia* is a coast plant, producing medium to large-sized tubers of good quality in moist ground, while *S. tuberosum* has its home on the hills, producing smaller tubers, described by most old authors and travellers as bitter. But now comes the question, Would the small tubers from the hills become larger and better through being grown in more generous soil near the coast? Those sent to Reading increased in size at the least tenfold under cultivation; and this fact tends to support Mr. Shirley Hibberd's theory, that the coast and hill plants are geographical forms of the same species—*S. tuberosum*. Heriot, who was in the expedition with Raleigh when the tubers were collected that he brought to Ireland in or about 1610, has described them as growing in "damp places," and as being "good for food either boiled or roasted." Assuming these to have been of *S. tuberosum*, described as "bitter" on the hills, its quality must have improved in more fertile soil. The improvement in the two cardinal properties, size and quality, is thus accounted for, and Mr. Baker may still be right in his original statement as to all the varieties in cultivation descending from *tuberosum*.

Since reports to the contrary have been widely published, founded as they were on a basis that appeared perfectly sound, it becomes necessary to adduce the further evidence referred to as the outcome of the exhaustive experiments at Reading. This does not in the least detract from the importance of the work in question. It is going back to nature in search of the lost vigour of the Potato as the result of loose cultivation. So loose and careless was this previous to the disease period that there is little wonder at the breakdown of the plant under adverse circumstances. Plants in nature are sounder in constitution than those are under a more or less artificial method of cultivation. It is by going back to nature that we find the strongest parentage. And if the impress of parentage is evidence of innate strength, as it is, then Messrs. Suttons are on firm ground, for assuredly the character of what may be termed the wild parent is far more pronounced in the seedlings produced than is that of the cultivated parent that was chosen in the experiments. The object sought is strength and hardness of plants, combined with excellence of tubers. There is not wanting evidence of this being attainable. The tubers of the "wild" parent under cultivation at Reading are good, even very good, but those of one of the seedlings when cooked and served proved still better, indeed excellent alike in texture and flavour. The results already obtained are full of interest and of promise. The great majority of the varieties have dark skins, more or less resembling the seed parent, though several are lighter, and a few nearly white, one being almost an exact reproduction of the pollen parent. They incline to be oval or pebble shaped, though some are nearly round, and all are heavy for their size; this, with a rough or crackled skin, being by no means a bad indication of good quality. It should be said that the pollen parent employed in crossing is a long kidney-shaped white tuber, rather rough in appearance, but chosen because of its superior quality. Mr. Fenn regards it as the best in that respect he has raised; and as it was preferred by Sir Charles Douglas to all others, it is named in commemoration of that gentleman.

The relative produce in 1885 from each grain of seed, and of this produce planted and lifted this year, is represented in the following table.

It will be noticed that the increase in the crop of the

present year is not in proportion to the weight of the tubers planted; further trials are therefore requisite for determining the merits of the varieties.

MESSRS. SUTTON'S POTATO EXPERIMENTS, 1884-5-6.
RESULTS OF CROSSES IN 1884—PARENTAGE WILD POTATO OF KEW
× FENN'S SIR CHARLES DOUGLAS.

No.	Produce, 1885.	Produce, 1886.
1	19 grains	—
2	6 "	—
3	11 "	—
4	11 "	14 ozs.
5	3½ ozs.	54 lbs.
6	½ "	10 lbs. 5 ozs.
7	4 "	24 " 8 "
8	11 "	56 " 2 "
9	10½ "	22 " 6 "
10	7½ "	2 " 4 "
11	5 "	31 " 14 "
12	13½ "	56 " 15 "
13	2 lbs. 1 oz.	43 " 9 "
14	1 " 7½ "	53 " 2 "
16	1 " 10½ "	47 " 4 "
17	1 " 5½ "	122 " 6 "
18	1¼ ozs.	11 " 2 "
19	2 lbs. 12½ ozs.	83 " 6 "
20	10 ozs.	43 " 10 "
21	4½ "	39 " 14 "
22	1 lb. 9½ ozs.	10 " 12 "
23	11 ozs.	47 " 13 "
24	¾ "	6 " 3 "
26	6¾ "	20 " 7 "
27	1 lb. 2½ ozs.	6 " 0 "
28	3½ ozs.	23 " 14 "

SECOND SERIES OF CROSSES MADE IN 1885.

PRODUCE OF 1886.

PARENTAGE, WILD POTATO OF KEW × READING RUSSET.

No.	lbs. ozs.	No.	lbs. ozs.
1	— 2	12	— ½
2	5 15	13	— ¼
3	3 15¾	15	— 11¼
4	4 15	16	— 9¼
5	4 6	17	One small Tuber.
6	— 13½	18	— ½
7	2 12½	19	— 1 3
8	1 2½	20	— 6½
9	4 14	21	— 4¼
10	— 7¼	22	— 4½
11	1 11¼	23	— 1¼

WILD POTATO OF KEW × VICTORIA.

No.	lbs. ozs.	No.	lbs. ozs.
25	4 3	30	4 14½
26	4 8	31	— 8¼
27	5 8¼	32	— 1½
29	1 13		

The crop produced by crossing the wild form with Walker's Regent weighed 9¼ ozs.

In addition to the crosses, the result of a seed of Magnum Bonum sown on March 12th of the present year is worthy of record. The number of tubers is thirty-two, weight 6 lbs. 9½ ozs., the two largest weighing 14¾ ozs. and 15¾ ozs. respectively. It may be further stated that a grain of seed of the Red-skin Snowball sown March 12th, 1886, the plant put out on June 9th, and the crop lifted October 25th, gave 5 lbs. 14 ozs. of good-sized white tubers.

In concluding, for the present, our remarks we can only repeat our observations of last year—namely, that Mr. Arthur W. Sutton is to be congratulated on what he has so far accomplished, and we shall look forward with interest to the result of the experiments that will be conducted next year in the important work in which he is engaged.

THE NON-VENTILATING SYSTEM.

MR. IGGULDEN (page 404) has tried to tread on the principal tail of that "wonderful coat" he credits me with "trailing," and it might seem like presumption on my part to say he has utterly failed in the attempt, but I will show that such is the case from his own admissions. It was clearly evident to me from his first letter that the cause of his Cucumber failure was due to the method of culture adopted, and not to the "express system," and the admissions he makes in his second letter prove that I was perfectly correct in the opinions I formed on his former article.

The soil at Marston, of which we have heard so much of late, must be of a very peculiar nature, the worst, from our friend's account, that can be found in this or any other country, for it appears to be the cause of innumerable failures. I have been led to believe, however, that the soil

is of a wonderfully fertile nature, and I suspect other persons have to work soil equally heavy. In the failure before us, neither the soil or the express system was at fault. Mr. Iggulden admits it was due to too much water, and if this had taken place with any other kind of soil failure would have been equally certain. Whether plants or Cucumbers are grown on the non-ventilating system, or on the older method of admitting air, they cannot flourish long in soil that has become saturated. The method of watering was at fault, which shows that Mr. Iggulden has no grounds for his condemnation of a system that he failed to carry properly into execution. I shall not attempt to enumerate the growers who have carried out the system successfully in private gardens. I know several who have done so, some of whom now practise it for a living. If all the private growers raised their voices or used their pens in condemnation of the system very little importance would be attached to their verdict if they had not better and more justifiable grounds for doing so than those brought forward by Mr. Iggulden. Those who have written against the method have failed through causes over which they had control—viz., too much water; or, on the other hand, insufficient, as can be proved by reference to the back numbers of this Journal.

Mr. Iggulden admits that quickly grown seedless Cucumbers are the best for eating, and he further admits that they can be produced quicker on the non-ventilating system than by the admission of air. Between these two admissions he says they are no better grown by the former than the latter plan. If he had not made the two admissions referred to I should have dealt with this one, but as he so freely admits the point there is no need for me to enter further into this matter.

The cause of failure is first attributable to too much water, and then to the house in which the experiment was tried. The sort of house Mr. Iggulden employed I know nothing about, for I have not the remotest idea what it is like; but I can say that Cucumbers can be grown in any structure by this method. The houses to which "Constant Reader" refers are known to me, and they are small three-quarter span-roofed houses such as are generally seen in private gardens for the purpose of Melon and Cucumber growing. A friend who grew three or four large span-roofed houses full for several years—the houses running north and south—in a private garden, took another private garden, out of which he had to make a living, and there he successfully grew Cucumbers without using the ventilators in two small half-span houses facing south. These two examples are only given to prove that Cucumbers can be successfully grown on the non-ventilating principle in small houses. The houses at Prescott are not generally on the principle Mr. Iggulden describes—viz., ridge and furrow with pillars instead of walls between them; one or two blocks are on this principle in Mr. Whittaker's establishment. The new houses put up by that grower are not on this principle, they are span-roofed structures, one being over 300 feet in length, 12 or 13 feet wide, about 8 feet high, and runs, if my memory serves me right, nearly east and west. This is only one house of several that stands independently of others, but I believe the majority of the others run north and south. This is only one grower amongst scores of others in the same vicinity, but all are on a more limited scale, yet several have a dozen or more long houses, others five or six, and some only one. I do not claim a monopoly for the Prescott growers, but Mr. Iggulden cannot name any other locality in which so many Cucumbers are grown for the market, and more especially by men who are professors of other trades, such as joiners, watch-makers, &c.

I should not be surprised to hear from any quarter that Cucumbers fail on the non-ventilating system if the house in which they are grown was in that deplorable condition for moisture which Mr. Iggulden depicts. On a bright sunny day, if the air in the house is allowed to become drier than the external atmosphere, how long would Cucumbers, grown on the system under discussion, continue to do satisfactorily? By such treatment they would not long remain clean and healthy, even with air admitted. The walls, floor, and staging, that are capable of absorbing moisture would do so, but there is a limit to this, and directly they commenced absorbing heat what would become of the moisture? Would it not be evaporated from these substances and held in suspension in the atmosphere of the house as it became warmed? If Mr. Iggulden could cool these bodies to which he has referred artificially they would condense the moisture of the atmosphere, but the reverse as they become heated. How could this moisture escape with the ventilators closed to such an extent as to become drier than the external atmosphere? This would be utterly impossible, and my contention that a greater volume of moisture can be retained within the house by the non-ventilating system cannot be disputed. When air is admitted on very dry days moisture is drawn from the house until it becomes as dry as the external atmosphere if fresh supplies are not constantly afforded. This is done on the airing principle very frequently, but to keep the house thoroughly moist on the other system it is required less often. By opening the ventilators a ready escape is made for the moisture from the atmosphere of the house. When they are closed escape is prevented. If the temperature of the house exceeds that externally the air of the house becomes cooled as it comes in contact with the glass, and the moisture it contains is condensed. What takes place during bright weather when a stove, vinery, or any structure is closed in the afternoon of a sunny day? Damping available spaces takes place, and when this is done the glass is at once covered with dew drops. This would not be the case if the ventilators were left open. This bears upon the point at issue, and if the true cause is not pointed out Mr. Iggulden will have the chance of doing so. Such feeble arguments in support of his condemnations against a system that has produced hundreds of tons of Cucumbers scarcely bear the test of examination.

I have never in any of my writings laid claim to the non-ventilating

system of growing plants and Cucumbers being "new." I saw it written about in one of the gardening periodicals—perhaps the Journal, I am not sure—fourteen or fifteen years or more ago. It is not new, but newer than the method that has been so generally practised for so many years. Whether it is new or old does not matter, but the fact is certain that the plan is not yet generally adopted. I pointed out, and need not do so again, that many advantages arise from a close system of treatment, but I am certain that the immunity from labour that the system offers will ere long commend itself to the majority of cultivators.

I said the closer the plants were grown the more light it was essential to admit to them, or what amounted to the same thing, and to these remarks I adhere. I scarcely know the thickness of the material used by Mr. Iggulden for shading, for I have seen several samples varying considerably in texture termed "scrim canvas." I use for plants that require shade, tiffany Nos. 3 and 4, because I have not yet found the exact thing I want. This is alluded to because I consider these are too dense, and prevent a large amount of light from penetrating the house that would prove beneficial to many plants. Such shading is not too heavy for Ferns and many other plants that thrive only under dense shade, but all plants of that description I exclude from these remarks. Year by year I have seen for many plants that a very much lighter shade is needed than generally employed in gardens. The best thing I have seen in the way of shading is the wood strips secured together and exhibited by Messrs. Richardson & Co. of Darlington, but this at present is too costly for general adoption. It is so arranged that practically only half the roof is shaded, the shadow from each piece of wood proving sufficient for the space between each piece. The principle is, however, by no means new, for the Belgian horticulturists appear to adopt this method of shading generally. The Belgians have a more sunny climate than we, and they shade about half as heavily.

Crotons in this question have been brought to the front. Most of the kinds named by your correspondent will colour fairly well under light shade, and are, I do not dispute, satisfactory. But this term needs some explanation. What would be highly satisfactory to one would be the very reverse with another individual. What I mean I will illustrate by the two collections of Crotons at the Royal Horticultural Society's Show held at Liverpool this year. Those staged by, I think, Mr. J. Cypher of Cheltenham, would have been considered highly satisfactory had not the collection of Messrs. R. P. Ker & Sons been staged by their side. The beautiful foliage of Crotons cannot be brilliantly coloured under shade, however light. They may be termed "satisfactory," but will bear no comparison by the side of those grown fully exposed to the sun.

Why is air given to the plant houses under my charge during the summer and autumn? is the question asked by Mr. Iggulden. Because many of the houses contain mixed collections of plants, and it becomes necessary to admit air to equalise the temperature so as to suit as nearly as possible the whole of the inmates of the structure. It is done so that the various plants grown together can have the best possible treatment under the difficult circumstances under which they have to be arranged. Air is admitted because some plants require more shade than others, and while the requirements of these are being attended to, the others are drawn up soft and weakly. This could be remedied by a greater abundance of light, which would ensure dwarf solid growth. This cannot be given, therefore air is admitted as a substitute. Again, air is admitted to Ferns after the growth has been made to harden their fronds, so that they will last longer in a cut state. To other plants it is admitted to arrest growth—for instance, Crotons, as autumn approaches, and they are sufficiently developed and highly coloured; further growth, by lowering the temperature, can be prevented. This prevents an autumn growth that there is no possible chance of colouring. Air, I say, is admitted to arrest growth, the growth of Poinsettias, Plumbagos, Euphorbias, and such plants, and it certainly prevents a soft growth in autumn and tall plants to soft to flower or produce bracts. Air after the growth is made assists in hardening and ripening, so that profusely flowered specimens will be the result. Air is admitted to harden and prepare plants that are to be used for room-decoration, so that they will withstand these hardships and last in good condition as long as possible. Air is often freely admitted to bring plants to a standstill, so that a season of repose can be forced upon them before they are required to unfold their flowers, and it may be months before their natural flowering time. Train plants to flower out of their season, and the period of rest so essential to plant life is in a measure artificial, and in the majority of instances cannot be accomplished in a closed house during August and September, or earlier. If the same plant were started into growth at its natural season it would rest freely and naturally in the lower temperature that would follow in the same structure (without air) during the winter. The other plant may have flowered and have commenced again vigorous growth. These are a few of the reasons why air is admitted through the ventilators to some of the plant houses over which I have charge.

What I mean by commenced ripening is, that the fruit had reached that stage that those who grow for market would have cut and sold it, while those who wanted a dish as early as possible would have cut the fruit and sent it to table. The fruit was coloured and did not improve in this respect after. The fruit certainly became sweeter, as it naturally will by hanging. This would have been the case had no air been admitted. This is what I mean, and the fact remains for Mr. Iggulden and the authorities he quotes to explain them away if they desire to do so. The "chink" of air admitted through the ventilators is not necessary to colour and flavour in Grapes.

If cold air is admitted through the ventilators at night during the months of February, March, and April, more fire heat is needed to

maintain the requisite temperature. That means more fuel, does it not? I am no advocate for high night temperatures, at the same time I do not believe in starving the Vines. I believe in following Nature as nearly as possible as regards night temperatures, being guided entirely by external conditions. Vines required to ripen their fruit during April or early May should never have their roots in a cold outside border. It is in these borders that the top growth is forced out before the roots can be brought into activity, and not in well-drained shallow inside borders.

Lastly, I did not convey the idea that the condition of my Peach trees was due to the non-ventilating system. I pointed out the advantage due to the prevention of cold air reaching them, thinking that the hint which caused the touch of mildew might be useful to others. I fully endorse every word said about the Peach trees at Knowsley. They are certainly in grand condition, and no trees in the country produce finer fruit than I have had the pleasure of seeing on the trees in question.—WM. BARDNEY.

TREES AND SHRUBS FOR LAWNS.

(Continued from page 390.)

THE ARBOR VITÆ.—Lobb's Arbor Vitæ (*Thuia Lobbi*).—Free or fast growing, but though erect has a spreading base from its long graceful branches, the branchlets lying flat, and of a deep shining green colour. It is very ornamental. There is a variety—viz., *erecta* with closer and more erect growth, and of a brighter green colour. *Gracilis* is a very fine form.

The American Arbor Vitæ (*Thuia occidentalis*) is not named for a lawn plant as regards the species, but to note the varieties *compacta*, which is of dense growth and not large; *Ellwangeriana*, which is free and good; *lutea*, for its golden colour and compact growth; and *Verucanana*, with slender branches and spiral growth of a fine golden tint.

The Chinese Arbor Vitæ (*Thuia orientalis*).—Of the dwarfed Conifers this is one of the finest. Its varieties are numerous. The best are the Golden Arbor Vitæ (*T. aurea*), of dense compact globular form and dwarf, forming a round bush of a few feet high, which in the young shoots is bright gold; elegantissima, of compact upright habit and bright golden in its young growths. There are many other varieties. Medium space will meet their requirements in the largest species or varieties.

The Broad-leaved Arbor Vitæ (*Thunopsis dolabrata*) forms a spreading specimen in the form of a half ball or very flat cone, and is very lovely, having a Lycopod-like appearance, the foliage being bright green above and silvery beneath. There is a variegated form which is more vigorous than the species. Requires space latterly. *Thunopsis Standishi* is not so dense in growth as the preceding, but is of more erect habit, indeed forms a pyramid and promises to be very beautiful.

THE JUNIPER.—The Chinese Juniper (*Juniperus chinensis*) is very ornamental, and forms a columnar tree of great beauty, having a fine silvery appearance. It is hardy, but does not thrive well in an exposed situation. There is a variety (*aurea*) which is very beautiful and contrasts well with the species. The Western Tree Juniper (*Juniperus occidentalis*) columnar, erect, foliage silvery, forms a handsome tree. It is not by any means common. It is sometimes called the Fragrant Juniper from its branches when bruised giving off a strong scent; medium. The Frankincense Juniper (*Juniperus thurifera*) a conical pillar, tapering from the ground upward to a sharp point, symmetrical, and delicate-looking branches. Is one of the finest of lawn trees of its class.

The Red Cedar (*Juniperus virginiana*) forms a dense columnar tree, and is ornamental. Its appearance is, however, dull as compared with the variety *glauca* or *argentea*, and to contrast with this *Schottii*, of a peculiarly light green, is useful. The Green Drooping Virginian Cedar also has green shoots, and is very ornamental, especially near water. This (*pendula viridis*) is not over-hardy, nor indeed are any of the Junipers in a deep rich moist soil; medium.

Of the smaller forms of Juniper mention need only be made of the Irish (*Juniperus communis hibernica*), which in its way is very useful, and is of a silvery grey hue, contrasting well with darker foliage. In a light rich soil it grows so soft as to get cut with frost, and seems to prefer a cool bottom; medium small.

THE JAPAN CYPRESS.—*Retinosporas* are real gems. They do not succeed in elevated and cold localities. The Thread-branched Japan Cypress (*Retinospora filifera*) is pyramidal and singularly graceful, the drooping spray being very beautiful; medium or small.

Retinospora obtusa is very fine and grows freely where there is shelter. Of this there are several varieties, and all much smaller than the type. *Retinospora pisifera* is a very elegant and lovely tree of pyramidal habit, foliage reddish green above and glaucous underneath, feathery and beautiful in effect. It is one of the hardiest. *Retinospora plumosa* is the very finest of the *Retinosporas*, it being singularly beautiful; its fine plume-like and slender growths are quite charming. Its reddish green tint on the upper surface and silvery beneath is particularly pleasing.

All those named from *Cupressus* inclusive to *Retinospora* are not suited for what may be called bleak localities. They require a good soil, and are seen to much greater advantage when favoured with a cool than on a hot dry gravelly bottom, and like moisture if it is not stagnant. On a light soil they never have that density and peculiarly rich foliage as on a cool. The Arbor Vitæ and *Retinosporas* perhaps succeed better on a light soil. I have omitted the Japan Cedar (*Cryptomeria japonica*), as it is not hardy. *Cryptomeria elegans* is perhaps the hardier, and is very pleasing from its rich bronzy hue in winter, but it dies off suddenly for no apparent reason. For similar reason the Evergreen Red Wood Tree

(*Sequoia sempervirens*) is omitted. It is no use except in very sheltered situations, and then it does fairly well, but at best is very uncertain.

THE YEW.—The Common Yew (*Taxus baccata*) is well known, and of specimen size, 30 feet or more high and spreading. It is unique in its sombre grandeur. I think nothing approaches the Yew in stately impressiveness.

The Upright or Fulham Yew (*Taxus baccata erecta*).—Smaller foliage, forming a very massive and effective pyramid. The Flattened Yew (*T. baccata adpressa*).—The foliage closely set on the numerous branches, stricta being its best form. The beautiful variegated (*T. baccata elegantissima*) is a dense spreading bush, and is very effective. The variegated Upright Yew (*Taxus baccata erecta variegata*) is a pleasing variety, and contrasting in form well with the preceding one. In contrast with these we have the Sea Green Yew (*glauca*), dark green above and glaucous beneath, quick growing and spreading; and the singular horizontal-branched Yew (*horizontalis*), and the Gold-striped Yew (*T. baccata variegata*), which is so frequently worked on the top of Irish Yews, and looks so uncharming and unbeautiful. All except the pyramidal require large space laterally.

The Florence Court or Irish Yew (*Taxus baccata fastigiata*).—Distinct, stiff, bundle-like, with sombre dark foliage. It is, perhaps, more used for the margins of terraces, walk angles, and on lawns than any other Conifer, and for cutting up flat surfaces and lines marked by formality is very serviceable. It is thought to give depth and colour, which it may to statuary, and it would be well if they were kept nearer buildings than we usually see them. I cannot but think it is much too frequently seen, and as a specimen I would use it very sparingly. Its variegated forms are not of much account. *Taxus Washingtoni* or Golden American Yew has the whole of the foliage more or less tinted with gold. In specimens it is beautiful, being a low spreading bush.

Yews are very accommodating. They will grow on light soil, but are not so fine or free as on good soils, liking loams, and abhorring stiff clays. A free moist soil, freed of lodging water, is where they revel most, and they succeed well in shade only not too dried and impoverished by the roots and heads of other trees. The *Prumnopitys elegans* partakes of the character of the Yews, and is a very elegant dwarf tree. It is really elegant in comparison with Yews.

THE LARCH.—The Larch in a plantation is not very beautiful. Grown singly, allowed to assume its towering height of 90 to 100 feet, and spread laterally without hindrance, clothed from base to summit with its graceful arms, and seen in spring with its drooping spray of soft green leaves, amid which its young crimson cones glisten, or in autumn when assuming its amber tint, I question if any in the whole tribe of Conifers are as attractive and beautiful. It is, indeed, a lawn tree of the first order, and lights the leaden landscape with softening splendour. If there is not colour enough in the common Larch (*Larix europæa*), take the golden *L. Kämpferi*, light green in spring, and golden yellow in autumn. There is also the silver *L. europæa glauca*, as silvery as the Deodar, and there is also the European and American Weeping. Larch likes good soil deep and moist, but not from stagnant moisture, and on a knoll it will hold its own with any of its compeers for elegance and beauty.

THE DECIDUOUS CYPRESS (*Taxodium distichum*), is very beautiful in spring and autumn, but unfortunately does not succeed everywhere. Its light graceful habit gives it a peculiar fitness for association and contrast with dark foliage, but appears only suited to rich open loams where its roots can have moisture, and the climate is mild or well sheltered. On light soils it succeeds fairly well for a time, not, however, assuming that dense habit and freshness so characteristic of it in free soil where the roots have access to moisture at some little distance, being especially effective on the bank of a rivulet or lake.

THE MAIDENHAIR TREE (*Salisburiæ adiantifolia*).—A singular tree, and very distinct as a Conifer. It does best in good soil, light in preference to heavy, and being of conical habit does not require a large space, about medium will meet its requirements. It is a picturesque rather than beautiful object, and in contrast with the Larch and Deciduous Cypress is very effective, its foliage being singularly and effectively contrasting, and with a background of tall dark Pines is very pleasing. In specimens it is very effective, even when leafless. There is a variety with cut leaves—viz., *S. adiantifolia laciniata*; the leaves are variably lobed and irregularly dentated. It is equally ornamental, if not more so, with the species.

Conifers are perhaps best transplanted in early autumn so soon as the growth is complete and hardened, moist weather being chosen for the operation, and in spring when on the point of starting into growth. The chief point to insure success are plants grown so that they have light and air for their due furnishing and development, and transplanted frequently so as to insure moving with good balls. Thus attended to periodically from the early stages, large plants are safely moved, and an effect produced at once. For general purposes the smaller plants are much the best if they have sufficiently developed.

The after treatment consists in pruning or regulating the growths to insure a perfect specimen. This is a very simple, but none the less necessary matter. If the tree forms two leads or more they should only remain until choice can be made of the best and the other removed; or if the subject lose its leader altogether then a growth most likely to furnish one must be encouraged and given its proper position, securing it the necessary advantages by staking or a support secured to the main stem, and tying effectively but not too tightly, or the remedy will be worse than the disease. In like manner irregularities must be curbed. A gross shoot must be shortened or removed, so that a hump will not appear on one side and a hollow on the other. The gross shoot must be

shortened or removed, so as to cause scant parts to become furnished—at least made alike, so as to insure symmetry; and for like reason a straggling growth on one side must be shortened, so as to make it accord with the side corresponding. Little attentions in these respects are necessary. It is not much that is needed, yet the little must not be overlooked. Wherever there is irregularity remove it, and in spring or during growth. It is the only way to have specimens with certainty and if they come naturally all the better.

Those wanting to see what trees can do will trench the ground as deeply as the good soil allows, and not be afraid of loosening the stubborn pan beneath. To keep the roots active, surface dressings of leaf soil will be given, or of any fresh soil that is available, not of great thickness, but thin and frequently—say, annually or biennially, and in autumn or winter. Trees that are getting enfeebled may have a dressing of fresh rough loam on the surface. It will weight the roots and keep the tree from being nrooted, and by encouraging a greater profusion of fresh roots the tree will be recuperated and stand better, because having better hold of the soil.—G. ABBEY.

CHRYSANTHEMUM NOTES.

OCTOBER BLOOMING JAPANESE CHRYSANTHEMUMS.—I am sure all lovers of Chrysanthemums will feel indebted to Mr. Davis and the Committee of the National Society for the evident pains taken to make their catalogue complete, and not less for the disposition to receive suggestions tending in that direction. As new editions are certain to be called for, I would like to ask him whether he would not think it an improvement to have a separate class for those? Even with me in the open air, James Salter and its sport Lady Selborne, Alexander Dufour, Elaine, Margot, Henri Jacotot, Mons. Mousillac, and several others at present included in the general list, when crown buds were used, were blooming on a south wall in mid-October.—W. J. MURPHY, Clonmel.

MAIDEN'S BLUSH.—This variety when more generally known will be in very strong demand amongst cultivators. Although classed in catalogues as an exhibition variety, I venture to predict it will be extensively grown as a decorative plant. My reason for thinking so is that I have three dozen plants in 12, 9, and 24-inch pots; the habit of all of them is exceedingly good, their average height being a little over 3 feet from the rim of the pot with healthy bright green foliage, much after the manner of a Chrysanthemum I have heard called *Magnum Bonum*, very common here (Ipswich) as an outdoor plant. I also grew as a trial three in the open ground. They are thicker plants, but not quite so tall as those in pots bearing a quantity of blooms of a much deeper colour than those under glass. With respect to the colour of Maiden's Blush, that must be a matter of opinion. For my part I prefer them when they have been in bloom about three weeks, as at that time they are almost pure white, having the appearance of lasting for a considerable time.—F. C. B.

HIGH AND DEEP PLANTING.

ALTHOUGH I have chosen a new heading for my remarks, it will be found that it is nothing more nor less than a continuation of the subject of "Trenched v. Untrenched Soil," and as such I hope it will be met by my rather numerous opponents.

From this time onwards the work of root-pruning, lifting, and re-planting of trees of all kinds will be undertaken in different places all over the country, and many a blunder will be discovered, I am afraid, and many another error committed. In some cases faulty practices arise from a want of thought or judgment on the part of those responsible, one great mistake being to treat all soils alike. Anyone possessing a very slight knowledge of geology, and more especially that branch relating to the natural formation of this country, are aware that the surface soils as well as the underlying strata vary to a surprising extent. I may even go further, and add that they also vary considerably, not only in one parish, but, as in our case, in a limit of four acres of kitchen garden; yet, if we are to believe several correspondents of the *Journal of Horticulture*, little or no heed should be paid to the peculiarity of our soils, but all alike will be benefited by deep culture or trenching in some form or other. They go to work on the lines that what is sauce for the goose is equally good for the gander, as witness how few indeed that admit there is any risk attending trenching, no matter how had the subsoil may be. Trenching has become a time-honoured custom, and nearly every votary points with pride to his different quarters that were double-dug at a certain date. As a consequence those who venture to question the propriety of the practice are liable to be "sat upon," but whether that would "serve them right" remains to be seen. Before any one starts trenching ground they should consider the matter well, and not too readily arrive at the conclusion that a deep root-action is bound to be beneficial to whatever they intend to cultivate. Will the roots do better service on the surface or deep down into a cold subsoil, or even the partially cultivated second spit? If it can be proved that they are best well below, then by all means break off and manure as deeply as possible; but on the other hand if it is found to be the case that the most productive fruit trees, for instance, are rooting principally near the surface, what motive can any one have for trying to alter this satisfactory state of affairs?

On page 335 a very practical correspondent states he gets his best fruit from trees growing in the poorest shallowest parts of the garden. He at any rate does not appear to have believed in trenching, but prefers to feed and support the roots from the surface, and if more would follow this example there would be much less need to import the bulk of choice

Apples from America and other fruits from the Continent. On very sandy soils, or in every case where the soil is very shallow, or of much too light a nature to hold sufficient moisture to support the roots, then I admit every effort should be made to deepen the root-run, but wherever clay abounds this is naturally more retentive of moisture, whether this be derived from the atmosphere or by capillary attraction from below. It follows clayey soils are of a much colder nature, the sun-soil being especially so, and being out of the reach of the sun's power it rarely ever reaches a temperature at all approaching that attained nearer the surface, consequently is not a congenial medium for the roots to thrive in. It cannot too often be repeated that long naked roots are not what are wanted, but we must have plenty of fibres if the growth of the plant or tree is to be of a fruitful character. Directly the roots are out of the reach of the warmth of the sun and the fertilising effects of the atmosphere they, as a rule, cease to form much fibre; and although these naked roots will support a tree the growth is not of a fruitful character, hence the frequent necessity for partially or wholly lifting fruit trees. If anyone doubts the truth of the theory that deeply buried roots are the slowest to form fresh fibre, let him explain how it is that trees, bushes, or plants simply "laid in by the heels" quickly form a mass of lively fibres, while those perhaps planted with great care and forebought presumably have not yet started to root afresh.

I have before stated and now repeat half the trees in the country are planted too deeply or are now too deeply buried, and I am not sure the number given should not be put at three-fourths. In very many cases the trees were not actually planted too deep according to the surrounding level of the soil, but the holes having been dug two spits deep, perhaps more, as we hear of some who trench three spits, no allowance was made for the natural settlement of the soil, and in course of time the "collars" of those trees are gradually buried. It also frequently happens that the borders are increased in depth by being added to, and this also tends to bury the stems. It was, I believe, owing to both of these causes that the whole of our Pear trees had to be lifted and replanted. They were planted on double-dug ground, and when lifted we found the greater portion of the roots were much too deep, while the stems were buried at least 6 inches below the surface. Most of us have, very probably, at some time noticed the effects of deeply burying the stems of trees during the process, it may be of levelling some part of a pleasure ground. If this burying the roots out of all reach of sunshine or air does not quickly eventually kill the trees it gradually reduces them to a very poor plight indeed. At Wilton House near Salisbury two Chestnut trees with their stems partially buried indulge in strange vagaries, sometimes flowering when all the rest of the trees are in the midst of their resting period. This and other cases I could name that have ended fatally are extreme cases, but the lesson they teach ought to be profited by, and I hold that they are strong witnesses on my side. Directly the roots are either driven from or encouraged to leave the surface their decadence commences, and we should have few fine old forest trees to be proud of if they were subjected to treatment similar to that considered good enough for fruit trees. It is not the unkindly subsoil that has materially contributed to the formation of those giants, but it is the undisturbed possession of the surface that has to be credited with this good work.—W. IGGULDEN.

(To be continued.)



PRESENTATION TO MR. J. DOUGLAS DICK.—On Thursday last Sir P. Cunliffe Owen, K.C.B., K.C.M.G., C.I.E., on behalf of the staff, and in their presence, presented Mr. Dick with a very handsome drawing-room clock, bearing the following inscription:—"Presented to J. Douglas Dick, superintendent of entrances, by his staff, as a mark of respect for his kindness and courtesy during the series of Exhibitions held at South Kensington from 1883 to 1886.—11th November, 1886."

— A CORRESPONDENT wishes to know if any of our readers can inform him "What is the correct name of the BANANA 'LADIES' FINGERS,' commonly sold on board ships taking passengers to and from the Colonies? The variety in question is far more agreeable and in demand than the ordinary *Musa Cavendishi*. Is it sufficiently dwarf in habit to admit of its being cultivated in ordinary plant houses in this country?"

—"WITH regard to the letter in last week's Journal by Mr. Iggulden," writes "J. W. L.," "I send you a few lines as to my experience of the 'OLD-FASHIONED TUBULAR BOILER.' There has been one here at work in a stove house for nearly seventeen years, it has never given the slightest trouble, although here the water is very hard. As I was making some alterations I have been obliged to remove it. I found

the boiler perfectly sound, but the pipes leading from it entirely gone. I am so satisfied with the performance of this boiler that I have placed in a much larger one of the same description, which will have to heat about 700 feet of piping."

— **CARTER'S PROVIDENT SICK FUND.**—The first annual meeting of the subscribers was held on Monday, the 8th instant, on one of the spacious floors in the new warehouse of Messrs. James Carter & Co., the Queen's Seedsmen, High Holborn, London, and was attended by about 200 members. The chair was occupied by the manager, Mr. C. H. Sharman. The report and balance-sheet for the past year was read and adopted, and resolutions for amending existing rules were passed. During the twelve months of the Society's existence 268 members were enrolled, all of whom were employed in various departments of the business. By payment of a small weekly subscription, benefits in case of sickness varying from 6s. to 18s. per week are secured, and it was considered highly satisfactory that after paying fifty-one claims for sickness and one for death, the Society entered upon its second year with a very substantial balance in hand. After appropriating a suitable amount as a working reserve fund, it was resolved unanimously to make a donation of £5 to the Hospital Saturday Fund, and to distribute any surplus amongst the subscribers. The officers and members of the committee were re-elected, and the proceedings terminated with a hearty vote of thanks to Messrs. James Carter & Co. for a further donation, which they had spontaneously offered upon seeing the satisfactory results of the first working of the Society.

— **POISONOUS MUSHROOMS.**—A Sidcup correspondent says:—"It is stated that a very considerable quantity of injurious fungi is now finding its way into the market as Mushrooms, and in West Kent several cases of serious illness caused by the consumption of what appear to be button Mushrooms, but which are really poisonous fungi, are reported. They have a yellowish appearance when cut, but otherwise appear exactly the same as the edible Mushrooms."

— **THE Chairman of the Committee of the GREAT YORK GALA AND HORTICULTURAL EXHIBITION** for some years past is Mr. Alderman Terry, who was Mayor for the present year, and who was again unanimously re-elected to fill that distinguished position for the ensuing year. Mr. Terry was also Mayor some few years since. This gentleman is most popular in York, and is held in very high esteem by the horticulturists who have for so many years been associated with the Gala as exhibitors or judges, and the meeting of June next will be one of the events of the jubilee year.

— **THE following summary of METEOROLOGICAL OBSERVATIONS** at Hodsock Priory, Worksop, Notts, in October, 1886, have been received from Mr. Joseph Mallender:—Mean temperature of month, 51.6°. Maximum on the 4th, 71.1°. Minimum on the 23rd, 31.1°; maximum in the sun on the 3rd, 117.0°; minimum on the grass on the 23rd, 27.0°. Mean temperature of the air 9 A.M., 51.2°. Mean temperature of the soil 1 foot deep, 53.1°. Number of nights below 32°, in shade two, on grass six. Total duration of sunshine in month fifty-one hours, or 16 per cent. of possible duration. The brightest day was the 2nd. We had eleven sunless days. Total rainfall 3.08 inches. Maximum fall in twenty-four hours on the 6th, 0.47 inch. Rain fell on eighteen days. Average velocity of wind, 7.5 miles per hour. The velocity did not exceed 400 miles on any day, and fell short of 100 miles on nine days. Approximate averages for October—Mean temperature, 48.2°. Rainfall, 2.84 inches. Sunshine (five years) eighty-six hours. A very mild and calm month, exceptionally dull, and of about average rainfall.

— **THE LIVERPOOL EXHIBITION.**—Messrs. W. Richardson & Co., Darlington, have been awarded a silver medal at the Liverpool International Exhibition for examples of their patent system of ventilation for horticultural buildings and other exhibits.

— **MR. ROBERT OWEN, The Floral Nursery, Castle Hill, Maidenhead,** sends us two beautiful bunches of his new MARGUERITES, and remarks as follows on their durability:—"The white Cloth of Silver was cut a fortnight since, and the yellow Cloth of Gold a week ago. The latter has been to R.H.S. one day and night, two days and one night at the Aquarium, one day at Reading, two nights at railway stations, and are now not in bad condition. These are the best for lasting I ever knew." The blooms were very fresh, the golden variety as bright as could be wished, and the other pure white.

— "J. H. W." writes on CUT-BACK HYBRID PERPETUAL ROSES as follows:—"One of our leading amateur rosarians (Mr. G.) stated a short time ago that H.P. cut-backs would not produce exhibition blooms after they were four years old. This is contrary to my experience. Every year I find that several strong shoots are thrown up from the base of the plants. If these are saved and all the other wood is cut out we have virtually a young plant, and if the shoots preserved are pruned back in spring, leaving from two to six eyes according to the growth of the variety, I believe that as good blooms may be had from plants seven or eight years old as from four-year-olds. Possibly Mr. G. may mulch his plants heavily, and by digging this in year after year cause his plants to be too deeply embedded in the soil. In such a case I should advise lifting and replanting in fresh soil. Your readers often complain of a dearth of Rose news in 'our Journal.' Would not this be an interesting subject for discussion?"

— GARDENERS' ROYAL BENEVOLENT INSTITUTION.—We are informed that Baron Ferdinand de Rothschild of Waddesden Manor, Member of Parliament for the Aylesbury Division of Buckinghamshire, has most kindly consented to preside at the forty-fourth anniversary festival of this institution at the "Albion," Aldersgate Street, on Friday, the 1st of July, 1887.

— THE MILD WEATHER.—A remarkable illustration of the mildness of the season is reported from Ulcomb in Kent, where a fruit-grower has gathered a quart of ripe Pears from midsummer blossoming, the second crop from the same tree this year. In various parts of East Kent Raspberries continue to be gathered, and in the neighbourhood of Ashford Laburnum trees are in full blossom.

— ROSES IN NOVEMBER.—A northern correspondent writes:—"Although the rainfall has been heavy so far this autumn, the weather has been particularly mild for Pelargoniums, Lobelias, and many border plants, including Dahlias, are still yielding a few flowers in condition. On the 13th inst. I had the pleasure of seeing a box of beautiful Roses forwarded to Mrs. Heywood from Cloverly Hall Gardens, cut from the rosery outside on the 12th inst. During the previous week we cut a number of blooms of La France, and that useful autumn Rose, Souvenir de la Malmaison. To-day I have found a beautiful bloom of La France that would be highly prized even earlier in the season, the perfume and colour being almost perfect. A few genial days will bring out several others, for the two kinds named are full of buds, but unfortunately it rains every other day. It is unusual for us to cut Roses and Dahlias in the neighbourhood of Liverpool at this date, for early frosts generally destroy border flowers early in the season. I am more convinced than ever that the two Roses named are worthy of being planted in quantity together, so that they can be given cold frame protection in autumn until they have developed their autumn flowers."

— THE following note on EXACUM AFFINE appears in the *American Gardeners' Monthly* from a correspondent at the Washington Botanic Gardens:—"If the individual plants of this recently introduced annual would grow to the same size and flower at the same time, it would be a decided acquisition to the list of bedding plants; but it has a most erratic habit. Plants under the same conditions, growing side by side, differ considerably in height, breadth, and periods of flowering. Single plants dotted over the rockwork give most satisfaction. The colour of the flowers is violet blue, with orange yellow stamens. The habit of the plant resembles *Ophelia corymbosa*, to which it is closely allied."

— THE same publication remarks that Mr. Sturtevant's WATER LILY CULTURE at Bordentown, near Philadelphia, is getting quite famous. A considerable party of lovers of beautiful aquatics, known as the Lotos Club, made a special railroad excursion there on the 9th of September. The famed and deservedly admired Egyptian Lotus has been naturalised there, and this alone is worth many miles of a journey to see—to say nothing of the wonderful *Victoria regia* also in bloom at the same time."

— MUCH interest has been felt in the curious plant *SHORTIA GALATIFOLIA*, which was found by Michaux in North Carolina and never again until a few plants were seen in another place by Mr. Hyams a few years ago. Now Prof. Sargent has discovered it on the original spot where it grew in Michaux's time. It is one of the plants common to Japan and to the United States, that seem to be dying out; and yet individual plants seem able to hold their own. Here are plants that have been able to maintain their place in one spot for over half a century."

NOTES ON PEACHES AND NECTARINES—SELECTING AND PLANTING TREES.

THE time has once more arrived for ordering and planting Peach and Nectarine as well as other fruit trees; therefore a few words as to the most suitable varieties to plant, as well as the manner in which the process of planting should be carried out with the object of securing the most satisfactory results, will be opportune. A good supply of Peaches and Nectarines is desired in all gardens. This, where glass as well as wall accommodation is provided for their culture, may be extended over a period of nearly six months, commencing towards the end of April with Amsden, Alexander, and Hale's Early Peaches, and Lord Napier and Elruge Nectarines, and finishing the supply towards the end of October with Sea Eagle and Salwey Peaches (the latter variety in a heated house), and Pine Apple and Stanwick Nectarines. It is not my intention to write an exhaustive article on this subject, but to deal briefly with the matter, confining myself to an enumeration of the names of "select varieties" in preference to giving a long list of varieties in cultivation, which would only tend to confuse amateurs and young beginners.

SELECT VARIETIES OF THE PEACH.

Amsden is a medium-sized roundish American Peach, ripening on a south wall out of doors (to which branch of Peach culture my remarks will be confined in this paper) about the end of June.

Alexander, medium size, juicy and brisk in flavour, ripening end of July. Hale's Early, medium, roundish ovate fruit, crimson next the sun and full of flavour, ripening the beginning of August.

Dr. Hogg is a large, round, rich, sugary, and a highly coloured Peach, ripe from the middle of August.

Grosse Mignonne, a well-known variety, the fruit being large, roundish, well coloured, rich, and highly flavoured, ripe from the middle to the end of August. Noblesse, ripe the end of August, fruit large, roundish oblong, and full of juice.

Royal George ripens early in September, the fruit being large, round, and of excellent flavour, but the leaves of this fine old variety, like the preceding one, are more subject to the attacks of mildew than any other varieties that I am acquainted with are, and on this account they are not grown so much as they deserve to be, seeing that the attacks of this fungoid can be guarded against, and should it appear, as it is likely to do in a low and consequently damp district, a dusting of the affected leaves while damp with the flowers of sulphur would soon eradicate it.

Goshawk is one of the very best midseason Peaches we have. It is an American variety, ripening the beginning of September large fruits of exquisite flavour.

Bellegarde produces large, round, dark, richly flavoured, and highly coloured fruit, ripening about the middle of September; it is a fine exhibition Peach. Barrington, ripening about the same time, is another excellent variety, the fruit being large, roundish ovate, and delicious flavour.

Violette Hâtive, three or four trees—more or less, according to extent of Peach walls—of this excellent, large, roundish ovate, melting and beautifully coloured Peach should be planted in different aspects—south, west, and east—so as to secure gatherings of it from the beginning to the end of September.

Late Admirable ripens large, elongated, well-flavoured fruits in the end of September, and Walburton Admirable yields fruits of a like description early in October.

Sea Eagle, large, pale, well-flavoured fruit, highly coloured on the side exposed to the sun; it is a good grower and a sure cropper, ripe from the beginning to the middle of October. This year I picked my last dish of this, the best all-round late Peach in cultivation, on the 18th inst.

Salwey is the largest and latest of all Peaches when the trees are not overcropped and are liberally supplied with liquid manure at the roots while swelling its fruits. But it should be grown under glass, where a little fire heat could be had to put flavour in the fruits, which, when thus grown, assume a rich golden hue and are full of flavour. The varieties enumerated are all good growers and free fruiters, and are suitable alike for indoor and outdoor culture, except Salwey, which, if grown at all, should be in a heated house, as indicated.

NECTARINES.

Lord Napier is the earliest Nectarine that I am acquainted with. The fruit is large, handsome, and of excellent flavour, ripening towards the end of August, only a few days before that well-known excellent variety Elruge.

Rivers' Orange comes in about the same time. This is a handsome and finely flavoured Nectarine, as also are Balgown and Pine Apple. These are two of the finest September Nectarines we have; the fruits of both are large, highly coloured, with yellow, melting, rich, and highly flavoured flesh.

Pitmaston Orange, Victoria, and Stanwick are good late varieties; and, like all the others mentioned, are good growers and free fruiters.

PLANTING.

Upon the manner in which this important operation is performed depends in a great measure the ultimate condition and producing powers of the trees. Having determined the distance (15 feet) at which the trees should be planted from each other against the walls, an order for the necessary number of healthy, kindly grown, and rightly named trees should be despatched forthwith to any of the large nurserymen having a reputation for supplying trees of this description; meanwhile, having first marked the central position of each tree on the wall with a piece of chalk

or charcoal, excavate holes extending 2½ feet on either side the mark on the wall, 5 feet therefrom and 4 feet deep, the outline of the hole partaking of the form of a half circle. Into the bottom of each hole put 9 inches thick of brickbats, stones, or clinkers, and over these a sufficient thickness of coarse gravel should be laid to fill in the chinks, and following this a layer of turf grass side down to secure good drainage; but should water be likely at any time to rise nearer to the surface than 4 feet it will, of course, be necessary to reduce the depth of the hole to such an extent as will prevent the possibility of the roots of the trees being at any time submerged—a circumstance which would be injurious to their well-being. The holes having been made ready for the reception of the soil, the latter—assuming that the character of the natural soil is not such as is calculated to promote and afterwards sustain satisfactory growth in the trees—consisting of three parts calcareous loam and one of old lime rubble and wood ashes, well mixed, should be placed into the holes in a moderately dry state, so that it may not adhere to the feet in treading on it. In planting the trees make due allowance for the soil subsiding 5 or 6 inches within as many weeks from the time of planting.

Having placed the individual trees in position, spread the roots out in every direction, with a slight inclination downwards, shortening back at the same time any straggling roots, and cutting clean away with a sharp knife any portion of the same that may have sustained injury in the process of lifting; and with the object of encouraging the emission of young feeders, make a series of incisions along the principal roots previous to covering the latter with 6 inches thick of the compost indicated, and before treading the latter gently over, take hold of the tree by the stem and give it a few good shakes in an upward direction, so as to allow of the soil mixing among the roots. This done, lay on 3 or 4 inches thick of rotten dung as a mulching. This will maintain the roots in a more equable condition than could otherwise be secured. Trees thus planted should be temporarily secured to the wall with nails and long shreds to allow of them sinking with the soil. Trees so planted, providing the after treatment be good, cannot fail to yield satisfactory results during ordinary seasons.

TRANSPLANTING HOME-GROWN TREES.

In most large gardens young trees are, where space admits of its being done, grown on for a year or two between the permanent trees or elsewhere for to take the place of any trees indicating exhaustion through age or other cause. Where this is the case, the trees should be lifted carefully with as much soil adhering to the roots as possible. To do this a trench should be opened at about 18 inches from the stem of the tree to be lifted (from 2 to 3 feet will be none too much for trees which have been in their present position four or five years), working the soil from under and around the ball of earth and roots with a five-tined fork until the tree can be lifted bodily by two or three men, while a third man places a mat underneath and secures it to the stem, the better to enable the tree to be removed and transplanted with the soil adhering to the roots, the obvious object being to prevent the tree from experiencing only as little check as possible in the process of being transplanted, and also to get the tree re-established in its new quarters before they shed their leaves. This desirable object cannot be obtained with trees had from a nurseryman, inasmuch as they are not lifted for transportation to customers until the fall of the leaf. In due time I purpose making a few remarks on the pruning and training of the trees.—W. W. WARD, *Longford Castle Gardens, Salisbury.*

CHRYSANTHEMUM SHOWS.

SOUTHAMPTON.—NOVEMBER 9TH AND 10TH.

THE annual Exhibition of this Society was held, as usual, in the Skating Rink, a place particularly well adapted for such an Exhibition, and so numerous were the exhibits that the place, large as it is, was taxed to its utmost capacity. The Show was, as usual, remarkable for the excellence of the produce; particularly does this apply to the fruit classes, a great number of Apples and Pears being staged. In the three classes devoted to the former fruit forty-three competitors staged, in all numbering 144 dishes of six fruits each. Pears, too, were shown in large numbers and of great size. Grapes formed quite a feature in themselves. Cut blooms of Chrysanthemums were numerous and of excellent quality in the winning stands, while some of the others showed a slight roughness consequent upon an unfavourable season. Specimen plants were of excellent quality, indeed it would be difficult to find better anywhere. Groups of Chrysanthemums and miscellaneous plants were very meritorious; the same may be said of the vegetables generally. The Committee, with Captain Gibbs as Chairman, and the able Secretary, Mr. C. S. Fudge, conducted the arrangements in a most satisfactory manner.

For the best collection of Chrysanthemums grown in pots and arranged in a space 8 feet by 5 feet, Mr. J. Allen, gardener to J. Bailey, Esq., Elmfield Hill, Southampton, was easily first, his plants carrying blooms of the best character, both Japanese and incurved, and being tastefully arranged made an imposing display. Mr. Busby, gardener to F. Willan, Esq., Thornhill Park, Bitterne, was second, and Mr. E. Wills, gardener to Mrs. Pears, Bassett, Southampton, third, both showing capital groups. For six plants incurved or reflexed, distinct, Mr. W. Joy, nurseryman, Shirley, Southampton, was first with grand specimens, 5 to 6 feet in diameter, and carrying a large number of blooms of excellent quality; second Mr. Wills with most meritorious plants. Mr. Joy was again successful for the same number of Japanese plants, which showed the same high character as was noticeable in the former class; his best plants were Bouquet Fait, 150 blooms; Peter the Great and Madame Bertie Rendatler being alike fine. Mr. Wills was an excellent second. The best single specimen Japanese was staged by Mr. W. Joy, and was a grand plant of Lady Selborne freely flowered, followed by Mr. Wills with Hiver Fleuri, also in capital condition. Mr. Busby was third.

Mr. Joy was again first with Mrs. Dixon, 6 feet across, and freely flowered. For the best incurved or reflexed specimen, Mr. Wills relied upon Dr. Sharpe as his best, which was of large size, but the blooms were pale in colour although numerously disposed over the plant.

For twenty-four cut blooms, sixteen incurved or reflexed and eight Japanese, there were six competitors, all staging creditably. Mr. Wildsmith, gardener to Lord Eversley, Heckfield, Winchester, was placed first. His incurved specimens were large, solid, and of capital finish, while the Japanese were bright and full, the best of which being Madame Ling, Mdme. C. Audiguier, and Maiden's Blush, while Golden Empress, Queen of England, Jeanne d'Arc, Princess of Wales (very fine), Princess Teck, and Emily Dale were the best of the incurved flowers. Mr. Wills was a close second, his Japonaise, Val d'Andorre, M. Burnet, Mrs. W. Shipman, Barbara, and Hero of Stoke Newington being capital in quality. Mr. Neville, gardener to F. W. Flight, Esq., was placed third, his incurved being smaller, though very neat. Among his Japanese was the new variety Mrs. J. Wright, which received a certificate the previous week at the Crystal Palace Show, and was also honoured on this occasion. For twenty-four blooms, not less than eighteen varieties, Mr. J. Allen was placed first with large blooms. Some of the incurved were a trifle coarse, the best being Lord Alcester, Hero of Stoke Newington, and Queen of England, while J. Delaux and Japonaise were his best in the Japanese section. Mr. H. W. Ward, gardener to the Earl of Radnor, Longford Castle, Salisbury, was second, his best being Queen of England, Golden Empress, and M. Burnet. Mr. Wills was third. Mr. Wildsmith repeated his previous success by taking first honours for twelve incurved blooms with an excellent stand, clean and fresh. Messrs. Allen, Wills, and Ward secured the remaining prizes in the order named. Mr. Ward secured first honours for twelve blooms of Japanese, with capital examples of Triomphe de la Rue des Châlets, M. Burnet, and Val d'Andorre; Mr. Allen second; third Mr. Wildsmith, and fourth Mr. Wills. Twelve competitors in this class. For twelve blooms, Anemone flowered, distinct, Mr. Penford, gardener to Sir F. Fitzwygram, Bart., Leigh Park, Havant, who put up large specimens of Lady Margaret, Empress, and Mdme. Berthie Pigny; second Mr. Neville, third Mr. Wills, fourth Mr. Ward. The competition for twelve blooms of reflexed was keen, and very fine were the specimens staged in all the stands, King of more particularly those in the first stand of Mr. J. Allen, who had Crimsons, Golden Christine, Cloth of Gold, in grand order of merit; Mr. Wildsmith was second, his Cullingfordi and Phidias being fine; Mr. Ward was third, and Mr. Wills fourth.

Pompons were extremely fine from Mr. Neville, who easily secured first honours; Mr. Wills was second; Mr. H. Guillaume, an amateur, third. A maiden first prize class for twelve blooms in eight varieties, was won by Mr. C. Warden, gardener to Sir F. Bathurst, Clarendon Park, Salisbury. Second, Mr. R. West, gardener to J. R. Wigram, Esq., Northlands, Salisbury. Amateurs' cut blooms were well represented by Mr. R. Carter, St. Denys.

Miscellaneous classes were devoted to Orchids, table plants, Primulas, and Cyclamens. For the former Mr. T. Osborne, gardener to J. Bachan, Esq., Wilton House, Southampton, was first with an effective group, composed of choice specimens, such as *Oncidium divaricatum*, *Cattleya maxima*, *Vanda cœrulea*, *Calanthe vestita oculata*, and *Dendrobium formosum*; while Mr. Molyneux was placed first for nine table plants; Mr. Reynolds, gardener to Col. The Hon. H. Crichton, being second. For Cyclamens Mr. Budd, gardener to J. P. Dalgety, Esq., Lockesby Hall, Romsey, was first. A box containing a dozen varieties of single Chrysanthemums, staged in bunches, was set up "not for competition" by Mr. E. Molyneux, gardener to W. H. Myers, Esq., Swanmore Park, Bishop's Waltham, which were much admired.

FRUIT.—For three distinct varieties of Grapes, one bunch each, eight collections were staged. Mr. T. Hall, gardener to Captain Davidson, South Stoneham House, Southampton, was first, staging Alicante, fine in bunch, berry, and colour; Gros Guillaume, small in berry, but of excellent finish; and a fine bunch of Muscat of Alexandria, perfect in form, with just the slightest trace of green at the point. Mr. Molyneux followed closely with Gros Guillaume, 5 to 6 lbs. weight, fine berries and colour, Alicante and Trebbiano, in good condition. Third, Mr. C. Warden, having good Muscat of Alexandria as his best. Mr. Molyneux led the way with three bunches of black Grapes, staging Gros Guillaume, each bunch weighing from 5 lbs. to 6 lbs., fine in berry and colour. Mr. Hall followed with Alicante, faultless in appearance. Third, Mr. Ward, with Mrs. Pince. Mr. J. Chalk, gardener to G. Read, Esq., Westwood, Wilton Road, Salisbury, staged the best three bunches of white Grapes, grand examples of Muscat of Alexandria, large in bunch and berry, and beautifully coloured. Mr. Budd was second, and Mr. Ward third, both staging the same variety in good condition. For two bunches white Grapes Mr. Penford was first with Muscat of Alexandria. Third, Mr. Harris, gardener to G. M. Mordaunt, Esq., Bitterne. Mr. Penford was also first for the same number of black bunches with Alicante in fine condition. Second, Mr. Warden. Third, Mr. J. Allen. Fourth, heaviest bunch of any kind of Grape Mr. Ward was first with Gros Guillaume, 8 lbs. Mr. Molyneux followed with the same variety, weighing 1 oz. less. Mr. Wildsmith was first for one Pine, followed by Mr. Richards, gardener to the Earl of Normanton, Somerley, Ringwood. For four dishes of Apples, distinct kinds, four fruits of each, Mr. T. Hall took first honours with fine samples of Blenheim Pippin, Wellington Pippin, Small's Admirable, and Bedfordshire Foundling. Second prize to Mr. W. G. Pragnell, gardener to J. D. W. Digby, Esq., Sherborne Castle, Dorset, with Peasgood's Nonesuch, and Lady Henniker as his best. Third, Mr. W. Sanders, gardener to J. East, Esq., Longstock House, Stockbridge. For three dishes of dessert Apples there were eleven entries; Mr. S. Chapman, gardener to Colonel Knatchbull, was first, Ribston Pippin, and King of Pippins being best; Mr. Wildsmith was second; Mr. Riford, Rownhams, was third. For three dishes of kitchen Apples Mr. Hall was again first; second Mr. G. Linder, gardener to Sir Henry Mildmay, Dogmersfield, Winchester; third, Mr. Pragnell. For four dishes of Pears, six fruits each, first Mr. W. Sanders, General Todleben and Pitmaston Duchess being best; second Mr. A. W. Rooke, gardener to W. Gascoigne Roy, Esq., Byams, Marchwood, third, Mr. Linder. Vegetables were numerous and well staged. For the best collection of eight varieties Mr. Sanders was first, having Suttons' Prizetaker Leek, Carter's Perfection Tomato, Reading Russet Potato as his best; second Mr. Pragnell, who had extra good Leeks, and Green Globe

Artichokes in faultless condition; third Mr. Molyneux, fourth Mr. Busby.

READING.—NOVEMBER 12TH.

THREE Chrysanthemum Shows have now been held by this Society in Reading, and it is pleasant to be able to record that the progress made has been in a high degree satisfactory. The first Exhibition did not do full justice to the capabilities of the local cultivators, but it was financially encouraging, a balance of £35 resulting. The second Show was in all respects an improvement on the first, a balance of £83 remaining when accounts were closed. The third Exhibition has advanced still further in horticultural importance, and it is to be hoped the financial results will be proportionately good; in any case, the Honorary and Assistant Secretaries, Mr. R. D. Catchpole and Mr. W. Smith, deserve to be congratulated. Cut blooms, plants, and fruit were capitally shown, the quality in all the classes being remarkably even and the competition keen. The exhibits were arranged in the New and Old Town Halls, the plants and groups chiefly arranged near the walls, with the cut blooms and fruits on tables in the centre of the halls.

The cut blooms were excellently shown in most of the classes. Six collections of eighteen incurved blooms were staged, Messrs. W. & G. Drover, Fareham, leading with the following varieties:—Back row—Nil Desperandum, Golden Empress, Empress of India, Lord Alcester, Alfred Salter, and Queen of England. Middle row—Princess Teck, Mrs. W. Shipman, Emily Dale, Beauty, Jeanne d'Arc, and Prince Alfred. Front row—Lord Wolseley, Princess of Wales, John Salter, Hero of Stoke, Angelina, and Baron Beust. The second place was accorded to Mr. Wildsmith, gardener to Lord Eversley, Heckfield Place, who had a beautiful even collection, Princess of Wales, Lady Hardinge, and Golden Empress of India being very fine, together with a handsome white sport from Princess Teck, named Lord Eversley. It has proved constant for four years, and the Judges awarded a certificate for it. Mr. Neal, gardener to P. Southby, Esq., Bampton, was third, and Mr. Kendall, gardener to H. C. Holland, Esq., Rotherhampton, fourth. Seven stands of twelve incurved, all containing admirable blooms, Mr. Strong, W. Lington College; Mr. Trinder, gardener to Sir H. St. John Mildmay, Bart., Dogmersfield; Mr. Bowerman, gardener to C. Hoare, Esq.; and Mr. Baskett, gardener to W. J. Palmer, Esq., Reading, were the prizetakers in the order named. Japanese varieties were remarkably well represented in the class for twelve blooms, distinct varieties, no less than a dozen competitors entering. Mr. Baskett won premier honours for handsome, full, and bright specimens of *Triomphe de la Rue des Châlets*, Soleil Levant, Mr. Burnet, Madame B. Pigny, J. H. Laing, M. Delaux, Madame C. Audiguier, Mdlle. Lacroix, Comtesse de Beauregarde, J. Delaux, Balmoreau, and Thunberg. R. W. Beachey, Esq., King-kerwell, Mr. Wildsmith, and Mr. Trinder secured the remaining awards. There were also nine exhibitors of six Japanese, Mr. Jennings, gardener to J. J. Freeman, Esq., Farnborough, being first with large blooms of Fair Maid of Guernsey, Roseum superbum, Val d'Andorre, F. A. Davis, and Mdlle. Lacroix. Mr. Wildsmith had the best stand of twelve reflexed blooms in a class of eight competitors, showing very fine examples of Golden Christine, Cullingfordi, Mdlle. Madeline Tezier, King of Crimsons, Madame Melaine Fabvre, Pink Christine, Cloth of Gold, Phidias, and Chevalier Domaga. Mr. Kendall staged the best box of twelve Anemones, beautiful, well-formed blooms. A class was provided for twelve blooms not less than eight large-flowered varieties, as grown on not less than 4 inches of stem above the board. Eleven entered this class, Mr. Wildsmith being an excellent first with Maiden's Blush, Meg Merrilies, Japonaise, Prince of Wales, L'Adorable, Cullingfordi, Princess of Wales, Jeanne d'Arc, and Mabel Ward, all in fine condition, fresh, and of good substance. Mr. Wildsmith also had the best Pompons, followed by Messrs. Kendall and Smith.

Amongst the specimen plants, Mr. Snrman, gardener to C. H. Witherington, Esq., Sonning, had the best, his premier six specimens of Japanese varieties being most creditable examples of skilful culture and neat training. They were about 4 feet in diameter and covered with bloom, the varieties being La Nympe, La Charmeuse, Lady Selborne, Red Dragon, Elaine, and Peter the Great. Mr. Farcy, gardener to C. Stevens, Esq., Woodley Hill, was a close second, and Mr. R. Broker, gardener to R. Tompkins, Esq., was third. In other classes the same exhibitor secured several prizes, but with groups Messrs. Baskett, Balchin, and Hatch were placed first, second, and third respectively.

Fruit was shown in good numbers, especially Grapes. Mr. Bowerman, Mr. Howe, gardener to Sir R. Sutton, Bart., Benham Park, and Mr. Wells were the winners in the class for two bunches of Alicante, all those shown being well coloured; as also were the Gros Colmans from Mr. Moore, gardener to Mrs. Haig, Bray Court; Mr. Elliott, gardener to J. T. Hibbert, Esq., Braywick; and Mr. Tyler, gardener to S. Gulliver, Esq., Aylesbury. Mr. Wells had the finest samples in the any black variety class, staging Cooper's Black, bearing a fine dense bloom. Two superbly coloured bunches of Muscat of Alexandria gained Mr. Pope, gardener to the Earl of Carnarvon, Highclere, the first prize in its class, Mr. Bowerman following with well-ripened specimens. Mr. Howe was first with six dishes of fruit, Mr. Turton gaining most of the leading prizes for Apples and Pears.

ST. NEOTS.—NOVEMBER 9TH.

THE third annual Exhibition of this Society was held in the Corn Exchange, a commodious well-lighted building, admirably adapted for the purpose. The President, Lord Esmé Gordon, Paxton Park, contributed a large group of the popular autumn flower, besides other plants for the decoration of the place. These added substantially to the attractiveness of the Exhibition, notably three specimen plants in large pots, pyramids of 5 feet height and 6 feet through at the base; the kinds were President, Mrs. Forsyth, and Prince of Anemon s. S. O. Newton, Esq., Croxton Park, also sent a number of plants for decoration, and Mrs. Cherre, Papworth Hall, Cambs, exhibited a fine stand of cut spikes of the beautiful blue *Salvia Pitcheri*, which at any time, and particularly at this time of year, is peculiarly acceptable, also a fine stand of cut blooms of Zonal Pelargoniums, &c. Mr. John Hall, Eaton Ford, had a large and tasteful collection

of Gourds, and Mr. R. Wall had some magnificent Onions. All those were not for competition, and collectively made an interesting display.

In the open class the premier prize for twenty-four cut blooms, twelve incurved and twelve Japanese, went to Mr. Redman, gardener to J. H. Goodgames, Esq., Eynesbury, St. Neots, with a very even lot, particularly the incurved, which comprised, back row, 1 ft to right: Prince of Wales, Novelty, Jardin des Plantes, Lord Alcester. Middle row: Princess of Wales, Lord Wolseley, Golden Empress, and Prince Alfred. Front row: Princess Beatrice, Mr. G. Glenny, Venus, and Mrs. Dixon. Japanese.—Back row: Mons. Ardenc, Thunberg, Mdlle. C. Audiguier, Album plenum. Middle row: Soleil Levant, Belle Paule, Madame Lacroix, Comte de Germiny. Front row: Jeanne Delaux, Peter the Great, Val d'Andorre, and Ethel—a very creditable twenty-four. Second Mr. Tillbrook, gardener to B. Brown, Esq., Houghton Hill, Huntingdon, with fresh blooms, and it was not difficult to foresee what position they would have held with the aid of the tweezers. The blooms evidently were shown in all their natural beauty, and exceedingly fresh and attractive, being large, deep, and full. In the back row of incurved were Golden Queen of England, Queen of England, Lord Wolseley, Eliza Peele, a fine blusa variety, with waxy petals, beautifully incurved. Middle row: Mr. Howe, Jardin des Plantes, Empress of India, Refulgence. Front row: White Venus, Prince Alfred, Mr. Bunn, and Princess of Wales. Japanese.—Back row: Thunberg, Mdlle. C. Audiguier, Fair Maid of Guernsey, and an unnamed variety. Middle row: Jeanne Delaux, Triomphe de la Rue des Châlets, Fulton, and Belle Paule. Front row: Mdlle. Moulise, La Nympe, Comte de Germiny, and Yellow Dragon. Third Mr. R. Chilman, The Moat, Soham, Cambs, whose best flowers were Nil Desperandum, and in Japanese Margot, Maiden's Blush, Boule d'Or, and Marguerite Marrouch. For twelve incurved the positions changed, B. Brown, Esq., taking first, Eliza Peele, very fine; Golden Queen of England, Empress of India, and Mrs. Sharp being good. Second J. H. Goodgames, Esq. For twelve Japanese B. Brown, Esq., was first, having Thunberg, Mdlle. C. Audiguier, Fair Maid of Guernsey, Jeanne Delaux, Comte de Germiny, Triomphe de la Rue des Châlets, and Sarnia, very fine. Second Mr. R. Chilman, who had Elaine, Cry Kang, Source d'Or, Bouquet Fait, and Hiver Fleuri, good. Twelve reflexed, first B. Brown, Esq., with grand blooms of King of Crimsons, Golden Christine, Christine, Felicity, Cullingfordi, very bright and telling, and Salteri. Second J. H. Goodgames, Esq. In twelve large Anemone flowered B. Brown, Esq., took first with Emperor, fine; Lady Margaret, Fleur de Marie, good; George Sand, Louis Bonamy, very fine; Sœur Dorothee Souille, charming; Princess, good; and Gluck. Second J. H. Goodgames, Esq., having Fabian de Médiana, fine, and Acquisition that deserve mention. In twelve Pompons in bunches of threes the positions were reversed, J. H. Goodgames, Esq. taking first place with good blooms of President, Marabout, Mr. Astie, Purity, &c. Second B. Brown, Esq. These exhibitors had it much their own way.

Prizes were offered for baskets of Chrysanthemums, and brought out several very effective arrangements. The first prize went to J. H. Goodgames, Esq., for an effective arrangement, having Adiantum farleyense at the base, and A. cuneatum interspersed with the blooms. Second B. Brown, Esq., whose basket with handle was very tastefully arranged, relieved with Adiantum gracillimum and A. cuneatum. Prizes were offered for bunches of Violets. First J. H. Goodgames, Esq., second Mr. F. J. Maddison, St. Neots, both showing Marie Louise, very large and good.

Only two groups of Chrysanthemums for competition were exhibited, the space allowed being 8 feet, by 5 feet deep. J. H. Goodgames, Esq., was easily first with good plants, carrying large blooms, the foliage good, altogether very bright and effective. Second Mr. Williams, gardener to G. Gower, Esq., The Shrubbery, St. Neots. These groups added much to the effectiveness of the Show. The principal feature of the Show, however, was the specimen plants, particularly the admirable examples exhibited by J. H. Goodgames, Esq., who took first honours for six in pots not exceeding 12 inches in diameter. The plants were models of training and high culture, not exceeding 3 feet in height, pot included, being symmetrical half or flat-topped globes, carrying blooms of a clear, fresh, and well-formed character, little inferior to specimen blooms. The plants were Mrs. Dixon, 6 feet through, and very fine; Mrs. G. Rundle, same size, and finely flowered; G. Glenny, 6 feet, remarkably fine; Dr. Sharpe, 4 feet; Felicity, 4 feet; and Golden Christine. They were most creditable to the grower, Mr. Redman, and deservedly admired. Second G. Gower, Esq., with well-bloomed much taller plants, the varieties being Mrs. Dixon, Dr. Sharpe, G. Glenny, Mrs. G. Rundle, Empress of India, and King of Crimsons. In single specimens J. H. Goodgames, Esq., was first, with a magnificent example of Mrs. G. Rundle, fully 6 feet in diameter, and loaded with fine blooms. Second G. Bowes, Esq., with Mrs. Forsyth.

Prizes in the open class were off red for fruit, which only brought out two collections. First B. Brown, Esq., who had two bunches of Muscat of Alexandria Grapes, finely finished, the berries large and of a beautiful amber colour; two bunches of Gros Maroc Grapes, large and very oval in berry, jet black, with a faultless bloom, very fine examples indeed of superior cultivation and high finish, doing Mr. Tillbrook much credit. The collection included a Lord Beacousfield Melon, Beurré Clairgeau, high coloured; Marie Louise, very russety; Napoleon, fine; Passe Crassane, Josephine de Malines, and Beurré d'Anjou Pears; Apples, Cox's Orange Pippin, good; King of the Pippins, bright and high coloured; Ribston Pippin, Winter Peach, Sam Young, good; and Court of Wick, with Walnuts; altogether a very creditable and high class collection. Second G. Bowes, Esq., who had an extensive collection, but the whole, excepting the Grapes, unnamed, which is regrettable, as the Apples were large and good, also the Pears, and as this would serve to indicate the varieties suited to the locality. This collection had a dish of very well-preserved Red Currants and Filberts.

In the amateur class there was simply no competition. The gardens about St. Neots are really lovely with Chrysanthemums, but no one seemed to care to compete for the prizes offered, which must have a depressing effect on the indefatigable Secretary, Mr. Ratchelous, and the Committee. Notable examples to the contrary of this were Mr. Plum, St. Neots, who took first for three specimens in pots, and also first for a single specimen; and Mr. J. Hall, Cross Hall, St. Neots, who was second. The day was wet, but it is to be hoped the guarantors will have recouped their outlay, which their energetic efforts amply deserve.—G. ABBEY.

GUERNSEY.—NOVEMBER 10TH AND 11TH.

THE annual autumn Chrysanthemum Show of the Guernsey Royal Agricultural and Horticultural Society was held on the 10th and 11th November, in the Market Halls of St. Peter Port. The display of Chrysanthemum plants was magnificent and the cut blooms remarkably fine. The training of the specimens was very clever, and in all the classes the competition was very keen. W. Nottridge gained the cup offered for most first prizes in the plant classes, and Major Carey carried off first prizes almost throughout the cut blooms, a box of twelve Empress of India exciting great admiration. A new seedling (Japanese), raised by Major Carey, and named Governor of Guernsey, was much admired for its colour and form and the full centre. In the winning boxes Empress of India, Mrs. Shipman, Lord Wolseley, Barbara, Henri Jacotot, Peter the Great, William Robinson, J. Delaux, Japon Fleuri, and Belle Paule were all remarkable for size, colour, and substance.

Reflexed and Anemones were also well shown. In the former class Chevalier Domage, King of the Crimson, Cullingfordi, Dr. Forsyth, and Peach Christine were much admired; and among the Anemones, Souvenir de l'Ardène, Madame Cabrol, Gluck, and Madame Godereau were in full perfection.

Fruit was also abundant, and roots were enormous and of every possible description. The weather was particularly fine, and the band of the Gordon Highlanders was in attendance both days of the Show. The halls were visited by the Lieut. Governor General Elkington and his Staff, by Sir Edgar McCulloch, Chief Magistrate, and by the Bishop of Nassau and his Chaplain, who complimented the Secretaries on the grand Show, which entirely filled the four large halls.

BATH—NOVEMBER 10TH AND 11TH.

AFTER three successful Exhibitions of Chrysanthemums, the Bath Society has again suffered a severe disappointment in regard to the weather, and this following upon an equally unfortunate autumn Show is a matter for sincere regret. As far as the Show was concerned there was nothing left to be desired, as, undoubtedly, it was one of the best all-round displays of the season, and deserved much better patronage. Mr. Pearson and the other gentlemen associated managed everything in their usual able and courteous manner, this adding materially to the pleasure exhibitors have in assisting at these shows.

CHRYSANTHEMUM PLANTS.—Five highly creditable collections of six flatly trained plants of large flowered varieties were shown, Mr. C. Silcox, gardener to W. Vowles, Esq., Brislington, taking first prize with fresh and good examples of Mrs. Dixon, Mrs. Rundle, Guernsey Nugget, John Salter, Mrs. Forsyth, and Sunset. Mr. G. Tucker, gardener to Major Clarke, Trowbridge, was second, and Mr. F. W. Fisher, gardener to R. B. Cater, Esq., Bath, third, both having highly creditable specimens. In the next class for four plants Mr. A. Hawkins, gardener to T. Jolly, Esq., Bath, was first; Mr. J. Weston, gardener to the Rev. C. C. Layard, second; and Mr. J. Benson, gardener to Mrs. Walker third. The trained plants of Japanese varieties were very handsome. Mr. G. Tucker was first for six varieties, having Madame de Sevin, Bertie Rendatler, Mrs. Starling, La Frisure, Hiver Fleuri, and Soleil Levant. Mr. W. Taylor, gardener to S. P. Budd, Esq., Bath, was second with very freely grown plants, and Mr. S. Kerslake, gardener to the Rev. E. Handley, Bath, third. Mr. Tucker had the best three pyramidal Pompons, and Mr. A. Hawkins was a good second. Mr. Silcox was easily first for a single pyramid of an incurved variety, having Mrs. Rundle fresh and good. Mr. W. J. Brown was first for a flatly trained plant, showing Mrs. Rundle fully 5 feet across and well flowered. Mr. W. Taylor was a good second with a fine plant of Mrs. Dixon, and Mr. Hawkins third, also showing a fine Mrs. Rundle. Mr. F. W. Fisher and Mr. Taylor both staged good pyramids of Japanese Peter the Great, and received the prizes in the order named. Mr. Tucker was first for three standard incurved and very formally trained members of the Rundle family. Mr. J. Durbin, gardener to S. Tredwell, Esq., was second, and Mr. Hawkins third. Mr. Durbin had an equal first for three standard Japanese, Rosea Superba and Bertie Rendatler being especially good. Mr. Taylor, who was placed equal, had Margot and L'Île des Plaisirs very good. Conservatory plants of incurved sorts were rather formally trained, but the flowers were good. Mr. Silcox was first, Mr. T. W. Fisher second, and Mr. A. W. Southard third. In a corresponding class for Japanese varieties Mr. J. Durbin was first, Mr. Taylor second, and Mr. J. Benson third. Four groups of miscellaneous plants were shown, and on the whole they may be classed as fairly good. Mr. W. Taylor was easily first, having a good selection, and among the blooms were many extra good ones; Mr. A. A. Walters, Bath, was a good second, and Mr. J. Southard third.

MISCELLANEOUS PLANTS.—Two good stands of six Orchids were shown, the best being staged by Mr. G. Pym, gardener to Mrs. Goldsmith, and included a good form of *Phalaenopsis grandiflora*, *Oncidium crispum*, *Odontoglossum Alexandræ*, *Oncidium varicosum*, and *Cypripedium insigne*. Mr. T. W. Fisher was second, his best being *Oncidium varicosum*, *Oncidium tigrinum*, and *Lælia autumnalis*. There were several good lots of Primulas, Mr. W. Marchant, gardener to Jerome Murch, Esq., Bath, being first for twelve plants; Mr. C. J. Fisher, Bath, second, and Mr. J. Benson third; and with four plants Mr. S. Brown was first, Mr. E. Reeves second, and Mr. G. Tucker third. Mr. J. Durbin was the only exhibitor of Poinsettias, and was deservedly awarded the first prize. Mr. W. C. Drummond was first, and Mr. Marchant second, for six fine-foliaged plants; and there were several other prizewinners in the smaller class. Messrs. G. Cooling & Son had the best six Bouvardias, these consisting of dwarf well-bloomed plants of Priory Beauty, Longiflorum album, and Dazzler. Mr. G. W. Shelton, gardener to W. R. Wait, Esq., Bristol, was a good second, and Mr. J. Durbin third. Mr. A. A. Walters was the only exhibitor of Cyclamens, and was awarded the first prize. Six good lots of table plants were shown, Mr. B. Hopkins, gardener to John Bailly, Esq., Frome, being first with a pretty even lot, including *Croton nobilis* and Warreni, *Cocos Weddelliana*, and *Pandanus V. itchi*. Mr. G. W. Shelton was a close second with smaller but very pretty plants, and Messrs. G. Cooling & Son third. Only two groups of plants were arranged. Messrs. Cooling & Son were well first, their group suffering from an over-plentitude of choice plants. Mr. W. C. Drummond was second, and his group also included a good assortment.

CUT BLOOMS.—These were not nearly so numerous as they were at the

last Chrysanthemum show, and unless better prizes are offered there is a danger of still fewer being shown. Only one class is provided for Japanese varieties, and in these the highest prize should have been trebled. Three competitors entered in the class for twenty-four large-flowered sorts. Mr. E. Miller, gardener to F. Tagaart, Esq., being easily first. His best were Empress of India, Jeanne d'Arc, John Salter, Mrs. Shipman, Barbara, Princess of Wales, Princess of Teck, and Cullingfordi, the last-mentioned being very fine. Mr. John Baylis was a good second, and Messrs. Clibran and Sons, Altrincham, third, both having very creditable collections. There was much better competition with twelve incurved varieties, Mr. W. Iggulden, Marston House, Frome, being first with a good lot, which included fine blooms of Golden Empress of India, Princess of Wales, Lord Wolseley, Prince Alfred, Princess of Teck, Isabella Bott, and Barbara. Equal seconds were awarded to Mr. E. S. Cole, gardener to W. Pethick, Esq., Bath; and Mr. G. Tucker, both having very praiseworthy exhibits. With six incurved varieties Mr. B. Hopkins was easily first, having Isabella Bott, Lord Wolseley, John Salter, Golden Empress, and Nil Desperandum in good condition. Mr. Taylor was second, and Mr. R. Richards third. Anemone-flowered sorts were well represented, the first prize lot shown by Mr. E. S. Cole being particularly good. Among these the best were Gluck, Ratapoi, Madame Bertha Pigny, Lady Margaret, and Fabian de Médiana. Messrs. Clibran and Son were second, and Mr. Baylis third. Mr. E. S. Cole was well first with twelve Japanese varieties, these including grand blooms of Madame Lacroix, Fimbriatum, Japonaise, Belle Paule, Fanny Bouchard, Gloriosa, Jeanne Delaux, Comte de Germiny, Fair Maid of Guernsey, and Val d'Andorre. Mr. Iggulden was a good second, and Mr. E. Miller third. The first prize for eighteen blooms shown with foliage was won by Mr. E. S. Cole, the second going to Mr. J. Hobbs; and the prizewinners with twelve incurved in four colours were Messrs. J. Baylis, E. S. Cole, and Clibran. Near the Chrysanthemum blooms Messrs. Cooling & Son had a surprisingly good lot of Roses cut from outside plants, and also a showy stand of Zonal Pelargonium blooms. Spikes of cut blooms of Mignonette White Perfection were shown by Mr. W. Bannister, and this distinct seedless variety is worthy of general culture.

FRUIT.—There were five good collections of six dishes of fruit shown, Mr. Ellicott, gardener to H. W. Tugwell, Esq., Bath, taking first prize with fine Lady Downe's and Muscat of Alexandria Grapes, Victory of Bath Melon, Beurré Diel Pear, Blenheim Orange Apples, and Red Currants. Mr. W. Nash, gardener to the Duke of Beaufort, Badminton, was a good second, his over-ripe Melon spoiling his chance for first place, and Mr. Iggulden was a creditable third. Several collections of four bunches of Grapes in not less than two varieties were shown. Mr. W. Taylor, gardener to Alderman Chaffin, Bath, was first, having fine bunches of Gros Colman and Alicante somewhat disfigured by dust. Mr. Nash was second with good Alicante and Muscat of Alexandria, and Mr. Iggulden third, the latter having good Alicante and Gros Colman. In a large class for three bunches of any black Grape Mr. Iggulden was easily first, staging three fine bunches of Alicante, weighing in the aggregate about 12 lbs. and well finished. Mr. Nash was a good second with the same variety, and Mr. T. Adlum, gardener to Mr. E. G. Peacock, was third, also with Alicante. Mr. Ellicott was easily first with three fine bunches of Muscat of Alexandria, and Mr. W. Bannister, gardener to H. St. Vincent Ames, Esq., Bristol, second. Pears were extensively shown as usual and included many fine fruits. Mr. Bannister had the best six varieties, these consisting of fine examples of Beurré Diel, Duchesse d'Angoulême, Doyenne Boussoch, Pitmaston Duchess, Beurré Clairgean, and Huyshe's Princess of Wales; Mr. H. Lord, Bath, was second, and Mr. D. Williams, gardener to Lord Wimborne, third. Mr. G. Fynn had the best four varieties, these consisting of handsome examples of Duchesse d'Angoulême, Van Mons, Prince Imperial, and Pitmaston Duchess; Messrs. D. Evrey & Son were second and Mr. A. Cole, gardener to F. W. Dunn, Esq., third. One dish of Pears was a popular class. Mr. J. Pollard was first and Mr. Iggulden second, both with good Marie Louise, and Mr. W. Marsh third with very fine Prince Imperial. Mr. E. Hall was first with six varieties; second Mr. J. Southard, and third Mr. W. Bannister, the last mentioned having the prettiest lot. Cox's Orange Pippin, King of the Pippins, Ribston Pippin, Blenheim Orange, and Cornish Gildflower were the best represented sorts. Mr. E. Thomas, Bristol, was first for four varieties; Mr. J. Long, Bath, second, and Mr. T. Evrey third. Culinary varieties were also well shown. Pound Pippin, Blenheim Orange, Royal Kentish Pippin, Reinette du Canada, Newtown Pippin, and Warner's King being very fine. Mr. E. Thomas was first for four varieties; Mr. J. Weston second, and Mr. E. Hall third, Mr. Williams, Canford Manor, exhibited a remarkably fine fruit of Apple Mère de Ménage weighing 20 ozs., and Messrs. R. Smith & Co., Worcester, had a very fine assortment of about sixty varieties of Apples and Pears, these comprising most of the best sorts in cultivation. Vegetables were also well shown by Messrs. E. Fisher, T. Evrey, and W. Burridge, gardener to S. Butler, Esq.

PORTSMOUTH.—NOVEMBER 11TH AND 12TH.

UNTIL visiting this famous seaport we had regarded the Drill Hall at Kingston as one of the largest and most convenient structures for the purpose of a Chrysanthemum show, but the new Drill Hall at Portsmouth would hold three such buildings as the one at Kingston, and it is not easy to conceive any edifice better adapted for the purpose to which it was devoted on the occasion in question. So large is it that there was ample room between the five rows of tabling, and the groups round the sides of the hall, for vans to drive "all over the place" and convey the plants to their allotted positions. But capacious as the building is, it was not too large, for the directorate make a point of compelling the multitude to come in by fixing the charge for admission at a penny after a certain hour on the second day. Last year 6000 persons were in the hall at one time, £20 being received in pennies, which were taken away in barrowloads. This is the most complete example of popularising a flower show that has come under our notice. A spirited as well as a liberal policy also obtains here. The £25 challenge cup and the money prizes appended represent the greatest value that has ever been offered in one class for Chrysanthemums. The seven collections staged in this class formed a show in themselves. Mr. E. Molyneux was in full force and in his old form. His employer being one of the "county families," and withal generous and good, it was appropriate that his products should be represented. Mr. Molyneux not only won the cup "in a canter,"

but was first in every class in which he exhibited, except one, and in that the shade of inferiority, if it existed, was so misty that it must have been difficult to find. Mr. Molyneux also won the prizes offered for the best incurved and best Japanese blooms in the Show with magnificent examples of Empress of India and Thunberg, both in the "cup" stands, his blooms throughout being characterised by the good size and high finish for which the exhibitor is famed.

Cut blooms were well represented, about 1600 being staged. Seven competitors staged blooms in the cup class, making in all an imposing display. Mr. E. Molyneux, gardener to W. H. Myers, Esq., Swanmore Park, Bishops Waltham, was an easy first. His flowers throughout were not of extra large size, but were characterised by being full, fresh, of good colour, and admirably staged. The incurved were deep and solid, while the "finish" left nothing to be desired; the Japanese stand contained flowers of the same character, being bright and fresh, and the flowers full and true in character. The names were, commencing at the left of each row—Madame C. Audiguier, full; Boule d'Or, rich, a fine flower; Val d'Andorre, deep; Comtesse de Beauregard, Thunberg, very fine; Meg Merrilies, large. Second row—Fair Maid of Guernsey, M. Delaux, Mdle. Lacroix, Marguerite Marrouch, rich; Maiden's Blush, and L'Adorable, a deep flower of a beautiful shade of colour. Front row—Grandiflorum, M. J. M. Pigny, Martha Harding. Peter the Great, Japonaise, deep, and M. Burnet. Incurved.—Back row—Golden Empress, rich; Princess of Wales, beautiful in form; Emily Dale, Queen of England, deep; Lord Alcester, fine; Empress of India, grand. Middle row—Alfred Salter, Lord Wolseley, Jeanne d'Arc, Prince Alfred, Princess Teck (neat), Mrs. Howe. Front row—Princess Beatrice, Lady Hardinge, Baron Beust, Nonpareil, Mr. Brunelles, fine; Hero of Stoke Newington. Mr. W. Russell, gardener to Dr. C. F. Lecois, Linsteadfield, was second; his flowers throughout were much smaller, but neat and fresh, his best being Madame C. Audiguier, Mdle. Lacroix, Marguerite Marrouch, Princess of Wales, and Jeanne d'Arc. Messrs. W. & J. Drover, nurserymen, Fareham, were third, having good Japanese, but the incurved were stale; fourth, Mr. C. Penford, gardener to Sir F. Fitzwygram, Bart, Leigh Park, Havant, good Japanese, but the incurved were small. For twelve Japanese, distinct, Mr. Molyneux was again first, staging flowers similar in character to the cup class, the best being Boule d'Or, Meg Merrilies, Japonaise, and Maiden's Blush. Mr. R. Woodgine, gardener to Captain Boyd, Havant, was second, showing Triomphe de la Rue des Chalets in capital condition, Baronne de Prailly rich in colour, and Dr. Masters. Third, Mr. C. Hoskins, gardener to J. Wilder, Esq., Stansted Park, Emsworth, staging fresh flowers, but smaller in size. The best twelve incurved were also from Mr. Molyneux. Mr. Woodgine was second with large but rough specimens. Third, Mr. Hawkins, gardener to L. Reynolds, Esq. Mr. Woodgine with twelve reflexed in eight varieties was placed first after a long consideration by the Judges. He had enormous blooms of Golden and Pink Christine, Cloth of Gold, and very fine Cullingfordi. Mr. Molyneux had smaller but even flowers. Third, Mr. Russell. Twelve Anemone blooms, Japanese varieties not admissible, were very finely staged by Mr. Penford, Lady Margaret, Gluck, and Empress being best. Second, Mr. Hoskins. Third, Mr. W. Roberts, gardener to E. R. Longcroft, Esq., Havant. Mr. Molyneux was first for six Japanese Anemones with deep full blooms of Fabian de Mediana, Mdle. Cabrol, and Souvenir de l'Ardenne. Messrs. Drover Bros. second, third Mr. Hoskins. Mr. Russell had the best Pompons, Marabout and President being fine. Second Mr. H. Snook, third Mr. Hoskins. Amateurs showed some capital stands both in the Japanese, incurved, and reflexed classes, the Rev. S. Wells, Havant, taking the lead in the former, while Mr. J. Leng proved superior in the latter class. Cottagers showed some wonderful flowers, too, considering the difficulties to contend with in a busy town. For the most elegant glass stand or epergne dressed with Chrysanthemums and other flowers (ladies only), Mrs. Penford was awarded the first prize with a bright yet light arrangement. Second, Mrs. F. Bishop.

The best group of Chrysanthemums in a space of 50 square feet was arranged by Mr. G. Kimher, gardener to the Portsmouth Asylum Committee. The plants were rather too tall for the purpose, but fine blooms were staged, making by far the best group amongst thirteen competitors, which is something considerable. These arranged around the sides of the ball had quite an imposing effect. Second, Mr. H. Gale, gardener to W. H. Frye, Esq. The plants in this collection were also too tall, still fine blooms were staged. Third, Mr. C. H. Kingswell, gardener to Admiral Hopkins. The best specimen plants were staged by Mr. C. Penford, consisting of incurved, Japanese, and reflexed varieties. 3 to 4 feet over, freely flowered. Second, W. G. Lambert, Esq., who put up much smaller specimens. Pompons were staged in a natural manner and were freely bloomed. Amateurs came in strong force in this section likewise. Mr. W. Moseley, gardener to J. Taplin, Esq., Havant, had the best table plants in a large competition; Mr. Hoskins the best Primulas double and single mixed.

Mr. Penford had the best black Grapes amongst eight competitors, staging Alicante, fine in bunch and berry and grandly coloured. Second, Mr. E. Smith, gardener to Mrs. Learmouth, Havant. Third, Mr. Hoskins. Mr. Chalk, gardener to J. Read, Esq., had the best white Grapes, very fine bunches, well coloured, of Muscat of Alexandria, followed by Mr. Penford. Mr. Roberts staged the best Pears, while Mr. E. Smith put up the best Apples. The best collection of vegetables in eight distinct varieties was staged by Mr. Hoskins, he having fine Leeks, Tomatoes, and Cauliflowers. Second, Mr. E. Smith.

Mr. F. Power, the courteous Hon. Secretary, fully merited praise by the able, energetic manner in which he managed the affair, assisted by the members of the Committee.

BURY ST. EDMUNDS—NOVEMBER 11TH AND 12TH.

THE Chrysanthemum Show in connection with the Bury and West Suffolk Horticultural Society, which was last year substituted for the usual autumn Show, now bids fair to become an annual event. The second Exhibition held at the Corn Exchange on Thursday and Friday was very satisfactory. In almost every class a considerable improvement is seen in the quality of the exhibits, the number of which is also in excess of the first Show. This improvement was particularly noticeable in the cottagers' classes. The arrangements of the Show were admirably carried out by the Committee, and the indefatigable Secretary, Mr. Peter Grieve, and the result of their efforts was a most attractive exhibition.

The principal prizes were awarded to the following exhibitors:—Fruit classes: Mr. Bird, gardener to the Rev. H. S. Hawkins, Beyton; Mr. Tuck, gardener to Lady Gage, Hengrave; Mr. Bishop, gardener to R. Burrell, Esq.; E. J. Oliver, Esq.; Mr. Smith, Culford; and Mr. Fish. With Chrysanthemums Messrs. Bishop, Nohle, Andrews, Manning, Bird, and Pettitt were the most successful competitors.

WALTON AND WEYBRIDGE.—NOVEMBER 11TH.

THE twelfth annual Exhibition of the above Society, held at the Town Hall, Walton, was in every way a great success, the Hall being filled to overflowing with fine specimen plants and cut blooms of high merit. The dwarf-trained specimens were arranged and formed two grand banks at each end of the hall, backed up by the trained pyramids, which made a very imposing effect on entering, the sides being filled with small groups, standards, and other specimen plants.

In the class for six trained specimens, for which a silver watch was offered for the first prize, Mr. Reed, gardener to E. Pettitt, Esq., Oaklands Park, won with a collection remarkable for the high finish and excellent quality of examples of the following varieties:—Prince of Wales, Mr. Corbay, Chevalier Domage, Christine, Golden Christine, and Dr. Sharp. Mr. Plowman, gardener to C. L. Lavers-Smith, Esq., was second with an excellent collection; and Mr. Reeves, gardener to W. Hewitt, Esq., Oaklands, third with smaller but well grown plants. For four standards Mr. Cawte, gardener to D. Brand, Esq., Walton, was first with good, well trained, and remarkably well furnished plants. Mr. Millican, gardener to H. Cobbett, Esq., Walton, was second with plants with good heads of blooms trained somewhat freer but rather too loose. Mr. Plowman was third in a good class. For two trained pyramids the prizes were awarded to Messrs. Plowman, Millican, and Cawte in the order of their names for very effective plants. Mr. Cawte was first for a single specimen, dwarf trained, with Mrs. Dixon, Mr. Reed second with Chevalier Domage, and Mr. Millican third with George Glenny.

In the class for four dwarf-trained Pompons Mr. Plowman was first with good well-flowered plants, Mr. Reed second, and Mr. Millican third; and in the corresponding class for four standards Mr. Plowman was first and Mr. Millican second with excellent plants. In the class for two pyramids the prizes were awarded to Messrs. Plowman, Millican, and Reed in the order of their names. For a single dwarf specimen Mr. Plowman was first with an effective plant of a small Anemone, Mr. Reed second with a good plant of Golden Mdle. Marthe, and Mr. Millican third. The class for grafted plants has always been a feature at Walton Show, but this year there was only one exhibitor, Mr. Millican showing two plants worked with three varieties, and gaining the first prize. The prizes for small groups of untrained plants were awarded to Messrs. Reeves, Hopkins, and Reed for groups of good quality and effectively arranged. All the other minor classes for plants were well filled, and the competition very keen.

CUT BLOOMS.—In the open class for twenty-four incurved cut blooms, distinct, Mr. Carpenter, gardener to C. J. Abbott, Esq., Walton, put up a good stand of solid well-finished blooms, and was awarded the first prize. Mr. Plowman was second, and Mr. Gardener, gardener to R. H. Turner, Esq., Walton, third, both showing well considering the bad season. In the corresponding class for twenty-four incurved confined to the locality the prizewinners were reversed, Mr. Plowman taking first place, Mr. Carpenter second; the third prize being awarded to Mr. Harvey. In the class for twelve incurved Mr. Thorne, gardener to A. E. Flood, Esq., was placed first; Mr. Doyle, second; and Mr. Quartermaine, third. The prizes in the reflexed class were well contested, some remarkably fine blooms being staged, Mr. Carpenter gaining the first place; Mr. Plowman, second; and Mr. Millican, third.

As is usual at most exhibitions the competition was strong in the Japanese classes. In the large class for twenty-four, distinct, Mr. Carpenter was first; Mr. Plowman, second; and Mr. Harvey, third. In the smaller class for twelve the stands were very close, the prizes falling to Mr. Reeves, first; Mr. Quartermaine, second; and Mr. Turner, third. For twelve Anemones Mr. Carpenter was first, Mr. Plowman second, and Mr. Millican third. For twelve varieties of Pompons, triples, disbudded blooms, Mr. Plowman was first; Mr. Millican, second; and Mr. Reed, third; and in the class for twelve Anemone Pompons Mr. Plowman was first, Mr. Millican second, and Mr. Doyle third, both the classes being remarkably good. The classes for six of one variety, incurved and Japanese respectively, were well filled, the prizes being shared by the exhibitors already named. The arrangement of such a large number of exhibits in the somewhat limited space was no small task, and reflected great credit on Mr. Masters, the energetic Secretary, and the gentlemen of the staging Committee for the effect produced, the general opinion being that the present one is the finest exhibition they have ever had. The Judges were Mr. Woodgate, Kingstou, Mr. Foster, Esher, and—C. ORCHARD.

RICHMOND.—NOVEMBER 11TH AND 12TH.

THOUGH somewhat smaller than the preceding shows held in the Castle Hotel at Richmond, the quality of the exhibits was admirable, and the competition in the principal cut-bloom classes very satisfactory. The Honorary Secretary, Mr. J. H. Ford, is aided by a very practical Committee, the success of the Society being largely due to their united labours. The Show was opened by Princess Mary Duchess of Teck, and though the weather proved most unfavourable, there was a fair attendance of visitors.

The principal class for cut blooms was that for thirty-six distinct varieties, eighteen incurved and eighteen Japanese, the prizes being £6, £4, and £2, but there were only three competitors. Mr. E. Coombs, gardener to W. Furze, Esq., Roselands, Broom Road, Teddington, had medium-sized blooms, fresh and bright, of the following varieties:—Incurved, back row: Golden Empress of India, Lord Alcester, Queen of England, Lord Wolseley, Empress of India, and Emily Dale. Middle row: Prince of Wales, Princess of Wales, John Salter, Jeanne d'Arc, Jardin des Plantes, and Prince of Wales. Front row: Mr. Bunn, Lady Slade, White Beverley, Baron Beust, Cherub, and White Venus. Japanese, back row: Madame C. Audiguier, Val d'Andorre, Mdle. Lacroix, Sultan, La Triomphante, and Baronne de Prailly. Middle row: L'Ebouriffe, Meg Merrilies, M. Delaux, Japonaise, Flamme de Ponce, and Curiosity. Front row: M.

Burnet, Duchess of Albany, Boule d'Or, Madame J. Laing, Mdle. Moulise, and M. Tarin. Mr. Sullivan, gardener to D. B. Chapman, Esq., Downshire House, Roehampton, was second, his Japanese being extremely fine; and

varieties, in which Mr. E. Coombs took the premier position for compact blooms of the following arranged in this order—Back row : Golden Empress of India, Queen of England, Empress of India, Lord Wolseley, Empress of



FIG. 64—KINGSTON CHRYSANTHEMUM SHOW. (See page 460.)

Mr. W. Bates, gardener to Mrs. Meek, Poulett Lodge, Twickenham, was third for a bright, clean collection.

A class was provided for twenty-four incurved, not less than eighteen

India, Princess of Wales, Lord Wolseley, and Golden Empress of India. Middle row : Princess of Wales, Prince Alfred, Jardin des Plantes, Jeanne d'Arc, Prince Alfred, Lord Alcester, Queen of England, and John Salter.

Front row: Baron Beust, Novelty, Lady Hardinge, Prince of Wales, Mr. Bunn, Cherub, Refulgence, and Pink Venus. Mr. M. Sullivan and Mr. J. Carter, gardener to H. J. Parry, Esq., Heatbide, Wimbledon Common, followed in the order named. Mr. G. King had the best twelve incurved, beautiful blooms, a corner specimen of Lord Alcester being remarkably fine. Mr. Munro, gardener to E. D. Paul, Esq., Cambridge House, Twickenham, was second with smaller blooms. For six incurved Mr. Benson was first, Mr. C. Slade second, and Mr. J. Carter third.

The entries in the class for twenty-four Japanese, not less than eighteen varieties, included some very fine blooms, especially those from Mr. G. King, which were awarded the first prize. In this stand the following varieties were represented by large highly coloured blooms. Back row—Madame C. Audiguier, Soleil Levant, Val d'Andorre, Boule d'Or, Madame C. Audiguier, Criterion, Baronne Prailly, and Comte de Germiny. Middle row—Bronze Dragon, Meg Merrilies, Japonaise, Baronne de Prailly, Flamme de Punch, M. Astorg, Yellow Dragon, and M. Burnet. Front row—M. Burnet, Triomphe de la Rue des Chalets, F. A. Davis, Joseph Mahood, Elaine, Garnet, Arlequin, and Japonaise. Mr. J. Munro was a close second with large but rather looser blooms, and Mr. J. Child, gardener to Mrs. Slade, Claygate, Esher, third for a handsome collection. Mr. C. J. Waite had a good stand of twelve Japanese, fresh young blooms of good substance; Val d'Andorre was wonderfully fine in this stand. Mr. J. Munro was second with large but rather looser blooms, and Mr. Benson third. Mr. G. King led with six Japanese, Mr. J. Carter being second, and Mr. Slade third.

Mr. J. Child was accorded the chief place for twelve Anemone-flowered varieties, having excellent blooms of Fabian de Mediana, Madame Berthie Pigny, Madame Clos, Madame Cabrol, Sœur Dorothee Souille, and Minnie Chate. Mr. J. Woodgate, gardener to Lord Wolverston, Warren House, Kingston, was a very close second, his blooms of Empress, Gluck, Lady Margaret, and Souvenir de l'Ardene being handsome. Mr. C. Slade was third also with good blooms. In other classes Messrs. A. Nagle, Wallace, Minett, and G. Walker took prizes. Mr. G. King had the best six blooms of one Japanese variety, fine examples of Japonaise; Mr. Munro being first in the corresponding class for incurved with Golden Empress of India of capital size and substance. Mr. C. Slade and Mr. T. A. Benson were successful competitors in other special classes.

The groups of Chrysanthemums were good, but not quite so numerous as usual. Mr. J. Rorke, gardener to J. B. Hilditch, Esq., Asgill House, took the lead with a very even, bright, and effective arrangement, the front plants dwarf, and all bearing large handsome blooms. Mr. J. Walche, gardener to J. Bigwood, Esq., The Lawn, Twickenham, was second with much dwarfier plants, but remarkable for the size of the blooms. A front plant of Val d'Andorre had three grand blooms. Mr. W. Campin, gardener to J. Cave, Esq., Queensberry House, was third; Mr. J. Cooper, gardener to T. Cartwright, Esq., The Wilderness, being fourth. Six superb specimens gained Mr. G. King, gardener to Mrs. Fen, Wolsey Grange, Esher, the first prize in their class, the plants being 5 feet in diameter and well flowered; the varieties were Mrs. G. Rundle, Prince of Wales, Mrs. Haliburton, John Salter, Lady Hardinge, and Mrs. Dixon. Mr. H. Elliott, gardener to Mrs. L. Harrison, Leyden House, Mortlake, was first for three standards, well-trained examples of Mrs. Dixon, Mrs. G. Rundle, and Mr. G. Glenny.

Sir J. Whittaker Ellis, Bart, M.P. offered prizes for a group of plants arranged for effect, which brought several beautiful contributions. Mr. S. Osborn, gardener to the Earl of Fife, East Sheen, was first with a tasteful group, the base of Adiantums and margin of Selaginella, with Palms, Crotons, Oncidium amplexatum and ornithorhynchum, Cypripediums, Calanthes, Bonvardias, and Primulas interspersed. Mr. Fittell, gardener to G. R. Geaves, Esq., Hatfield House, Cambridge Park, was second with a group similar to that with which he was first at Kingston.

The special prize offered by J. Field, Esq., for a basket of plants was won by Messrs. Hooper & Co., who had an extremely graceful arrangement. The central plant was a fine Cocos Weddelliana surrounded by Asparagus plumosus, Plumbago rosea, Oncidium amplexatum, Gesneras, Anthuriums, Crotons, and White Carnations in a base of Bouvardias, Ferns, Panicums, and Isolepis. Mr. Bates was a good second, Plumbago rosea and Dendrobium nobile being freely used. Messrs. Hooper & Co., Twickenham, were first with six table plants, showing neat plants of Croton Lord Derby, Thrinax elegans, Odontoglossum Alexandræ, Aralia Veitchi gracillima, Croton Evansianus, and Kentia Belmoreana. Mr. Sullivan, gardener to D. B. Chapman, Esq., Downshire House, Roebampton, was second with larger plants, and Mr. J. R. Chard, Brunswick Nursery, Stoke Newington, third. Berried plants were shown by Mr. H. Elliott, Mr. G. King, and Mr. A. Newell. A pretty group of Orchids was shown by H. Little, Esq., The Barons, Twickenham, comprising a superb variety of Lycaste Skinneri with intensely deep crimson petals and a white margined lip. Lælia Perrini was very fine, also Lycaste Smeeana, Cypripedium Spicerianum, Lælia elegans, Oncidium macranthum hastiferum, Cypripedium Haynaldianum and Oncidium Papilio majus.

Mr. J. R. Chard, Stoke Newington, won the Duchess of Teck's prize for three vases of flowers tastefully adorned with a few Chrysanthemums at the base, Begonias, Bouvardias, and Primulas at the upper portion, with Lygodium scandens twining round the stem. Mrs. Bagot's prize for a vase of Chrysanthemums and Ferns was won by Mr. W. Bowell, gardener to Lady Parker, Stawell House, with a very effective stand. Miss Fanny Bowell had the best stand of Ferns, grasses, and berries; Miss Rachel Bowell being second. Miss C. R. Little was first for six buttonhole bouquets, Tuberoses and Violets, one Odontoglossum Alexandræ, Roses, and Oncidium; Miss E. Rydson was second and Miss R. Bowell third. Miss C. R. Little was also first for vase of flowers and foliage. Mr. J. R. Chard won first honours for a hand bouquet (Messrs. J. & G. Pearce's prize), showing a light and graceful combination of white and pink Camellias, Tuberoses, white Bouvardias, Roman Hyacinths, and white Lapagerias with Ferns.

In the fruit classes Mr. Bates was first with six dishes, his Grapes, Apples, and Pears being all good. Messrs. Campin and E. Coombs followed. Mr. Bates also won Lady Parker's prize for the same number of dishes, including a well grown Pine Apple; Mr. W. Davies being second. With black Grapes Messrs. F. Barnes, O. Hiehle, gardener to W. Cunard, Esq., Orleans House, Twickenham, and W. Campin were prizewinners, the best white Grapes coming from Messrs. O. Hiehle, W. Bates, and W.

Campin. Mr. J. R. Laing, Twickenham, had a stand of Chrysanthemums, and Mr. Coombs a collection of Pompon Anemones.

Vegetables were represented by several clean collections, Mr. C. J. Waite being first with six varieties, comprising Cauliflowers, Leeks, Potatoes Onions, Wroxton Sprouts, and Carrots. Mr. C. Garrod and J. Coombs were second and third with neat collections. Mr. O. Hiehle had the best dish of Tomatoes Ne Plus Ultra, large heavy fruits, Mr. W. Bowell being second with a variety named The King, a flat round even and highly coloured, variety. Mrs. H. B. Smith, Ealing, contributed some very choice bouquets, wreaths, crosses, and baskets of flowers, which were much admired.

SALISBURY.—NOVEMBER 11TH AND 12TH.

As a result of letters written to the local papers by Dr. F. W. Coates and Mr. H. W. Ward, the middle of last month, a most successful Chrysanthemum and Fruit Show was held in the Council Chamber by permission of the Mayor (Mr. F. Griffin) on the dates given above. It was the first Show of the kind held in the Cathedral City of Wiltshire, and the Committee and its indefatigable Hon. Secretary (Mr. W. H. Williams, of the firm of Keynes, Williams & Co.) are to be congratulated upon the success of their efforts to establish a Chrysanthemum and Fruit Show in connection with the Wilts Horticultural Society in Salisbury. Although the weather was very unfavourable on both days the attendance was good, and great interest was evinced by those present. Two classes were provided in the schedule for groups, one (to consist chiefly of Chrysanthemums) to occupy a space not exceeding 10 feet by 6 feet, and the other (of miscellaneous plants) arranged for effect in a half-circle, space not to exceed 8 feet by 5 feet. These, fifteen in all, were tastefully arranged in the large banqueting-room, in which Messrs. Britain & Son, of the Waterloo Nursery, Salisbury, had two effective groups, not for competition; whilst Messrs. Keynes, Williams and Co.'s contribution of well-flowered plants made a grand display in the entrance hall. Dr. F. W. Coates was first for a group of Chrysanthemums; the plants were well flowered and the blooms large and fresh; Mr. James Chalk, gardener to Mr. G. Read, Salisbury, and Mr. A. Curtis, gardener to Mr. C. H. Radcliffe, being equal second; and Mr. Fred Smith, gardener to the Lord Bishop of Salisbury, and Mr. J. W. Lovibond, were awarded equal third prizes, all for tasteful groups. In the corresponding class for groups of miscellaneous plants Mr. E. L. Brown, Portland Place, Salisbury, was a good first. His group contained well-flowered Callas intermixed with Chrysanthemums and tall Ferns in the background, in which was a fresh well-flowered plant of Epiphyllum truncatum violaceum, Pelargoniums, Cypripedium insigne, &c., fringed with Maidenhair Fern. Mr. Curry, gardener to Colonel Pepper, Elm Grove, Salisbury, was a good second with similar plants, but being placed too closely together the arrangement was heavy. Mr. Thornton, gardener to Mrs. Greenwood, Harnham, was third. Five classes were provided for plants, ranging from two to four, but these call for no special mention.

CUT BLOOMS.—Seven classes were provided for these, the first being for twenty-four blooms, not less than nine incurved and nine Japanese, distinct varieties. First Mr. H. W. Ward, gardener to the Right Hon. the Earl of Radnor, Longford Castle, with good, even, fresh blooms, the best being Triomphe de la Rue des Châlets, Mdle. Lacroix, M. Burnet, Thunberg, Boule d'Or, Fair Maid of Guernsey, Comte de Germiny, and Comtesse de Beauregard (Japanese); and of incurved varieties Empress of India, Nil Desperandum, Mr. Bunn, Lord Alcester, Jeanne d'Arc, Prince Alfred, and Mr. Brunelles. Mr. Charles Warden, gardener to Sir F. H. Bathurst, Bart., Clarendon Park, was a good second, his Boule d'Or being very fine, Mr. Fred Thompson, Norman Court, Dean, being awarded a certificate of merit. Mr. Ward was the only exhibitor of twelve incurved varieties, and he secured first prize for a good stand, as he also did in the class for six incurved blooms, Mr. Marlow, gardener to Mrs. Paxton, Cholderton, Salisbury, being second. Mr. Ward was again first with twelve blooms of Japanese, not less than nine varieties; Mr. C. J. Witcomb, Elm Grove, was second, and Mr. Warden third, Mr. Ward and Mr. Marlow being first and second respectively for six Japanese. Mr. Ward was again first in the two classes for reflexed and Anemone-flowered varieties, showing in every class good blooms of the leading varieties.

The prizes in the ladies' classes were well contested. Miss Kate Lovibond, Salisbury; Miss E. Burt, Minor House, Wintbourne Dauntsey; and Miss M. Brown, Portland Place, Salisbury, were respectively first, second, and third for hand bouquets with good arrangements. Miss Lovibond was again to the front for a basket of flowers, foliage, berries, &c., Mrs. S. R. Atkins, Elm Grove, being second, and Miss E. Burt third. Miss M. Brown, Miss E. Burt, and Miss L. Lovibond were first, second, and third in that order for three gentlemen's buttonholes, a bud of Niphetos Rose being very much admired in the centre one of the first-prize trio. Miss E. Burt was the only exhibitor of a lady's spray, for which she was deservedly awarded first prize.

FRUIT.—Fruit was well shown and of good quality in the seven classes devoted to it. Mr. Ward was the only exhibitor of a collection of six kinds, and was awarded first position for good fruits, consisting of Queen Pine, Muscat of Alexandria, and Mrs. Pince's Black Muscat Grapes, a highly coloured and prettily netted Melon (Longford Perfection), Chaumontel Pears, and highly coloured fruits of Cox's Pomona Apple. Grapes: There were four classes provided in the schedule for these. Mr. Warden was a good first out of three competitors for two bunches of Alicante, showing compact, well-finished, and heavily bloomed bunches. Second, Mr. W. Marlow, Castle Street, Salisbury, and Mr. E. L. Brown were third. Mr. Warden was also first out of a like number of competitors for two bunches of Muscat of Alexandria, showing good bunches of large, clean, and well-coloured berries. Second, Mr. E. L. Brown, and Mr. James Chalk were third. Mr. Warden was again to the front for any other black Grape than Alicante, showing fine examples of Gros Maroc. Second, Mr. Ward, with large compact bunches of Gros Guillaume, but slightly rubbed; and Mr. E. L. Brown was third, showing small, but well-coloured (especially one bunch) of Gros Colman. Mr. Ward was an easy first for any other white than Muscat of Alexandria, with fine highly coloured bunches of Trebbiano. Mr. Ward staged, not for competition, three large bunches of Mrs. Pince's Black Muscat, a like number of bunches of Gros Guillaume, including one over 8 lbs., shown in a glass case, and a couple of bunches of Muscat of Alexandria. Mr. Warden also staged four good bunches of

Muscats, Alicante and Gros Colman, not for competition. Apples and Pears were well shown. Mr. C. W. Gater, Oakley, Milford, had the best three dishes of dessert Apples in Blenheim Pippin, Lemon Pippin, and Ribston Pippin. Mr. Hinksman, gardener to H. G. Gregory, Esq., was second best, and Mr. Ward third. Mr. Fred Smith was first for three varieties of cooking Apples, showing fine specimens of Cox's Pomona, Bedfordshire Foundling, and Blenheim Pippin. Mr. F. Thompson was first for three dishes of Pears, showing fine examples of Marie Louise, Pitmaston Duchess, and Duchesse d'Angoulême. Mr. Ward showed several dishes of Apples, Medlars, and Pears, not for competition, nine fruits of Uvedale's St. Germain Pear weighing nearly 11 lbs. The fruit and cut flowers were staged in the Grand Jury room, and made quite a good display: but next year, if a more liberal prize schedule be provided, we may expect to see better competition in the cut bloom classes.

LINDFIELD, SUSSEX.—NOVEMBER 11TH AND 12TH.

THE annual Chrysanthemum Show was held on Thursday and Friday, when, notwithstanding the very unfavourable weather, there was a good attendance. The Show was managed by a committee of gardeners, &c., of which Mr. A. J. Brown is Chairman, and Mr. Larter Hon. Sec. The cut flowers and groups were exceptionally good; special prizes were given by Messrs. Sutton & Son for vegetables, Messrs. Cheal & Son for Pears, Messrs. Laing & Co. for Apples, Mr. Davis for best bloom of Chrysanthemum, and Mr. Balchin for Grapes. The thanks of the Committee are due to the above-mentioned nurseryman.

The principal competitors were Mr. J. Hodges, gardener to S. C. Gibbons, Esq., Halstead House; Mr. T. Venn, gardener to W. Sturdy, Esq., Paxhill Park; Mr. A. J. Brown, gardener to W. Savill, Esq., Finches, Lindfield; Mr. Horscroft, gardener to Mr. Potter, Ardingley, &c., &c. The prizes were awarded as follows:—Group arranged for effect in a space not exceeding 45 square feet. Mr. Hodges was placed first, having some good blooms. Mr. Brown was a very close second, having much more flower and a more formal group, but not quite so large. Third Mr. Braysher, fourth Mr. Horscroft, fifth Mr. Kemp. Group for single-handed gardeners and amateurs:—First Mr. R. Durrant, second Mr. Brookes. Two best plants Japanese:—First Mr. Scutt, second Mr. Horscroft, third Mr. Brown. Incurred:—First Mr. Scutt. Best trained plants:—First Mr. Scutt, second Mr. Brookes, third Mr. Kent.

Twenty-four cut blooms—twelve Japanese, twelve incurred.—First Mr. Gibbins, gardener to Mr. Evans, The Chalet; second Mr. Hodges, third Mr. Venn. Twelve Japan se.—First Mr. Gibbins, second Mr. Hodges, third Mr. T. Venn. Twelve incurred.—First Mr. Hodges, second Mr. Horscroft, third Mr. T. Venn. Twelve blooms—six Anemone, six reflexed.—First Mr. T. Venn. Second Mr. Gibbins. Twelve Pompons.—Second Mr. Brown. For best bloom incurred.—First Mr. S. Horscroft, second Mr. T. Venn. Best Japanese.—First, Mr. Gibbins, second Mr. T. Venn. Table plants.—First Mr. Hodges, second Mr. Brown, third Mr. T. Venn. Six best berried plants.—First Mr. Venn, second Mr. Brown, third Mr. Brookes. Grapes.—Mr. Venn, Mr. Hodges, Mr. Horscroft. Apples in order named, six dishes.—Mr. Hodges, Mr. Venn, Mr. E. C. Kent, Mr. Brooke, Mr. Deane, Mr. E. Durrant, Mr. T. Venn, C. Kent. The cottagers' and the other exhibits, especially those for vegetables shown by gardeners and cottagers, were very creditable. The Show was the best ever held in the neighbourhood.

EXETER.—NOVEMBER 12TH.

It would be impossible to find a much more suitable room for holding an exhibition than the Victoria Hall, Exeter, and it must be admitted the fruit and plant growers in the neighbourhood were very successful in their efforts to arrange a good show. Mr. C. T. K. Roberts is the Honorary Secretary, and with him are joined a practical hard-working Committee, whose arrangements leave nothing to be desired.

No trained plants were shown, but there were two classes for groups, and three growers competed in each. The best large group was arranged by Mr. W. Rowland, gardener to W. Brock, Esq., who went to work in the same style as so well carried out at Kingston and other shows near London, and certainly succeeded admirably. The plants were dwarf, carried good foliage and blooms, and were tastefully grouped. Mr. W. Counter, gardener to M. Farrant, Esq., also had a very excellent group and took the second prize, the third prize going to Mr. Hugh Mollen, gardener to Mrs. Pouget. The last named was first for a group in which quality of bloom was of primary importance, but it was a long way behind the first prize lot in the other classes for general effect. Mr. W. Rowland was a very creditable second, better style in the grouping being very apparent. Mr. Rowland was placed first for six table plants, these including neat plants of Cocos Weddelliana, Croton angustifolium, Pandanus Veitchi, and Tenax Victoriae. Mr. G. Lock, gardener to B. W. Cleave, Esq., took the second prize for a choice pretty lot of plants, and there were other good collections shown. Mr. Rowland was easily first for Bonvardias and Mr. A. C. Williams second. The prizewinners with Primulas were Messrs. Mollen and A. C. Williams, both having good plants.

Cut blooms were considered of marked superiority to those previously shown at Exeter, and they certainly were the feature of the Exhibition. The best thirty-six incurred blooms in not less than twenty-four varieties were staged by Mr. F. Geeson, who had Lord Alcester, Golden Empress, White Venus, Empress of India, Prince Alfred, Mrs. Rundle, Refuge, Pink Venns, Mrs. Glenny, Mr. Bunn, Jeanne d'Arc, J. Salt, and other well known sorts fresh and good. Mr. W. Rowland was second, his best being Alfred Salt, Golden Empress, Queen of England, John Salter, and Princess of Wales. Mr. J. Aplin, gardener to W. M. Baker, Esq., was third, Lady Hardinge, Lord Wolseley, Empress of India, Mrs. W. Shipman, and Hero of Stoke Newington being his best.

Mr. F. Geeson was the only exhibitor of twenty-four incurred varieties, all being remarkable more for their freshness than good form, and the same may be said of the first prize eighteen varieties staged by Mr. W. Rowland. Mr. W. Wild, gardener to Mrs. Wild, was first for twelve varieties; Mr. F. Delve, gardener to F. W. Grant, Esq., second, and a third went to Mr. Rowland. Mr. Aplin won the first prize for six blooms of any incurred variety with very fine Queen of England, Mr. W. Dolling, gardener to Mrs.

Wild, the second with Jeanne d'Arc, very good; and the third went to Mr. Rowland for good Golden Empress. Mr. W. Dolling was first for six reflexed, and Mr. F. Delve second; and for six Anemone-flowered Mr. Aplin was a good first and Mr. W. Dolling second. A very fine lot of Japanese sorts were shown. Mr. F. Geeson was well first for thirty-six blooms, among them being Meg Merrilies, Marguerite, Marabout, J. Deaux, L'Adorable, Mons. Astorg, Album plenum, Mrs. Marsham, Baronne de Prailly, Mons. Burnet, Mr. Freeman, Belle Paule, and Roseum superbum. Mr. W. Rowland was a good second and Mr. W. Iggulden third, each having a good lot of blooms. Mr. F. Geeson was also first for twenty-four varieties, among which were very good examples of Baronne de Prailly, Mons. Astorg, Criterion, Japonais, and L'Adorable. Mr. W. Dolling was a close second, having good examples of well known sorts. With twenty blooms Mr. W. Dolling was well first, his Meg Merrilies, L'Adorable, Peter the Great, Duchesse of Albany, and Souvenir de Haarlem being very fresh and good. Mr. F. Delve was awarded a first prize for eighteen varieties, and Mr. W. Rowland second, the blooms being good in each instance. For six blooms in one variety Mr. J. Aplin was first with Madame C. Audiguier in fine condition, Mr. F. Delve being second with very good Fair Maid of Guernsey.

Grapes were not extensively shown, but they included several good stands. Mr. G. Teed was the only exhibitor of Muscats, and took a second prize for a rather inferior lot. The first prize for Lady Downe's was awarded to Mr. J. Langworthy, gardener to G. P. Benmore, Esq., and Mr. Lock was second, both having well-finished bunches. Mr. W. Iggulden, Marston House, Frome, was easily first for three bunches of Gros Colman, having good-sized bunches and berries creditably finished, and Mr. Lock was deservedly awarded the second prize. Mr. Iggulden was also well first for Alicante, which were much admired, and Mr. R. Pike, gardener to the Rev. H. Clerk, was a good second. Mr. Lock was the only exhibitor of a Pine Apple, and was awarded the first prize for a grand fruit of Smooth Cayenne weighing 7½ lbs.

Pears were both numerous and good, classes being provided for most of the best sorts as well as collections. Mr. W. Street, gardener to Col. Walrond, M.P., was first for Chaumontel, and Mr. A. C. Williams, gardener to W. C. Sim, Esq., second. Winter Nelis was very fine; Mr. Lock was first and Mr. J. Blackmore, gardener to C. T. D. Acland, Esq., M.P., second with these. Pitmaston Duchess was shown of great size, but presented a very bruised appearance. Mr. A. C. Williams was first, and Mr. J. Garland, gardener to Sir T. D. Acland, Bart., was second. Duchesse d'Angoulême were also large, and some were more coloured than usual. Mr. T. Gillard, gardener to R. N. G. Baker, Esq., Heavitree, was first, and Mr. A. C. Williams second. Mr. Garland was first for Glou Morceau and Mr. A. C. Williams second; with Beurré Diel Mr. Williams was first, and Mr. A. Truman second, both having fine clean fruit. The best Doyenné du Comice were staged by Mr. A. C. Williams; and Mr. Woodley, gardener to W. J. Battis-hill, Esq., was a good second. Mr. Street had the best collection of culinary Pears, and Mr. A. C. Williams was a good second. The first prize for a collection of nine dessert Pears was well won by Mr. J. Garland, and Mr. A. C. Williams was a good second, and the same positions were occupied by these exhibitors in the class for six varieties, the exhibits being most meritorious throughout. Mr. R. Staddon, gardener to Col. Courtenay, was first for four varieties, and Mr. G. Lock second. The best dish of Pears judged by flavour was the Marie Louise staged by Mr. Iggulden, Mr. Garland following with Doyenné du Comice.

A wonderfully good display of Apples was provided, and afforded strong proof that the county of Devonshire is most highly favoured. Dumelow's Seedling was a strong class. Mr. A. Truman was first, and Mr. T. Gillard second. The popular Cox's Orange Pippin was very well shown by numerous growers. Mr. T. Gillard was first and Mr. E. Drake second. Mr. Williams was first for Adams' Pearmain, and Mr. W. Street second; and the last named was first with Cornish Gilliflower, the second prize going to Mr. W. R. Baker. King of the Pippins were very handsome, and with these Mr. Iggulden was first and Mr. W. Street second. The best Ribston Pippin came from Mr. J. Enstone, gardener to Sir J. Duckworth, Bart.; and Mr. Street was second. A few good Braddick's Nonpareil were shown. Mr. Enstone was first and Mr. Garland second. Mr. Iggulden was first for Margil, and Mr. W. Street second; and with Gravenstein Mr. Garland was first and Mr. J. Hayman second. Mère de Ménage were fine and very highly coloured. Mr. G. Lock was first and Mr. G. Garland second. Golden Noble were very handsome, and with these Mr. Street was first and Mr. A. Truman second. Several good lots of Blenheim Orange were shown, Mr. J. Aplin being first for heavy examples, and Mr. R. Staddon second. Mr. J. Hayman, gardener to Mrs. Pinder, was well first for six varieties of dessert Apples, and Mr. A. C. Williams second, several others having very good collections. In the corresponding class for culinary varieties Mr. J. Aplin was first, among these being fine examples of Royal Russet, Flower of Kent, White Flanders, and Hanwell Sonring. Mr. J. Hayman was a good second. The best twelve varieties were staged by Mr. G. Lock, who had the very showy Devonshire Queen, Beauty of Wilts, Ribston Pippin, Blenheim Orange, and other serviceable sorts in excellent condition. Special prizes were offered by Messrs. R. Veitch & Son for a collection of twenty-four varieties, and for these the competition was very keen. Mr. A. Truman was first, Mr. Slade second, and Mr. J. Garland third. Among the numerous sorts shown the most noteworthy were Warner's King, Emperor Alexander, Golden Noble, Tibbet's Pearmain, Royal Somerset, Cornish Gilliflower, Red-ribbed Greening, Dumelow's Seedling, Brabant Bellefeur, Alfriston, Cox's Pomona, Gravenstein, Alexandra Russet, Cox's Orange Pippin, White Nonpareil, and Ross Nonpareil.

Messrs. R. Veitch & Son arranged an attractive group of flowering and fine foliated plants, including a lot of good Bonvardias, perpetual-flowering Caenations, Orchids, and Chrysanthemums. They also had a good stand of cut blooms of the latter, and a large and well-selected collection of Apples and Pears. On the opposite side of the hall Messrs. Lucombe, Pince and Co. had a grand group of well-grown Chrysanthemums, well backed up by tall Palms and Cordylines, and margined by numerous Orchids, Crotons, Palms, and other choice plants, as well as a large collection of Apples and Pears. Mr. G. G. Selater, Devon Nurseries, also had a grand exhibition of Apples, among which we particularly noted Hairy Morning, Annie Elizabeth, Dr. Harvey, Cox's Pomona, Beauty of Wilts, Peasgood's Nonesuch, Warner's

King, Lady Henniker, and Lane's Prince Albert. Altogether the Show was a most successful one, and well attended by appreciative visitors.

WESTON-SUPER-MARE.—NOVEMBER 12TH.

THE second Exhibition of this Society was a considerable improvement on the first attempt, more especially in the classes for cut blooms. Chrysanthemums would appear to have become rapidly popular in the neighbourhood, and it is a pleasing duty to note that all classes of society take an active interest in the promotion of a good display. Mr. W. Pain is Honorary Secretary, and with the assistance of a good working Committee arranged everything most satisfactorily. All the classes were open to all comers, and a further addition in the amount of money offered in prizes should lead to still more spirited competition. Mr. W. Brooks was easily first with six specimen plants of large-flowered varieties, staging very creditable examples of Mrs. Rundle, Mrs. Dixon, and Mr. G. Glenney, and Mr. G. Thatcher, gardener to A. G. Andrews, Esq., Wells, was second with ordinarily trained and much over-staked plants. The prizewinners with four specimens were Mr. C. Holland, gardener to W. Ash, Esq., who had fairly good plants, and was easily first; second Mr. W. Lewis, gardener to J. E. Cole, Esq.; and Mr. J. Thorne was third. Mr. W. Brooks was well first with trained Japanese plants, his best being Hiver Fleuri, Source d'Or, Margot, James Salter, Bertie Rendatler, and Fair Maid of Guernsey. Mr. C. Holland was a very good second, and Mr. Thatcher third. Mr. W. Lewis, gardener to J. E. Cole, Esq., was well first for four plants of Japanese varieties, Margot and Bertie Rendatler being very prettily shown. The best single specimen of incurved variety was staged by Mr. Brooks, and Mr. Horstman had a prize for a freely bloomed plant of Japanese Elaine. Mr. W. Hughes, gardener to H. Pethick, Esq., took a first prize for a handsome pyramid of Mrs. Rundle, and Mr. Brooks was second with the same variety; and in a corresponding class for Japanese varieties Mr. Holland was first, and Mr. Brooks second. Three collections of six stove and greenhouse plants were shown, Mr. Brooks taking first prize, Mr. C. Holland the second, and Mr. W. Lewis the third; and with six Ferns the prizewinners were Messrs. W. Brooks, C. Holland, and W. Lewis, all having good plants of well known varieties. There were three very pretty groups of miscellaneous plants arranged for effect, Mr. W. Hughes being well first, displaying excellent taste in the grouping of choice materials; Mr. Brooks was second, and Mr. W. Lewis third. The first prize for a group of Chrysanthemums was awarded to Mr. Brooks, Mr. W. Lewis being a good second, and Mr. J. Matthews, gardener to Mr. Knyton, third.

A very fine collection of cut blooms gained Mr. C. Lucas, gardener to J. Marshall, Esq., Taunton, the premier prize for twenty-four large-flowered varieties. These included perfect examples of Lord Alcester, Queen of England, Empress of India, Jeanne d'Arc, Lady Hardinge, White Venus, Lord Wolseley, Emily Dale, Mrs. G. Rundle, and Pink Venns. Mr. Brooks was second, and Mr. J. Thatcher third. Mr. E. S. Cole, gardener to W. Pethick, Esq., unfortunately included two blooms of the Japanese Salteri in his stand, and this spoilt his chance for the second prize. Mr. W. Hughes had the best twelve incurved blooms, the most noteworthy being Hero of Stoke Newington, Lord Alcester, Bendigo, Mrs. Rundle, and Empress Eugénie. Mr. R. Richards, Bristol, was second, and Mr. C. Holland third. Mr. W. Thomas, gardener to W. T. Marshall, Esq., had the first prize for six blooms, these consisting of perfect examples of Prince Alfred, Princess of Wales, Lord Wolseley, Snowball, and Lady Hardinge. Mr. Segar, gardener to W. Wilcox, Esq., Weston-super-Mare, was second, and Mr. J. Hall, Wells, third. The class for twenty-four blooms of Japanese varieties was a very good one. Mr. C. Lucas was well first, his best being Soleil Levant, Madame Ferral, Fair Maid of Guernsey, Thunberg, Japonaise, Comte de Germiny, Grandiflorum, Triomphe de la rue des Châlets, Bertie Rendatler, and J. Delaux. Mr. E. S. Cole was a close second, his best being Soleil Levant, Fair Maid of Guernsey, Madame Feral, J. Delaux, and Criterion. Mr. J. Thatcher was a creditable third. Mr. W. Thomas was easily first for twelve varieties, having grand blooms of Madame Feral, Soleil Levant, Fair Maid of Guernsey, Japonaise, Madame C. Audiguier, Triomphe de la rue des Châlets, Comtesse de Beauregarde, Coquette de Castille, L'Adorable, Comte de Germiny, J. Delaux, Boule d'Or. Mr. W. Hughes was a good second, and Mr. Richards third. Mr. C. Holland was first for six varieties. Several good stands of Anemone-flowered were shown. Mr. Thomas was well first, Mr. E. S. Cole was second, and equal thirds were awarded to Messrs. W. Hughes and R. Richards. Mr. W. Brooks was first with a handsome bouquet, and Miss Poynter, Taunton, second.

In the class for any black variety of Grapes, Mr. W. Duffurn, gardener to Mrs. Walker, Weston-super-Mare, was easily first with good Alicante, and he also staged handsome bunches of Gros Guillaume. Mr. W. Hughes was well first for four dishes of Pears, these consisting of Beurré Diel, Marie Louise, Beurré Bosc, and Urbaniste of good size and colour. Mr. W. Duffurn was a good second, and there were several other creditable lots shown. In the single dish class Mr. W. Lewis was first with good Duchesse d'Angoulême, and the Rev. Mr. Bartlett second with Beurré Diel. A pretty lot of Apples were shown, Mr. Jordan winning the first prize for four dishes, Mr. W. Hughes being a good second. Mr. J. Thorne had the best culinary varieties, and for a single dish Mr. G. Burgess was first. Vegetables were both plentiful and good, Mr. J. Tilley, gardener to Col. Colgrave, was a good first for four varieties, the remaining prizes going to Messrs. Jordan, E. Hall, and W. Hughes.

CANTERBURY.—NOVEMBER 12TH AND 13TH.

THE ninth annual Show of Chrysanthemums, &c., was held at Canterbury on the above date, and was a great success. The Chrysanthemums, of course, occupy the chief place, but fruit and vegetables were well shown, and also groups of miscellaneous plants. The Show was held in the spacious Foresters' Hall, but there was not room for all the exhibits; many of the vegetables, &c., had to be staged in a spacious marquee. Cut blooms were represented in large numbers and of good quality, and in many classes competition was very close, but the honours of the day certainly fell to Mr. E. Martin, gardener to T. G. Peckham, Esq., Hall Place, Harbledown, who carried all before him, all his blooms being of very high quality and exceptionally large, many of them in the back rows measuring 6 and 7 inches in diameter, and of corresponding depth, and those in the middle and front rows

measuring 4 and 5 inches by 3½. Fruit was well shown, especially Grapes, by Mr. Woodcock, and the collection of fruit by W. Knight and E. Dines. Vegetables were a strong feature in the Show, and competition very keen in all classes.

The chief prize for cut blooms was for twenty-four varieties, twelve incurved and twelve Japanese, open to the county of Kent. Mr. Martin was easily first with a box of grand blooms, as under:—Back row, Golden Empress, Empress of India, Emily Dale, Queen of England, Triomphe de la Rue des Châlets (very fine), Mdle. Lacroix, Japonaise (good), and Meg Merrilies. Middle row: John Salter, Guernsey Nugget, Princess of Wales (very good), Prince of Wales, Prince Alfred, Boule d'Or, F. A. Davis (good), Fair Maid of Guernsey, and Duchess of Albany. Front row: Mrs. Heale (good), Lord Wolseley, Lady Hardinge, Cherub (very good), Madame C. Audiguier, Grandiflorum, Comte de Germiny, and Garnet. Mr. Hawkes, nurseryman, Newington, was second; and Mr. Woodcock, gardener to F. Flint, Esq., third, Mdle. Lacroix and Triomphe de la Rue des Châlets being very fine in the last-named stand. For twenty-four varieties, incurved and reflexed, open to the Society, Mr. E. Martin was again first with a stand nearly if not quite equal to his box in the open class, his varieties being as under:—Back row: Emily Dale, Queen of England, Guernsey Nugget, Empress of India, John Salter, Golden Empress, Alfred Salter, Lord Alcester. Middle row: Lord Wolseley, Jardin des Plantes, Novelty, Christine, Mrs. Heale, Golden Christine, Princess of Wales (a grand bloom, which obtained the National Society's medal for the best incurved bloom in the Show), and Prince Alfred. Front row: Princess of Teck, Nil Desperandum, Mrs. W. Shipman, Jeanne d'Arc (good), Barbara (very good), Mrs. Forsyth, Hero of Stoke Newington, and Lady Hardinge. Mr. J. Woodcock was a good second with fresh, well-shaped, but smaller blooms, the best being Princess Teck, Empress of India, Emily Dale, Golden Empress, &c.; Mr. E. Hazleden, gardener to Mr. Drury, taking third honours. In the class for twelve incurved and reflexed (exhibitors in the preceding class being excluded) Mr. Kennett, nurseryman, Fordwich, was first with Cullingfordi, Lord Alcester, Enamel, Cloth of Gold, Princess Teck, Prince Alfred, Golden Queen of England, Nil Desperandum, Mr. Gladstone, Dr. Sharpe, and White Christine; Messrs. A. Elvey, gardener to Major Plummer, being second; Hickman third, and Dines fourth. In the class for twelve Japanese Mr. E. Martin was again first, but was very closely pressed by Mr. J. Woodcock, both stands being of such high quality that I have given the names in both. Mr. Martin had Meg Merrilies, Triomphe de la Rue des Châlets, Mdle. Lacroix, Japonaise, Comte de Germiny, Madame C. Audiguier, Boule d'Or, Madame Bertie Rendatler, Garnet, Album Striatum, Fernand Feral, and Grandiflorum; while Mr. Woodcock had Japonaise, Meg Merrilies, M. Tarin, Fair Maid of Guernsey, Mdle. Lacroix, Madame C. Audiguier, Madame Bertie Rendatler, Roseum Superbum, M. Delaux, M. Astorg, and F. A. Davis; Mr. E. Hazleden taking the third prize. In the class for six Japanese (exhibitors in the preceding class being excluded) Mr. A. Elvey was first with a box containing Madame C. Audiguier (which bloom also obtained the National Society's medal for the best Japanese bloom in the Show), M. Barne, Fair Maid of Guernsey, Comte de Germiny, Chinaman, and Elaine; Mr. E. Kennett being second. In the class for six Anemones Mr. E. Martin was first with Fleur de Marie, Gluck, Georges Sands, Lady Margaret, Miss Margaret, and Minnie Cuate; Mr. J. Woodcock being a good second; Messrs. Kennett and Elvey being third and fourth. In the class for six triplets of Pompons Mr. E. Martin was again first with a box of grand blooms—indeed, in some respects it was the best box in the Show, the blooms being of such high quality and size; Mr. J. Woodcock taking second prize, and Mr. Hickman third.

In class B, for amateurs only, Mr. Noble was first for twelve incurved, his best blooms being Prince Alfred, Golden Empress, Lord Wolseley, and Jeanne d'Arc; Mr. A. Nash taking second prize. In the class for six incurved Mr. W. Featherstone was well ahead with Prince Alfred (which also obtained the medal of the National Society for best incurved bloom in the amateur class), Novelty, Lord Wolseley, Beethoven, Cloth of Gold, and Lady Talford; Messrs. Kennett and Bligh taking the second and third prizes. In the class for twelve Japanese (amateurs) Mr. W. Featherstone was again first with a good box containing Mons. Delaux, Mdle. Lacroix, Thunberg, Madame Clemence Audiguier, M. Mousillac, Triomphe du Nord, Gloire du Toulouse, Mons. N. Jacotot, Madame B. Rendatler, Roseum Pictum, Mons. Deville, and Hiver Fleuri. Mr. Noble was second, his best blooms being Madame Lacroix, Album Plenum (which also obtained the National Society's certificate for best Japanese bloom in amateurs' class), Triomphe de la Rue des Châlets, and F. A. Davis. In the special prize for twelve Japanese, open to all members, Mr. E. Martin was first with Mdme. Lacroix, Japonaise, Meg Merrilies, Triomphe de la Rue des Châlets, Golden Dragon, Duchess of Albany, Madame C. Audiguier, Fair Maid of Guernsey, Album Striatum, Grandiflorum, Garnet, Comte de Germiny; Messrs. Woodcock, Elvey, and Noble taking the remaining prizes in the order named. In the class for six incurved blooms Messrs. Elvey, Woodcock, and Dines took the prizes in the order. In the class for six reflexed Mr. Martin was first, Mr. Woodcock second, and Mr. Hickman third.

In the classes for trained plants Mr. Martin carried all before him, taking first prize in each class, some of his plants having as many as eighty blooms almost large enough for exhibition; the remaining prizes being taken by Messrs. Woodcock and Sargeant. There were five groups of Chrysanthemums staged for effect, first prize going to Mr. Featherstone, second to Mr. A. Sargeant, gardener to M. Kingsford, Esq.; third Mr. A. Elvey; and fourth to Mr. W. Elvey, gardener to the Dean of Canterbury. For a group of miscellaneous plants arranged for effect Mr. E. Martin was first, Mr. J. Woodcock second, and Mr. A. Sargeant third. Class for three foliage plants Mr. J. Woodcock was first, Mr. E. Martin second, and Mr. A. Elvey third.

Fruit was well shown, but we have not time or space to give many of the awards. In the collection of fruit Mr. Knight was first, Mr. Dines second, and Mr. Woodcock third. For three bunches of Grapes Mr. J. Woodcock was first with good bunches. Vegetables were very well shown, and the competition very keen, Mr. E. Dines, gardener to the Rev. H. G. Rolt, being first for a collection of vegetables; Mr. J. Woodcock second, Mr. A. Sargeant third. Both fruit and vegetables were well staged and of high quality by both amateurs and cottagers. The weather on the first day was very wet, but there was a very good attendance, which speaks well for the future of the Society.

HUDDERSFIELD.—NOVEMBER 12TH AND 13TH.

THE third annual Exhibition of the Huddersfield Chrysanthemum Society was held in the very handsome Town Hall on the dates named. It was a very fine Show, the spacious hall being quite filled with effective groups and excellent blooms. These latter constituted the strong point of the Show, the competition in the chief class forming one of the best displays of the season.

In the class for a group of Chrysanthemums arranged for effect in a space of 64 square feet there were six competitive groups, several of them being very similar to those shown at Kington and Surbiton, but not equal to them. The first prize was awarded to Mr. F. Carter, gardener to F. P. Savory, Esq., for a very bright and fresh arrangement of strong, healthy dwarf plants, containing fine flowers and good healthy foliage. The second was won by Mr. J. Bubb, gardener to J. W. Taylor, Esq., with a very representative group, all the sections being included and plants and blooms good and fresh, but somewhat too thinly arranged. The third was awarded to Mr. F. Hatoh, gardener to F. T. Brigg, Esq. This group, which was overpacked, consisted of very vigorous plants, carrying an abundance of large flowers, but that many of the blooms lacked freshness through being a week or more too old. Had the fading plants been excluded the arrangement might have been rendered sufficiently effective to have won first honours, especially if care had been taken to have masked the wood blocks employed in elevating the plants. These were obtrusive and marred the effect of the arrangement, a neat and well-finished front being a chief essential in all groups of this nature.

The weakest point in the Show was that formed by the classes for specimen plants. The Huddersfield gardeners appear not yet to have adopted the mode of growing them as dwarf-trained specimens, but instead grow them as free bushes 4 to 6 feet in height, and with from one to two dozen blooms on each. The first prize for three incurved was taken by Mr. J. Bubb, second Mr. M. Chambers. Three Japanese.—First Mr. F. Hatch, gardener to J. F. Brigg, Esq., second Mr. M. Chambers. Single specimens (incurves).—First Mr. M. Chambers, second Mr. F. Stokes. Single specimens (Japanese).—First Mr. F. Hatch, second Mr. J. Bubb, third Mr. M. Chambers. Pompons (three plants).—First Mr. M. Chambers. Single specimens.—First Mr. M. Chambers, second Mr. J. Bubb, third Mr. F. Hatch.

CUT BLOOMS.—In the class of forty-eight blooms, twenty-four incurved and twenty-four Japanese, not less than eighteen varieties each, the £10 prize was awarded to Mr. A. J. Cox, gardener to W. H. Watts, Esq., Liverpool, with a very fine lot of blooms, both incurved and Japanese, the former being very large, but some of them a week too old. The varieties, were incurved, back row.—Lord Alcester, Empress of India, Golden Empress, Jeanne d'Arc, Lord Wolseley, and Queen of England. Second row.—Prince Alfred, Golden Empress, Nil Desperandum, Princess of Wales, Mr. Bunn, Jeanne d'Arc, Princess of Wales, and Prince Alfred. Front row.—Mrs. Dixon, Mrs. Shipman, Mrs. Heale, Refulgence, Princess Teck, Lady Hardinge, Beverley, and Cherub. Japanese.—Back row.—Mons. Tarin, Fair Maid of Guernsey, Mons. Tarin, Comte de Germiny, Madame C. Audiguier, Boule d'Or, Triomphe de la Rue des Châlets, and Fair Maid of Guernsey. Second row.—Peter the Great, Fernand Feral, Mons. Astorg, Belle Paule, Jeanne Delaux, Mons. Astorg, Duchess of Albany, Balmoreau. Front row.—Val d'Andorre, Mdle. Lacroix, Triomphe de la Rue des Châlets, Madame C. Audiguier, Elaine, Marguerite Marrouch, Peter the Great, and Criterion. The second prize fell to Mr. M. Mason, gardener to H. Mason, Esq., Bingley, and third to Mr. T. B. Morton, Darlington, both staging well. Four other collections were staged, and in justice to Mr. H. West, gardener to E. Wright, Esq., Alston, Oswestry, it must be stated that if this exhibitor had not inadvertently placed seven duplicates in his incurved stand he would have been adjudged the chief prize. He afterwards showed that he had the requisite number of varieties in his possession, but made a mistake in arranging his stand. The schedule was so explicit that the Judges had no option in withholding the prize, but we were glad to hear the expression of a disposition on the part of the officials to grant some recompense to Mr. West, who staged wonderfully large fresh and bright blooms. He made no mistake, however, in the open class for twenty-four distinct varieties, twelve incurved and twelve Japanese, except in naming a Princess of Wales, White Venus. This accident, however, seeing the requisite number of varieties were present did not invalidate, and he was adjudged the chief prize with the following, all in excellent condition. Incurved.—Back row.—Alfred Salter, Queen of England, John Salter, and Golden Empress. Middle row.—Prince Alfred, Jeanne d'Arc, Empress of India, and Lord Wolseley.—Front row.—Jardin des Plantes, Refulgence, Princess of Wales, and Lady Hardinge. Japanese.—Back row.—Belle Paule, Jeanne Delaux, Boule d'Or, and Madame C. Audiguier. Middle row.—Soleil Levant, Baron de Prailly, Val d'Andorre, and Mrs. Mahood. Front row.—La Nymphe, John Laing, Mr. Freeman, and L'Adorable. Mr. A. J. Cox was an excellent second, but some of his blooms lacked freshness; and Mr. J. P. Leadbetter, Hull, third, also with good examples of culture, five collections being staged.

The class for twelve large-flowered Anemones in not less than eight varieties brought five competitors, Mr. W. Daniels, gardener to F. Hayne, Esq., Croft, being first, his varieties being—back row.—Gluck, Sœur Dorothee Souille, Minnie Chate, and Tisiphone. Middle row.—Prince of Anemones, Georges Sands, Madame Goderaux, and Acquisition. Front row.—Louis Bonamy, Sœur Dorothee Souille, Empress, and Prince of Anemones. Second prize Mr. T. B. Morton, third prize Mr. W. Jackson, both staging well. There were four competitors in the class for twelve reflexed. First Mr. T. B. Morton, with Cullingford (two), King of Crimson (two), Chevalier Damage (two), Madame Madeline Tezier (two), Dr. Sharp, Phidias, Peach Christine, and Jewess. We failed to obtain the names of the other prize-winners, but all the stands were good.

There was excellent competition in the district classes, Messrs. Daniels, Stokes, Chambers, Smith, Senior, Walker, and Sharp dividing the prizes, the lion's share falling to the first-named exhibitors. Table plants were well shown by Messrs. Chambers, Stokes, and Morton, who were awarded the prizes in the order named; and Mr. Bubb worthily won the first position with remarkably fine Bouvardias. Bouquets of Chrysanthemums were far above the average, the first-prize one of Messrs. Daniels being the best we have seen, and there was a charming display of flowers arranged for "ladies'

wear"—a very popular class, worthy of extension. We did not obtain the prizewinners, but the competition was excellent.

Very good Grapes were shown, the prizes being taken by Messrs. Stevenson, Nelson, Liversidge, and Godfrey; and beautiful wreaths, bouquets, &c., were exhibited by Messrs. Armitage & Sons, Huddersfield, and J. T. Sharp, Almondbury. The Show altogether was an excellent one, and nothing could exceed the courtesy of the Secretary and officials.

LEWISHAM AND DISTRICT FLORAL SOCIETY.

NOVEMBER 12TH AND 13TH.

THIS promising young Society held its first Exhibition of Chrysanthemums at the Ladywell Public Baths on the above dates, with results satisfactory alike to visitors, exhibitors, and Committee. The latter provided a schedule which induced plenty of both amateurs and professional competitors in the various classes. Two-thirds of these were devoted to amateur members and amateur non-members, and the number of entries was large and the quality of the flowers highly creditable in both divisions, considering that most of the exhibitors are engaged during the greater part of the day in town and have little time to attend to the plants. There was brisk competition in the classes open to nurserymen and gardeners. Two notable exhibitors, Mr. F. Moore of Bexley and Mr. H. Shoesmith of Hythe, were present with splendid blooms. Those exhibited by the latter were remarkably fine and a source of great attraction to the visitors. In the few days intervening between the Aquarium and the present Exhibition Mr. Shoesmith's blooms developed, thus enabling him to show here in much better form. In addition to the groups shown for competition there were two splendid ones contributed by Messrs. J. Laing & Co., Forest Hill, and H. J. Jones, florist, Lewisham. A sample of patent galvanised iron staging for greenhouses and conservatories was shown by Mr. W. Berry, the inventor, a member of the Committee. This invention promises to be a useful one, and has already been largely adopted in various parts of the country. The supports are made of angle T iron braced with bolts and the table formed of corrugated iron. It can be readily taken to pieces at any time and stored away until wanted, and is a light but strong stage, capable of being used for any kind of plants. A large and interesting collection of Apples were exhibited by Messrs. Bunyard of Maidstone, horticultural sundries by Mr. Benjamin Field, and a collection of valuable china on which Orchids and Chrysanthemums were beautifully handpainted was shown by G. Stroud, Esq. The whole of the exhibits were displayed to excellent advantage in the spacious swimming baths, and the industrious Secretary, Mr. H. Drake, assisted by an excellent Committee, spared no pains to render the Exhibition a success.

AMATEUR MEMBERS' POT PLANTS.—In the class for a group in which quality and effect were the leading features, Mr. W. E. Jupp, Brockley, won the silver medal, and Mr. G. Stroud, Lewisham, the bronze medal. Messrs. Lock, Bryant, and Harvey being highly commended. For three trained specimens Mr. W. Berry, Lewisham, was first (bronze medal), and Mr. Walter Smith, Catford, second. The last-named secured first for a single specimen, and Mr. H. Shorten, Forest Hill, second. Mr. W. J. Upton was first and Mr. H. M. Brown second for twelve plants, and Mr. W. Smith the winner of the bronze medal for three standards.

Cut Flowers.—Some fine blooms were shown in the class for twelve Japanese, Mr. J. Wickham Jones, South Norwood, being awarded a first for splendid blooms of Criterion, Marguerite Marrouch, and Comte de Germiny, Mr. J. W. Upton second, and Mr. J. W. Bannister third. The first prize in the class for six Japanese also went to Mr. J. W. Jones, and the second to Mr. E. S. Addison, Thornton Heath. For twelve incurved Mr. Bannister was first, Mr. J. W. Jones second, and Mr. W. J. Upton third. Six incurved first, Mr. W. J. Bannister; second, Mr. W. J. Upton. Six reflexed, Mr. J. W. Jones first, and Mr. H. Drake second. Six incurved, one variety, Mr. F. S. Shepley, first with Mrs. Dixon; Mr. S. S. Bryant second with Mrs. G. Rundle. Six Japanese Anemones, Mr. J. W. Upton was first with Mdle. Cabrol and Madame Berthie Pigny; and Mr. J. J. Hillier second. Six large-flowered Anemones, Mr. J. J. Hillier first, and Mr. J. W. Jones second. Six Anemone Pompons, Mr. J. J. Hillier first, and Mr. W. Berry second. Six Pompons, Mr. J. J. Hillier again first.

AMATEURS' OPEN CLASSES.—For twelve Japanese, distinct, Mr. J. W. Jones was first, showing capital blooms of Comte de Germiny, Daimio, and Peter the Great; and Mr. S. S. Addison was second. For twelve incurved Mr. J. J. Hillier was first, and Mr. G. F. Coxhead second; and the former was first for six Japanese Anemones.

ALL COMERS.—As previously intimated, some exceptionally fine examples were shown in the class for forty-eight blooms (twenty-four Japanese and twenty-four incurved, distinct) by Mr. F. Moore, gardener to W. C. Pickersgill, Esq., Blenden Hall, Bexley, who easily carried off the first prize, Soleil Levant, Comte de Germiny, Jeanne Delaux, Meg Merrilies, Duchess of Albany, Fair Maid of Guernsey, Thunberg, Princess of Wales, Baron Beust, Mrs. Shipman, Golden Queen of England, Prince Alfred, John Salter, and White Venus being excellent. For twelve Japanese, distinct, Mr. H. Shoesmith, gardener to the Rev. Canon Hodgson, Saltwood Rectory, Hythe, was placed first, very large, finely-formed blooms of Meg Merrilies, Galathée, Boule d'Or, Mdle. Lacroix, Marguerite Marrouch, Jeanne Delaux being shown. Mr. T. Sadler, gardener to C. Lambert, Esq., Streatham, was second, and Mr. J. Rhoden, gardener to General Harrison, Blackheath, was third. Mr. Shoesmith was first again in the class for twelve incurved, distinct, showing magnificent blooms of Queen of England, John Salter, Princess of Wales, Princess Teck, and Hero of Stoke Newington. Mr. T. Coudrey, gardener to J. Levy, Esq., Grove Park, Lee, was second, and Mr. J. J. Hillier third. Japanese Anemones were shown in good form in the class for twelve by Mr. James Huid, gardener to F. W. Prior, Esq., Gordon House, Blackheath, Minnie Chate, Georges Sands, and Lady Margaret being very good. Mr. J. J. Hillier was second, and Mr. H. J. Jones third. Mr. J. J. Hillier secured the first prize for twelve Pompons, distinct, with good blooms of Mdle. Etise Durdon, Black Douglas, and Madame Marthe. Mr. Home, gardener to Mrs. Fletcher Bennett, Tulse Hill, was second; and Mr. E. Kinson, gardener to L. Linden, Esq., West Dulwich, third. The first prize for a hand bouquet, a silver medal, was deservedly awarded to Mr. H. J. Jones for a light and pleasing arrangement, the second going to Mr. Thos. Butcher, Norwood, and Mr. Wickham Jones was third.

GENTLEMEN'S GARDENERS ONLY.—Mr. A. Shoesmith was first for twelve Japanese, distinct. Mr. T. Sadler first, Mr. Shoesmith second, and Mr.

Couldrey third in the class for twelve incurved; and Mr. Shoesmith first and Mr. J. Hudd second for six reflexed. In the class for a group, the space not to exceed 50 square feet, the first award, a silver medal, was won by Mr. Jas. Hudd with a handsome group of well grown and flowered plants; and Mr. C. Nunn, gardener to J. Soames, Esq., the second prize—a bronze medal. Mr. G. Kinson was first for three trained specimens, and Mr. H. W. Cox second.

LADY MEMBERS' CLASSES.—These were well contested by the ladies, there being as many as ten entries in one class. For a hand bouquet Mrs. Berry was first, Mrs. Wickham Jones second, and Miss Hoyton third. For a basket of cut blooms, Mrs. Child was first and Mrs. Wickham Jones second. For an epergne or vase Mrs. Birdseye and Mrs. Jupp took the prize.

MISCELLANEOUS CLASSES.—A first prize was awarded to Mr. C. Nunn for a well-arranged group of plants, not Chrysanthemums, and a second to Mr. E. Kinson. For the best floral table decoration Mrs. Jupp was first, Miss Edith Brookes second, and Mrs. Berry third.

LEICESTER.—NOVEMBER 13TH.

This may not inaptly be described as a Chrysanthemum Show in fetters. It was held in two considerable sized rooms of the Freeman Hotel, but they were altogether inadequate for the occasion. No sooner was the judging completed than the rooms were crowded, and when the Mayor in an appropriate speech declared the Show open the rooms were so densely packed that it was impossible for the exhibits to be inspected with any degree of comfort. This was satisfactory in one respect only—namely, that the well-to-do public of Leicester appreciate flowers, and the crowd at the very commencement of the Exhibition suggests that, given a large hall and liberal prizes to attract the leading growers from different parts of the country, a great and successful exhibition would be assured.

The Show under notice was not a large one, but very attractive, much taste having been exercised in the decorations of the rooms; and excellent stands of blooms were staged, notably by the Rev. John Bird of Walton Rectory, who is the active President of the Society, and is evidently held in great esteem in the town and neighbourhood. This gentleman was easily first in the open class of eighteen incurved blooms, his stands containing some fine examples of culture, though a few were too old. The varieties were Lord Alcester, Lord Wolseley, Empress of India, of great depth; Alfred Salter, fine; Queen of England, Lady Slade, extra good; Princess of Wales, excellent; Princess of Wales, Venus, Prince Alfred, Jeanne d'Arc, good; John Salter, Mrs. Shipman, very deep; Jardin des Plantes, St. Patrick, Mrs. G. Rundle, and Bronze Jardin des Plantes. Second, Mr. John Smith, Derby Road Nurseries, Longthorpe, Niobe, Mrs. Heales, Venus, and Princess of Wales being remarkably neat. Third, Mr. W. G. Bolton, gardener to W. Billson, Esq., Barkby, several of the blooms being flat and open, though some were large and eight out of the number neat. It was apparent that the Judges attached more importance to size than to quality, which is not usually the case at the best exhibitions. Five collections were staged in the class for twelve blooms. Mr. Bird again out-distanced other competitors with an admirable stand, all the blooms except two being decidedly meritorious. Second, Mr. W. S. Button, but the stand of Messrs. J. & H. Hickling contained much neater and better finished blooms, if smaller.

Very good stands indeed were placed in competition in the open class of twelve Japanese blooms. Mr. Bolton, we think, securing the leading position with good sized fresh examples of Balmoreau, Soleil Levant, M. Castel, Album Plenum, M^{me}. C. Audiguier, Cry Kang, Mons. Desbrieux, Soleil Levant, Dr. Macary, Fair Maid of Guernsey, Bouquet Fait (very fine), and Mrs. Townshend; second, Rev. John Bur, Fair Maid of Guernsey being exceptionally good; third honours falling to Messrs. J. and H. Hickling.

There was great competition in some of the small local classes, and the blooms, as a rule, were fresh and neat; but immediately the awards were made the stands were besieged with admirers, and it was hopeless attempting to transcribe either the names of the exhibitors or the varieties. Mr. S. Collett, however, appeared to be one of the most successful competitors. Only a few plants were on view, and these fortunately were small and correspondingly inferior, for it would have been a pity for well-grown examples to be submitted to such a crush. The feature of the Show was the enthusiasm of the visitors, and it seems nothing less than extraordinary that a Chrysanthemum show in a town of 150,000 inhabitants should be so "cribbed, caged, and confined" as this was, and visitors so seriously incommoded in getting a momentary glance at the products they were longing and labouring to admire. Everything was done that could be done by the courteous officials of the Society to contribute to the success of the Exhibition, and amongst them we had the pleasure to meet a *ci-devant* Chiswick student, Mr. Alex. Angus, as the prosperous proprietor of the excellent commercial and family hotel, the Carlton; but the old love is so strong that he has been impelled to provide himself with a garden of two acres, so that he can indulge in the luxury of digging and having a supply of vegetables and flowers of his own growing for the demands of his considerable establishment.

PUTNEY.—NOVEMBER 16TH AND 17TH.

By far the best Show we have ever seen in Putney was held on the dates named. Mr. Knowles's first prize group was remarkable for magnificent blooms, but the pots too obtrusive; hence Mr. Newell was a close second, followed by Mr. Batten. The last-named exhibitor was first with twenty-four incurved blooms; for twelve blooms the honours falling to Messrs. Bentley, Sullivan, and Smith; and for six blooms Messrs. Knowles, Bentley, and Carter. Mr. Sullivan was first with twenty-four blooms of Japanese, twelve of Anemones, and six table plants. Mr. Stevens was the first with reflexed blooms and bouquets. Messrs. Woodhams, Moore, and Smollett had the prizes for Pompons. The prizes for plants were chiefly won by Messrs. Bentley, Methven, and Burnett, and Woodhams.

Messrs. Mahood and Moore had excellent wreaths, for which they obtained prizes. Messrs. Batten, Coombes, Methven, and Tugwell staged splendid collections of vegetables, and Messrs. Smith, Knowles, and Batten very good Grapes. This is all we are able to say of a truly admirable Show that merits further notice. It is a pleasure to note that Mr. G. H. Pitt remains the active Honorary Treasurer of the Society, and Mr. J. Moore the courteous Secretary.

WINCHESTER.—NOVEMBER 16TH AND 17TH.

FAVoured by exceptionally fine spring-like weather the fourth annual Exhibition of Chrysanthemums was opened at Winchester on Tuesday last, and proved in all respects much the best of the series held by the Horticultural Society in that district. The spacious and handsome Guildhall was devoted to the exhibits, which comprised specimen plants, groups, table plants, cut blooms, table decorations, fruit and vegetables of remarkably even quality. The competition was very keen in some classes, notably in those for cut blooms, Apples, and vegetables, over a dozen staging in several cases, and the total number of entries was about 180. The contributions were arranged as effectively as possible by the Hon. Secs., Messrs. R. Porter and John B. Colson, and assisted by several members of the Committee, notably by Mr. F. W. Flight, who also gained a well-merited share of the honours accorded to the exhibitors.

The most imposing plant class was that for a group of Chrysanthemums in pots arranged for effect, quality also to be considered. In this there were five entries, Miss Butler, St. Thomas Street, Winchester, leading with well grown plants, bearing fine blooms, both of incurved and Japanese. The other prizes were adjudged to Mr. T. Lowns, gardener to F. C. Birch, Esq., Clovelly, Mr. T. Munt, gardener to Mrs. Warner, Northlands, and Mr. G. Milden, gardener to Mrs. Turner, Kingsworthy, the groups differing chiefly in the quality of the blooms, but the last named had his front plants too tall, while a very pretty group of Pompons had to be passed. Mr. Joy, Shirley, was first with six specimen single stems, the varieties being Fair Maid of Guernsey, Mrs. Sharpe, Dr. Sharpe, Mrs. Forsythe, Golden Christine, and Peter the Great, all very even and well flowered. Mr. E. Wills, gardener to Mrs. Pearce, The Firs, Bassett, Southampton, followed in this class, but was first with six Japanese, excellent plants, especially M. Astorg. Mr. Joy had the premier single specimen Japanese, Bertie Rendatler, 5 feet in diameter; also the best incurved or reflexed a similarly large G. Glenny, Mr. Wills being second in each class with Fair Maid of Guernsey and Dr. Sharpe. With a miscellaneous group of plants Mr. J. E. Axford, gardener to C. M. Shipley, Esq., Twyford, was first, showing a graceful arrangement of Palms, Dracenas, Crotons, Poinsettias, Coleuses, Primulas, and Chrysanthemums, with a margin of *Panicum*. Mr. Neville, gardener to F. W. Flight, Esq., Cornstiles, Twyford, was a very close second, Cocos, Bouvardias, and Zonal Pelargoniums being freely and tastefully employed. Mr. T. Munt was third. Table plants were well shown by Messrs. Molyneux, Wills, and Wareham, who were awarded the prizes in that order, Mr. Flight having six good double Primulas for the premier prize.

Cut blooms were admirably represented, Mr. Molyneux, gardener to W. H. Myers, Esq., Swanmore Park, Bishops Waltham, winning the premier honours in all the principal classes with both incurved and Japanese in excellent condition, quite up to his high standard. He was first in two classes for twenty-four incurved and Japanese, with twelve Japanese, twelve Anemones, and twelve reflexed, in most cases with plenty of points to spare. Mr. Flight also exhibited well, taking the second place in Class 8 for twenty-four blooms (sixteen incurved or reflexed and eight Japanese) with twelve reflexed, running Mr. Molyneux more closely than in any other class, and third with twelve Japanese. Mr. Bowerman, Hackwood Park Gardens, and Mr. Wills also competed in these classes. Mr. Flight had a beautiful stand of twelve Pompons, easily winning the first prize, also having the leading twelve blooms in the amateurs' class. Mr. Trinder, gardener to Sir H. Mildmay, Bart., Dogmersfield Park, had some fine incurved blooms in his premier collection of twelve, his Japanese also being of good substance. In the classes for table decorations and vases of hardy shrubs, Ferns, and Grasses, Miss Flight was the most successful exhibitor, showing in both cases charmingly tasteful arrangements, single pink and white Chrysanthemums being freely and effectively used in the first named. Miss M. Wells, Miss Bird, and Miss Brown secured other awards with graceful contributions.

Groups were shown in capital condition, mostly well ripened and coloured. For three varieties Mr. T. Weaver, gardener to W. O. B. Beach, Esq., Oakley Hall, Basingstoke, was first, showing Lady Downe's, Muscat of Alexandria, and Alicante, all even, clean bunches, the last named superbly coloured. Mr. Molyneux was second with Gros Guillaume, Trebbiano, and Alicante, very large handsome bunches; Mr. C. Warden, gardener to Sir J. F. Bathurst, Clarendon Park, Salisbury, being third. Mr. Molyneux led in the black variety class with two grand bunches of Gros Guillaume. Mr. Bowerman followed with Alicante, and was first in the white Grape class with beautifully ripened Muscat of Alexandria, Mrs. Weaver and Chalk being second and third with large clean bunches not quite so well coloured. Mr. Molyneux had the heaviest bunch of Grapes, Gros Guillaume, weighing 7 lbs. 12 ozs. of good colour. The principal winners with Apples were Messrs. Trinder, Ashbridge, Weaver, and Kneller, Mr. Trinder staging the best Pears. Vegetables were excellent, seven very even collections being staged. Mr. J. Dauncey, gardener to J. Stane, Esq., Basingstoke, was a capital first with beautiful clean samples, closely followed by Mr. R. Lye, gardener to W. H. Kingsmill, Esq., Sydmonton, Newbury, and Mr. Kneller all their collections being most creditable.

THE KINGSTON CHRYSANTHEMUM SHOW.

AS an example of the method of arrangement adopted at one of the most popular and successful autumn shows, we give an illustration (page 455) of the Volunteer Drill Hall at Kingston-on-Thames, where the annual Exhibition of Chrysanthemums was held last week. It is impossible in shows of this kind to avoid some formality in the disposition of the exhibits; every effort is made to relieve this as much as possible, and the result in this case is more than ordinarily satisfactory. Next to the walls of the building were placed the groups of miscellaneous plants and Chrysanthemums together, with specimens of the latter in several classes. The principal of these were, however, arranged at the end of the hall at the base of a small stage, as shown in the centre of our illustration, and in that position they had a most telling appearance.

The most important amongst them were the very handsome plants from Mr. G. King, gardener to Mrs. Few, Esher, his half dozen specimens each 4 or 5 feet in diameter, and bearing hundreds of blooms, being worthily awarded the premier prize.

The centre of the hall was devoted to the cut blooms, three tables extending nearly the whole length of the building, and upon a third one, across near the entrance, were arranged the collections of fruit—Apples and Pears. In the centres of the tables, between the rows of cut bloom boxes, were lines of table plants, "herried" plants, Primulas, &c., the first-named being especially useful for relieving the rather flat appearance of this part of the Show.



KITCHEN GARDEN.

SOWING PEAS.—The practice of sowing Peas in autumn has many advocates, and there are some who do not agree with it, but if properly done autumn sowing has many advantages, and one of the greatest of those is, that when the plants get well up and are not too severely checked afterwards they will blossom, pod, and be ready for use earlier in the spring than any which can be sown in the first months of the year. Many rows which look well at the new year have almost disappeared by March; but this is no fault of the system, and failure often occurs from neglect. Sometimes the seed is sown early in November and the plants are upwards of 6 inches high by January, but these early plants suffer most, and we would rather have our Peas 2 inches high on New Year's Day than double that height. As dwarf stubby plants are not easily injured by frost or wind and the present is quite early enough to sow the seed; it should be placed into good soil in the most sheltered and sunny part of the garden. A south border is a good position for them, as the sun has always much influence here in April and May. Only very early sorts should be sown. Open the drills to a depth of 5 inches, sow the seed rather thickly, cover with the soil, tread it over the seed and finish with a layer of ashes. When the plants push through the ashes few snails will trouble them, as they cannot travel over a sharp rough surface.

BROAD BEANS.—A sowing of these should be made at the same time as the Peas. They will succeed in heavier soil than them, but the position should be equally sunny, as it is in the spring time, when they are coming into bloom, that they require all the warmth possible. They delight in rich soil, and the ashes must be placed over them too, as they are very apt to be eaten, and a sharp look out must be kept that the mice do not destroy the seed, as we have known them clear whole rows in a remarkably short time.

ASPARAGUS.—This is one of the most favoured of all vegetables. Those who undertake its culture can never have it too fine, and many complain that they cannot have it good enough, but liberal cultivation will do wonders for it, and the beds or plantations must not be neglected in winter. The growths have now withered, and they should all be cut over a few inches above the level of the soil. We allow the ends to project that it may be seen where the roots are. After cutting the rough weeds and refuse are cleaned off, and a quantity of soot and salt are mixed together, and a handful of this is sprinkled round each crown. A little short manure is then spread on the surface of the soil, and they are safe for the winter. Where the manure is scarce a forkful may be placed to each crown, but where plentiful the whole surface may be covered. Where the soil is heavy sand must be substituted for the manure, and if seaweed can be obtained it should be used in preference.

STORED POTATOES.—All Potatoes will have been stored for some weeks now, and it is just after they have been stored about the length of time indicated that they are liable to decay most. In fact, after this time there is little or no loss, and the whole of the stored tubers should be turned over, and all the bad ones removed. They should then be placed back and covered again, when they will be safe for the winter.

ENDIVE.—It is now this useful salad is becoming fully valued. There is nothing better for winter salads than a good supply of Endive. When blanched and crisp the inner leaves are excellent, being very tender and possessing a distinct and pleasing flavour. For appearance the green or moss-curbed is perhaps the most ornamental, but our favourite for usefulness is the Broad-leaved Batavian. It is the hardest, and it is large and excellent. It will bear much severe weather, but excessive frost and damp are apt to make them decay, and the best way is to protect the plants for midwinter and spring use. If lifted and placed into any rough frame with a glass over them they will be safe. They should be lifted with good balls of earth, and be placed in merely to touch each other. This should be done before frost injures them, and those for immediate use must be blanched before cutting. We have tried various ways of doing this, but consider the best to be that of tying the leaves firmly together at the top. This keeps the interior dark and dry, and produces excellent hearts.

PARSLEY.—Keep the plants free from dead leaves. Bend some sticks over the bed hoop fashion, and throw some protection over these in the

time of frost or snow. Where there is any danger of the plants being injured by severe weather, lift a quantity of them with large balls of soil attached, and plant them carefully in a frame. Water immediately afterwards, and do not put the lights on until frost comes. Parsley is so valuable in winter and spring that it must be secured, no matter at what trouble.

CABBAGE PLANTS.—These may soon have to bear severe weather, and as it is always an advantage when they suffer as little as possible from it. The whole of them should be well earthed up, as they suffer much less when the soil is drawn close up to the stems than when these are exposed. A slight sprinkling of soot or lime thrown over them is also beneficial.

WHITE TURNIPS.—Where these are nearly of full size the frost will injure them quickly, and they should be lifted and stored. Those only half grown or in a small state suffer less, and may be left in the ground.

PLANT HOUSES.

Bouvardias.—Where these have been kept cool up to the present time they should be removed at once to a light structure where the temperature will not fall below 50° at night. The flowers do not open well and freely under cool treatment, but by the aid of gentle warmth they yield a long supply of useful flowers for cutting. The latest of the stock may be kept where the temperature will not fall below 45° for the purpose of forming a succession.

Primulas.—If extra sized plants are required for flowering in the spring select from the general stock as they are removed from cold frames a number of dwarf sturdy plants that have not shown flowers. If these are transferred from 5 to 7-inch pots they will continue growing, and in the spring will repay the trouble of potting and a little extra care during the winter. After potting give them a light position close to the glass and water them carefully.

Freesias.—Imported bulbs of these are much cheaper than formerly, and they deserve to be more generally grown, for they are very useful for cutting, especially *F. refracta alba*. The bulbs can now be obtained, and should be potted up at once. About six bulbs should be placed in each 4-inch pot in a compost of good loam, to which is added one-third of leaf mould and a liberal dash of coarse sand. The bulbs should be first covered with soil and the pots plunged in a cold frame, covering the surface of the soil with a little cocoa-nut fibre refuse. They should remain in this position until they commence growing, when the material covering the surface of the pots should be removed, the pots remaining plunged. Cool airy treatment should be continued, merely protecting them from frost, for heat or a close confined atmosphere is certain to ruin them, and has been the cause of innumerable failures in the past.

Vallota purpurea.—These may be stored away for the winter, but they must not be dried off, for they are evergreen. Many mistakes are made by keeping these plants too dry during the short days of winter. They should occupy some position where they will enjoy an average amount of light and where water can be supplied to them in sufficient quantities to keep their foliage fresh. A vinery or Peach house at rest, or a shady corner in the greenhouse, will suit them admirably—in fact, any position where frost can be kept from them.

Zonal Pelargoniums.—The atmosphere must be kept comparatively dry in which these are flowering, for a few days' sunless weather and a moist atmosphere will cause the pips to damp. The plants should be examined every morning and supplied with water if they need it, and then a little extra heat turned on to evaporate up the damp. This will not be needed on bright sunny days. Old and decaying pips must be removed at once, or they quickly destroy the whole truss at this season of the year. The whole of the plants flowering now will have their pots full of roots, and will be much benefited by an application of artificial manure applied to the surface of the soil. Young stock, whether singles or doubles, and now in 3-inch pots, should have their shoots pinched if they have extended beyond 3 or 4 inches in length. These, if kept close to the glass in a temperature that does not fall below 45° at night, will be in good condition for placing in larger pots in six weeks or two months time. No attempt should be made to push these into growth, and no more water should be given them than sufficient to keep their roots and foliage in a healthy condition. This treatment will insure these plants remaining in good condition until they are repotted and the days commence lengthening, when they will grow vigorously.

French and Fancies.—Plants intended for early flowering in 5-inch pots may have any shoots that are taking the lead pinched for the last time. These will break again into growth by the time they are ready for the size pots named if they are not already in them. This is entirely a question of space, and where this is limited the plants will be in 3-inch pots, and if their shoots are pinched without delay they will have started again into growth by the end of the year, and may then be potted and encouraged to lengthen their shoots for flowering. Water these and later batches with care, for if they are kept too wet at their roots soft growth will be made, and their foliage become spotted. No more water should be given than is just sufficient to keep them growing.

Heliotropes.—In order to keep these flowering through the whole or greater portion of the winter they should occupy some structure where the temperature at night will range from 55° to 60°. If they are to continue flowering the plants must be kept growing slowly, or else they will soon fail. Where these temperatures cannot be maintained, and the plants fail to bloom, they should not be thrown away, but kept in a temperature of 50°, and they will commence fresh growth early in the year, and flower again profusely. When reserved for this purpose they should not be

pruned back; the trusses of bloom will not be so large as from young vigorous plants, but they will be of moderate size and numerous, and therefore equally effective for various decorative purposes. For autumn, winter, and spring flower no variety surpasses White Lady. Young plants in 3-inch pots should have their shoots pinched at once, or as soon as they are ready, and must occupy a light position where a temperature of 50° can be maintained.

Mignonette.—Some of the most forward plants that are showing flowers must be allowed to develop to form a succession to those already in full beauty. The remainder, that are trained either as standards or pyramids, should be tied to the trellis from time to time and all flowers removed as they appear. A little artificial manure applied to the surface of the soil will keep their roots active and assist in the production of dwarf sturdy growth. These plants must not be kept in a close confined atmosphere, or fine spikes of bloom cannot be secured, for they will grow too quickly, and the shoots will be weak and incapable of producing such spikes as are desired. Plenty of air must be admitted to successional plants, and the whole watered carefully, at the same time never allowing the plants to suffer by an insufficient supply.

Tea Roses.—Those in pots that had broken into new growth and were housed towards the close of September should now be yielding a bountiful supply of delicate buds. Up to the present time these have been kept cool, if previous directions have been attended to, but from the present time keep the ventilators closed to prevent the admission of cold draughts. These, if allowed to strike upon their tender foliage, will quickly result in an attack of mildew. The temperature from the present time should also be prevented from falling below 50° at night; it may safely rise 5° higher on all mild occasions. This will keep the plants steadily growing and producing buds. These plants will yield a welcome supply until Christmas, when they should enjoy a short rest, and they will flower freely enough in spring. Other plants may be selected that have made 1 or 2 inches of new growth. These, if brought on steadily, will continue the supply of blooms into the spring. Those planted out for yielding a supply of flowers will be on the move if the house in which they are growing has been kept moderately close during the past fortnight. If the blooms from these are wanted by Christmas, keep the house perfectly close and maintain the same temperature as advised above. Syringe the plants well during the morning of fine days with a weak solution of soft soap. None of the plants, whether planted out or grown in pots, should be allowed to suffer by the want of water at their roots. On the other hand they must not be overwatered, and that applied must be of the same temperature as the house, or a few degrees warmer. If aphides appear fumigate lightly at once with tobacco, or syringe the plants with a weak solution of Fir tree oil.

Hybrid Perpetuals intended for very early flowering may now be pruned back and sheltered in a cold frame or in a Peach house or vinery at rest. The remainder of the stock may still be kept outside.

Greenhouse Rhododendrons.—These must not be stood upon dry shelves or staging, for such treatment is detrimental to the well-being of these plants. They should be kept perfectly cool, and stood upon some moisture-holding material, or they will be certain to lose a good percentage of foliage, and probably attacked with thrips, which quickly injures them. They must also be kept in a moderately moist state at their roots, for it is contrary to their nature to be kept dry. Dryness at their roots will soon result in the ruin of the plants, for their fine silk-like roots soon wither and die. The soil should be kept in an intermediate state for moisture as near as possible.

Helleborus niger.—Good clumps may now be lifted and placed in pots or boxes and sheltered in a cool house for a few weeks before pushing them into bloom. This is rather a ruinous system, for Hellebores do not like disturbing, and those lifted and forced will take two or three years before they are thoroughly recovered. The best plan is to cover the clumps where they are growing with handlights or a frame. The first system has been given up, and this adopted for some years with much better results. After the plants are covered the frame or handlights are not ventilated; in fact the lights are only opened to gather the flowers. Good clumps yield a supply of pure white blooms with good stems for a long period. After the whole of the blooms are gathered the lights are tilted and left in this condition until genial weather in spring, when the frames or handlights are removed.

THE FLOWER GARDEN AND PLEASURE GROUNDS.

Breaking up the Beds.—It is not often that the summer occupants of the flower beds have of necessity to be removed before they are disfigured by frosts; yet this is what we are doing this season, in order that the beds may be replanted for the winter. If delayed any longer the chances are very wet or very cold weather may seriously impede the work; and besides, the Wallflowers, Forget-me-nots, Silenes, and other biennials intended for the spring display are growing much too strongly and transplanting will check this, thereby rendering them hardier. If it can possibly be avoided the work of preparing and replanting the beds should not be done in wet weather, and on no account ought they to be dug long before they are replanted, as one heavy rain would completely saturate the newly loosened soil, and plants do not thrive when puddled in. We rarely dig our beds, but simply clear over the surface and replant at once. Thus treated the beds are warmer, because drier, and the frosts are less likely to heave the plants out of the ground. Spring-flowering plants are bad exhausters of the soil, but in few cases is it advisable to attempt manuring the beds at the present time, as this can be done more cleanly and effectually just prior to putting out the summer bedding plants.

Replanting the Beds.—In many gardens much more is seen by the proprietors and their friends of the winter bedding than of the summer,

and for this reason alone extra pains should be taken to complete it in as effective a manner as materials at hand will permit. Various nurserymen supply nearly or quite everything that is suitable, but if we except bulbs, the bulk of the plants used are best prepared on the spot, drawing on the nurseryman for what may be required to make good deficiencies. Masses of Wallflowers in one colour only, edged with Myosotis, Silenes, Daisies, or Violas, are very effective, and for the smaller beds two distinct kinds of plants, such as Alyssum saxatile in the centre, with an edging of Silene compacta; Saponaria calabrica edged with Arabis mollis; Collinsia bicolor edged with Silenes; Limnanthes Douglassi edged with red Daisies; Myosotis dissitiflora edged with common Primroses; blue Violas edged with white Daisies; and Silene pendula edged with Golden Pyrethrum. Various other combinations will suggest themselves to intelligent planters, but the more simple the arrangements the more showy and effective are the beds when in flower. None of the plants makes much progress after being placed out, and for this reason they ought to be disposed rather thickly, the beds being really covered without actual crowding. They ought also to be planted firmly, especially if the state of the ground is at all loose and dry. Where various hardy plants are included with the summer bedding plants these need not be disturbed, the beds being planted to harmonise with these. Carpet beds having a groundwork of hardy trailing plants may have the figures filled in with other hardy plants, such as Golden Pyrethrum, Ajuga reptans, small selected Beet, Silene compacta, red and white Daisies, and Primroses; neat little Conifers, such as Cupressus erecta viridis, C. Lawsoniana alba spica nana, Biota aurea, Retinospora obtusa nana aurea, R. plumosa argentea and aurea, Thuja occidentalis aurea, as well as neat plants of Yucca filamentosa and recurva, and clumps of Iris foetidissima variegata, making good "dot" plants.

THE BEE-KEEPER.

HINTS TO BEE-KEEPERS.

WHETHER bees consume more food in a low temperature or a high one during winter is a subject that has engaged the attention of bee-keepers for a long time, but without any satisfactory result. The subject is one of importance, but for the present I do not intend to discuss it at much length. I simply wish to impress bee-keepers with the fact that, owing to the very mild October, bees were continually on the wing during the daytime, consequently much food was consumed, and at the present moment many hives of bees that were considered to be of sufficient weight to stand the winter during September are almost in want, and unless fed now will assuredly succumb before the new year. It will therefore be wise for bee-keepers to see to the state of their hives before it is too late. During the whole of my bee-keeping life I have never before known so much food to be consumed during October as this year, especially where the bees were numerous. In one strong hive of Syrians I had occasion to manipulate the other day, there was not more than three pounds of honey, yet it had in it during August not less than forty pounds, while all other strong hives are reduced in proportion, and the news is the same from every quarter. If bees could be kept quiet at a temperature of 55°, less food would be consumed; but it is the activity of the bees during mild weather that causes them to consume so much or more than when quiet at a low temperature, when in reality it is then that most food is required to sustain life.

Syrian bees have been engaging my attention a good deal during the past week. Their eagerness to work together, with their peculiar habits, are both alike interesting to me. Some years ago I joined some bees of a different breed to a handful of Cyprians; the latter at once attacked the others and killed every one, but not until three weeks had elapsed did they accomplish their murderous design.

Owing to a number of queens being unfertilised I was under the necessity of joining the surplus bees to the best advantage I could. The first one was a hive of Syrians of full strength, which, after the usual precautions, except scenting, which, owing to its queenless state, I did not deem advisable, I joined to a fair quantity of Carniolians—successfully I thought—and for two days no disturbance took place. After that time the Syrians attacked the Carniolians in a deliberate manner, killing them slowly but surely. It is now a week since they were joined, and they are still killing. A

second one I attempted, but the Carniolians in this case made the attack, and I could not induce the Syrians to remain inside along with their antagonists. A third one, both Syrians, joined peaceably, and remain so. A fourth one is similar, but a striking peculiarity with these bees is that, although they sometimes return to their old site, the moment they find their old hive closed against them they return at once to their new hive, and do not cluster at the entrance as other varieties do. This peculiarity in the Syrians is exemplified and amusing when they are engaged in a robbing expedition. If shut out of their own hive they immediately return with their booty to the hive it was taken from, thereafter start a marauding expedition on some other hive, but shortly after their own hive is opened they fly back to it with their spoil.

Moving bees short distances is sometimes necessary, but this should never be attempted unless on a fine day when the bees are abroad, and they should not be moved forward, but always backward. The reason for this is, that when moved forward the bees fly over the hive, but when moved backward the bees flying to the old site, and their heads being directed towards their hive, soon discover it. When the hive is not in position to allow the proper shift to be made, turn the hive round gradually on fine days before moving.

Outside cases would be unfinished without a corner bead or square block of wood chamfered on the outer corner, which should be as thick as the two lining boards. When the boards are accurately cut, and the corner piece nailed firmly, it gives a complete finish and fine appearance to the whole. The above was omitted in my description of an outside case in the number for October 28th. Amongst my outside cases I have one with hive, minus stand of iron for roof (the latter may be had from 6d. to 9d.), and frames, made from two old soap boxes which cost me only 4d., and about 1d. for nails. To those who have a hankering after old boxes to make hives, in addition to these soap boxes, some Orange boxes answer the purpose well.

Feeders, too, may be had both cheap and serviceable. A good underfeeder may be had for a few pence. The tray or trough to be pushed in beneath the perforated zinc may be of any length or width to suit the hive and fancy of the bee-keeper, but not more than three-eighths of an inch deep. To support this tray a little bracket is nailed inside, and at the back of the stand, as it is best to feed where the bees do not annoy you, and to support it outside a piece of tin or zinc is so bent as to form another bracket to be suspended at the back underneath the tray; two round holes are punched in the back, and running upward from them oblong holes, so that the round holes admit the heads of screws nearly flush with the wood, then when the bracket is pushed over these it slides down, and is held in its place by screw-heads.

To complete this feeder an old mustard or other tin or bottle answers the purpose well. To make it, pierce a hole in the lid so that a fair sized marble will go nearly through without doing so, then solder on two pieces of tin crosswise and U shaped to form a cage to keep the marble in its place, and of sufficient depth to let it fall out of the way when the tin is being filled, after which solder all tight. Now a little ring of tin, one-eighth of an inch deep, must be soldered round the orifice, or the tin must be let down the same distance, so that the outlet will be below the upper edge of the tray and prevent the syrup overflowing. The tin must be so placed that none of the syrup is exposed; there are different ways of doing that which will suggest itself to the bee-keeper. If a bottle is used, put a bung of wood in the mouth, having a hole on the same principle as tin, and two wires crosswise will keep the marble or ball in its place; now take a block of wood, having a hole sufficient in size to let the bottle neck pass one-eighth of an inch beyond the level, place this block upon the projecting part of the tray, fill your bottle, and let down; the moment the marble touches the bottom the syrup flows.—A LANARKSHIRE BEE KEEPER.

THE COTTAGER'S STRAW SKEP—HOW TO GET HONEY FROM IT.

THE next question is that of sections. These are now very cheap, some firms advertising them as low as 25s. per 1000. They, of course, are a little more than that in smaller quantities; but when there are two or three cottagers who can lay their heads together and get a 500 case or a 1000 case between them it is worth doing so, even if they do not require them all in one season. They will keep. Those who are members of county bee-keepers' associations will find the means of getting them in small quantities through that medium with advantage. And the same may be said of comb-foundation, the use of which is a necessary part of the system. Having got sections and foundation, the next thing is to fold them and fix the foundation in them. There are various ways of accomplishing this, but the following simple plan will answer the cottager's purpose:—Take a piece of 1-inch deal, $3\frac{1}{2}$ inches wide, and cut it into

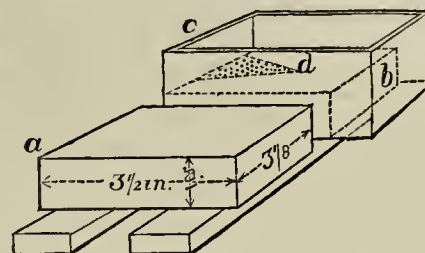


Fig. 65.

$3\frac{1}{2}$ -inch lengths, cutting them perfectly square. The upper side should be dressed quite smooth and one of the corners chamfered off, as shown at *a*, fig. 65. Nail these—there should be two or three of them—on to two narrow pieces of wood, as shown, leaving about three-quarters of an inch distance between them.

Comb-foundation is made in sheets 12 inches by 8 inches. Sometimes these sheets will come to hand cut into two, lengthwise. Cut these down the centre again, using a straight-edge and a sharp-pointed knife, the latter to be pressed very lightly. Next cut these into triangle-shaped pieces about 2 inches wide at the base, and put them on a plate ready for use. Place the poker in the fire and get hot; arrange your sections, comb-foundation, and boxes conveniently. Take the sections, gently bind each corner and fit the dovetail ends together, and press them home with the thumbs. Place each on the blocks as it is done, with the dovetail corners all one way, as at *b*. Take the hot poker from the fire, prop it up in a convenient position, place your thumb of the left hand on the top side of the section at *c*, grasp the lath under the block and hold it in a slanting direction; take a piece of foundation between the forefinger and thumb of the right hand, just touch the hot poker with it, and at once place it in position as at *d*, pressing it against the section. By the time the last one is thus fixed the first will be ready to lift off and be placed in the boxes, as shown at fig. 66, with a tin separator (*a*, fig. 66),

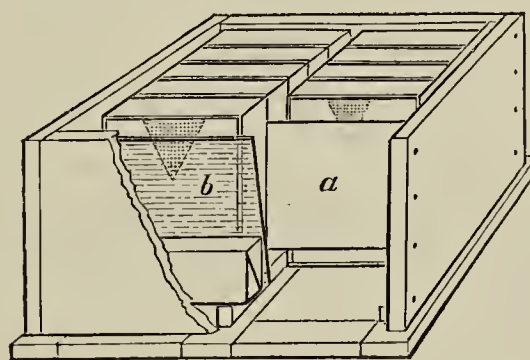


Fig. 66.

about $3\frac{1}{2}$ inches wide between each. Having put in the last two place in front of them a piece of glass (*b*, fig. 66) of a similar size, wedge all up tight, and it is ready for placing on the hive. This getting boxes and sections ready should be a winter's job; it should not be left till they are wanted, and if I had written these notes when I was myself busy with them they would, perhaps, be more in season. However, there is still a few weeks in which to make preparation. Some advise sections to be filled with comb-foundation. I do not approve of that. No doubt it is a saving to the bees and trade for the makers, but it is not an acquisition when placed on the breakfast table. A knife does not cut it so freely as it does the comb, and consequently the lower side of the honey gets all crushed; the honey runs out into the dish, giving it anything but an attractive appearance, and the pieces of foundation stick in your teeth, which most people do not like.—A COTTAGE BEE-KEEPER.

ABOVE OR UNDER?—WHERE TO PLACE THE EMPTY SUPER.

THERE are two distinct methods of "tiering up" supers. Each may be used occasionally with more advantage than the other, but it requires no superficial knowledge of localities, the usual length of the honey flow, and the time of its occurrence, on the part of

the individual bee-keeper to determine which is the more profitable course for him to follow. The main object with which the honey is produced must first be ascertained, and the course will then be clear. If Clover honey is desired it will be wiser to tier up by placing the empty supers beneath the partially filled ones, while if fruit honey is preferred the empty supers must be placed above and not below those already on the hive. These are my conclusions; and in order that there may be no misapprehension I will briefly point out why the method of tiering depends upon the kind of honey it is desired to obtain more than upon anything else.

The object of tiering is twofold—1, To give sufficient room to prevent swarming; 2, To have empty combs sufficient to hold all the honey likely to be collected in a ten-days honey flow. With the first of these reasons I have already dealt in other issues, and it is to the consideration of the second only that I now desire to call the attention of all who desire to adopt either plan. It is urged by bee-keepers of great reputation that by placing an empty super beneath the one already in a state approaching completion, the latter is not only retarded, but is occasionally partly emptied in order to supply honey for wax-production; this wax to be used in building comb to fill up the vacuum, which bees always detest, between the brood nest and the top super. That this is the case I am not prepared to say; but if it was so, I should be more than ever in love with this method of placing the additional supers.

The great value of tiering up in this manner can only be realised by those who have bees strong enough to enter supers in the last days of April or early in May. It is with reference to localities in which fruit of all kinds, Sycamore, Beans, Clover, and Lime yield honey when the weather is favourable until the middle of July, that these arguments are specially adduced. Those who have to sell honey, either extracted or in the comb, generally find that "dark" honey, unless from Heather, is less readily saleable, and realises a lower price than the Clover, which to my taste lacks the exquisite flavour of honey gathered from Gooseberries or the Sycamore. But if the honey is for sale, the taste of the purchaser must be the great consideration. If, then, the dark honey is used by the bees to make comb to contain the light honey, the advantage is on our side; for the bees are kept busily at work comb-building until the Clover begins to yield, when nearly every worker is set free to collect the nectar waiting to be stored for the use of man. If on the 26th of April a sectional super is placed on a strong stock, and fine weather intervenes, by the early days of May good progress will have been made, and a second rack may be placed beneath the first, and so every few days. As the bees get well to work in each new placed super, another must be put beneath it until the Clover comes into bloom. Few of these sections will contain much honey, but the comb will be all built out. Some hundred sections ready filled with comb await the honey flow. Fine weather is alone needed to ensure success; if wet weather set in at this critical time the harvest is lost, but a grand set of pure white virgin comb is on hand to assist in a future year.

The weather being propitious, the result of this system is that nearly all the honey is from white Clover, and readily saleable at a good price. The quantity is great, because the bees, instead of being compelled in the midst of the honey flow to stay within and build combs, are free to go forth in unusual numbers and bring in the nectar; the dark unsaleable honey has been utilised for the providing of such combs, which are therefore cheaper than those formed when the bees ought to be engaged in the fields gathering the high-priced Clover honey.

Again, if the empty supers are placed above those already partially filled, the bees do not so eagerly strive to fill the empty one with comb, but bestow more attention on the first-placed super, which will therefore be the sooner completed, and the bees are more likely to swarm. To be sure we make certain of one super, but at a loss of several. When once the great harvest is over, super room must be gradually decreased, and the whole attention of the bees concentrated on sealing the cells already filled, or in finishing those not quite full; but in the early season the bees must be led by every possible means to build comb at the expense of completed supers until the time comes when the most saleable honey can be gathered, and then the bees are welcome to complete their unfinished labour by filling and sealing the cells. These are the reasons which urge me to advise all who desire to obtain white honey of fine quality in the comb to adopt the plan of placing the empty super beneath, unless at exceptional times, when they may with advantage be placed above.

Many will continue to hold a contrary opinion to the one here expressed, but they may be persuaded to try a single hive upon the strict lines here given, never allowing the bees to suffer in the slightest degree by want of room, but inducing them to build comb until the time arrives when the supers must be completed. It is better to give too much room than too little when once the bees have set to work in earnest, and honey is coming in even in

moderate quantities; comb ready built is filled in a surprisingly short space of time, and when there are so many empty cells that there is no delay caused by the bees having to wait until the honey is fit for sealing, a great addition is made to the harvest, and the bees are not compelled by enforced idleness to seek more room by throwing off their surplus population in order to afford relief to the remainder, who prefer to stay in the old home under the sovereignty of a new monarch.—FELIX.



Petroleum for Insects (J. B.).—The correct method of preparing petroleum has been given twice during the present autumn. See page 216 September 2nd, 1886.

Lime for Fruit Border (F. J.).—Not only can lime at the rate of ten cartloads to the acre be safely applied to a border in which stone fruits are growing, but twice the quantity will be much better if there is little or no lime in the soil; and then the dressing will be a very light one.

Watercresses (C. M. B.).—Mr. Shirley Hibberd's admirable little work will probably suit you if still in print. We think it is published by Messrs. Groombridge & Son. We are not able to answer your second question; all are good that have been advertised in our columns.

Herniaria glabra (E. M., Wimbledon).—This plant is quite hardy, and succeeds in almost any position and soil, spreading quickly, and forming a dense mass of growth close on the surface of the ground. It can be readily propagated by division of the roots either now or early in the spring.

Preserving Walnuts (G. B. H.).—If you have no cellars at your command we should place the nuts in large earthenware pipkins, or failing these in large flower pots, and bury them in a cool position in the garden. We have kept nuts successfully by this simple method. In some of the pots we have mixed sand with the nuts, others sawdust, and in other pots the nuts have been placed without either sand or sawdust, and there was little or no difference in the results. Walnuts may be kept for a considerable time in an ordinary shed if they are placed in pots with moderately moist sawdust, but not that from Fir trees, which contains turpentine.

Marechal Niel Rose (C. H. S.).—If you desire a number of blooms next year you had better limit the pruning to the removal of any growths that may be requisite to prevent overcrowding, and removing the soft ends from those retained. These may be 6 or 8 inches apart, and may be cut back to good buds on the stems after flowering, so as to encourage free growth for flowering on another year. If you cut back some of the shoots now as suggested strong shoots will push from these, and, kept clean during the summer, will be in fine condition for flowering in 1888.

The Osage Orange (G. B. V.).—The Osage Orange (*Maclura aurantiaca*) is a tree growing from 20 to 60 feet high, and a native of North America. The fruit is about the size of a large Orange, and consists of radiating and somewhat woody fibres, with a tuberculated surface of a golden colour, and is filled with a fetid, yellow, milky juice, with which the native Indians smear their faces when going to war. This fruit is eatable, and a few years ago it was attempted to cultivate the tree for the fruit in this country, but fortunately without success, as it does not appear ever to have been used anywhere as an article of human food. Both in this country and America the tree forms excellent fences, and is now cultivated for that purpose. The wood is bright yellow, very fine grained, and elastic; the Indians between the Mississippi and the Rocky Mountains use it for making their bows, and hence the tree is called in America Bow-wood; it also yields colouring matter, and might possibly be as well adapted for the purposes of dyeing as that of fustic.

Back Wall of Vinery (G. H.).—If the roof of your house is to be thickly covered with Vines you must not expect any very profitable return of fruit of any kind from the back wall, and it will be of little or no use your planting either Peaches or Nectarines, as they would give little fruit, but might produce excellent crops of red spider. We have seen a fairly good crop of Alicante Grapes on the back wall of a vinery, also of Brown Turkey Figs; but if no sun can reach the foliage of Vines or fruit trees they cannot be productive. You may grow good crops of Tomatoes for a year or two, but these will not bear freely when the shade becomes dense. Camellias are good for covering the back walls of vineries.

Winter Pears (R. S.).—Winter Nélis is the only Pear that succeeds as a standard, and it does not succeed well in cold localities, in which it requires a wall. Zéphirin Grégoire, Iris Grégoire, and Bergamotte Esperen, however, do fairly well, and are about equal in hardiness to Winter Nélis. The best late or winter Pear we have had from trees in the open was Jean de Witte, and it bears freely as a standard. For bush or pyramid you could not have a better than Josephine de Malines. Winter Nélis, Monarch, Iris Grégoire, Bergamotte Esperen, Marie Benoist, Easter Beurré, Beurré Rance, Ne Plus Meuris, and Olivier de Serres succeed in favourable localities, and though not so large or fine-looking, keep better and longer, and are finer as regards quality than from trees against a wall. We have had Jargonelle, Williams' Bon Chrétien, and some other of the late summer and autumn Pears fairly good from a north wall, but we do not advise them. North walls are best used for culinary Plums or Morello Cherries, Currants, &c. For a south-east aspect, Jargonelle, Clapp's Favourite, Williams' Bon Chrétien, Beurré Superfin, Louise Bonne of Jersey, Marie Louis, Conseiller de la Cour, Beurré Bosc, Brockworth

Park, Van Mons Léon Leclerc, Glou Morceau, Pitmaston Dnebs, Doyenné du Comice, General Todleben, Durondeau, Marie Louise d'Uccle, Beurré Bachelier, Beurré d'Anjou, Beurré d'Arenberg, Winter Nélis, Josephine de Malines, Marie Benois, Napoleon, Nonville Fulvie, and Benrre Rance may be chosen. They are named in the order of their ripening. Cordons should be on the Quince stock, but all kinds do not succeed on that stock, and such are double grafted, an extra charge being made for them by the nurserymen.

Pruning Filberts (W. J. B.).—February is a good time for this, as then the blossoms are usually apparent. The fruit is produced principally on the former year's wood, and generally from compact side shoots, the produce of leaders of a short-jointed and mature appearance. Such lateral fruit-bearing branches may be induced in greater abundance by shortening back strong shoots of this character. Thinning out, however, is one of the principal matters; for, unless this be duly attended to, the bush will become crowded with worse than useless spray; it will also obstruct the light from the bearing portions as well as hinder the circulation of air. A great deal of small spray will be produced on the inner portions of the branches; and this, although of the character of bearing wood, is generally unfruitful, and must therefore be mostly pruned away. Anyone who observes the habit of the Nut closely will soon perceive that the shrubs are most disposed to bear at the extremities of the branches, thus evincing their partiality to plenty of light and air. These, then, are the portions of the tree where the eye must be directed as to fruit-bearing properties. The leaders, however, must not be encouraged so thickly as to cross each other; and, in order to prevent the lower portion of the head from becoming naked, a good strong well-placed shoot may be occasionally encouraged, heading it back in due time, in order to keep it producing side branches. After duly thinning away superfluous shoots the principal leaders should be all shortened. As a general rule, we should say, remove about a quarter of the length; this will cause the tree to produce abundance of side spray, from which in the future spring the fruiting shoots may be selected.

Uvedale's St. Germain Pear (C. M.).—The following particulars concerning the history of this Pear are given in "The Fruit Manual":—"This appears to be an English Pear, and to have been raised by Dr. Uvedale, who was a schoolmaster, and lived at Eltham, in Kent, in 1690. He appears to have removed to Enfield, where he continued his school. Miller, in the first edition of his Dictionary, in 1724, speaks of him as Dr. Udall, of Enfield, 'A curious collector and introducer of many rare exotics, plants, and flowers.' Bradley, in 1733, speaks of the Pear as 'Dr. Udale's great Pear, called by some the Union Pear, whose fruit is about that length one may allow 8 inches.' I have ascertained by the old books of the Brompton Park Nursery that it was grown there in 1752, under the name of 'Udale's St. Jarmaine.' Although doubts have been expressed by some pomologists on the subject, I am quite satisfied that this is Belle Angevine of the French; any person who has seen the two fruits could have no doubt on the subject. But in M. Leroy's Dictionary he makes it a synonyme of Tonneau, a fruit to which it has no resemblance. One of the reasons given in the 'Dictionnaire de Pomologie' for supposing it is distinct from Belle Angevine is, because in a French edition of 'Miller's Gardener's Dictionary,' Uvedale's St. Germain is described as 'rond et vert foncé,' but in all the English editions it is correctly described as 'a very large long Pear, of deep green colour.' The trouble M. Leroy has taken to investigate the history of this Pear is very considerable, and he has devoted a good deal of attention to the subject. He tells us that it received the name of Belle Angevine from M. Andrusson, a nurseryman at Angers, who received it from the Garden of the Luxembourg, under the name of Inconnue à Compôte, in 1821. Beyond this M. Leroy cannot trace it. It is very probable that by some means it was transported from England to Paris, for it had already, before that time, been grown in our gardens for upwards of a century."

Names of Fruits.—The names and addresses of senders of fruit to be named must in all cases be enclosed with the specimens, whether letters referring to the fruit are sent by post or not. The names are not necessarily required for publication, initials sufficing for that. Only six specimens can be named at once, and surplus fruits beyond that number cannot be preserved. (J. B.).—1, Cornish Gilliflower; 2, Franklin's Golden Pippin; 3, Hanwell Sowing; 4, Small's Admirable; 5, Beurré d'Amanlis; 6, Moccas. (W. H. Ashwin).—Large Apple, Kentish Fillbasket. Smaller, Hollandbury. Pear, not known. (W. K.).—No. 1 is perfectly rotten; 2, Blenheim Pippin. (G. S., Kent).—1, Colmar d'Arenberg; 2, Nonveau Poiteau; 4, Beurré Diel; 5, Beurré Capiaumont; 6, Nonveau Poiteau. (W. Jones, Birkenhead).—1, Gil-o-gil; 2, Dumelow's Seedling; 3, Duchesse d'Angonème; 4, Gansel's Bergamot; 5, Brown Beurre; 6, Red Doyenné. (A. Dunkley).—3, Herefordshire Pearmain. All the others had lost their number from being packed so loosely, the large red one is Cox's Pomona, and the two small ones are Fearn's Pippin. (A Constant Reader).—1, Uvedale's St. Germain; 2, Easter Beurré; 3, Hacons Incomparable; 4, Cobham. (A. B.).—1, Lewis; 2, Colmar; 3, Napoleon; 4, Beurré d'Arenberg; Apple not known. (G. Mildon).—1, Catillac; 2, Gansel's Bergamot; 3, Comtesse de Flandres; 4, Beurré Superfin; 5, Marie Louise; 6, Benrre Louise; 6, Beurré Bosc; Apple Ribston Pippin. (W. F. G. G.).—1, Gravenstein; 2, Lewis' Incomparable; 3, Fearn's Pippin; 4, Eyewood; 5, not known; 6, Vicar of Winkfield. (N. H. P.).—Brown Beurré.

Names of Plants.—We only undertake to name species of plants, not varieties that have originated from seed and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in firm boxes. Slightly damp moss or soft green leaves form the best packing, dry cotton wool the worst. Not more than six specimens can be named at once. (W. K.).—1, Nertera depressa; 2, Monochaetum Humboldtianum.

COVENT GARDEN MARKET.—NOVEMBER 17TH.

LARGE supplies of St. Michael's Pines to hand, causing home-grown fruit to be much depressed. Grapes still in heavy supply, consisting mainly of such late sorts as Gros Colman, Alicantes, and Lady Downe's. Business quiet.

FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples	1/6	to 4/0	Melon	0/0	to 0/0
.. Nova Scotia and			Oranges	6/0	12/0
.. Canada, per barrel	12/0	21/0	Peaches	0/0	0/0
Cherries	0/0	0/0	Pears	1/0	2/0
Cobs	100 lb.	60/0	Pine Apples English ..	1/6	2/0
Figs	dozen	0/6	Plums	1/0	2/0
Grapes	lb.	0/6	St. Michael Pines ..	4/0	6/0
Lemons	case	10/0	Strawberries	per lb.	0/0

VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Artichokes	1/0	to 0/0	Lettuce	1/0	to 1/6
Asparagus	0/0	0/0	Musbrooms	0/6	1/0
Beans, Kidney ..	2/0	3/0	Mustard and Cress ..	0/2	0/0
Beet, Red	1/0	2/0	Onions	0/3	0/0
Broccoli	0/0	0/0	Parsley	2/0	3/0
Brussels Sprouts ..	1/6	2/0	Parsnips	1/0	2/0
Cabbage	1/6	0/0	Potatoes	4/0	5/0
Capsicums	1/6	2/0	.. Kidney	4/0	5/0
Carrots	0/4	0/0	Rhubarb	0/2	0/6
Cauliflowers	3/0	4/0	Salsafy	1/0	1/0
Celery	1/6	2/0	Scorzonera	1/6	0/0
Coleworts	2/0	4/0	Soakale	0/0	0/0
Cucumbers	0/3	0/4	Shallots	0/3	0/6
Endive	1/0	2/0	Spinach	bushel	3/0
Herbs	0/2	0/0	Tomatoes	lb.	0/2
Leeks	0/3	0/4	Turnips	bunch	0/4

PLANTS IN POTS.

	s. d.	s. d.		s. d.	s. d.
Aralia Sieboldi ..	9/0	to 18/0	Ficus elastica ..	1/6	to 7/0
Arbor vitae (golden)	6/0	9/0	Finchia	per dozen	0/0
.. (common) ..	6/0	12/0	Foliage Plants, var.	each	2/0
Asters	0/0	0/0	Heliotropo	per dozen	0/9
Bedding Plants, var.	0/0	0/0	Hydrangea	per dozen	0/0
Begonias	4/0	9/0	Ivy Geraniums ..	per dozen	0/0
Chrysanthemum ..	6/0	12/0	Lilium anatum ..	per doz.	0/0
Cockscombs	0/0	0/0	Lobelia	per dozen	0/0
Cyperus	4/0	12/0	Marguerite Daisy ..	dozen	6/0
Dracena terminalis,	30/0	60/0	Mignonne	per dozen	3/0
.. viridis	12/0	24/0	Musk	per dozen	0/0
Erica, various ..	9/0	12/0	Myrtles	dozen	6/0
.. hyemalis ..	12/0	24/0	Palms, in var. ..	each	2/6
.. gracilis	9/0	12/0	Pelargonium, scarlet,	doz.	3/0
Euonymus, in var.	6/0	18/0	Pelargoniums ..	per dozen	0/0
Evergreens, in var.	6/0	24/0	Primula sisensis ..	per doz.	4/0
Ferns, in variety ..	4/0	18/0	Solanums	per doz.	9/0

CUT FLOWERS.

	s. d.	s. d.		s. d.	s. d.
Abutilons	12 bunches	2/0 to 4/0	Lily of the Valley, 12	sprays	0/0 to 0/0
Arum Lilies	12 blooms	4/0 6/0	Marguerites	12 bunches	2/0 6/0
Asters	12 bunches	0/0 0/0	Mignonne	12 bunches	1/0 3/0
Azalea	12 sprays	1/0 1/6	Narciss, Paper-white,	bunch	0/4 0/0
Bouvardias	per bunch	0/6 1/0	.. White English,	bunch	1/3 1/6
Camellias	12 blooms	2/0 4/0	Pelargoniums, per 12	trusses	0/9 1/6
Carnations	12 blooms	1/0 3/0	.. scarlet, 12 trusses		0/4 0/0
..	12 bunches	0/0 0/0	Roses	12 bunches	0/0 0/0
Chrysanthemums 12	bunches	2/0 6/0	.. (double), per dozen		0/6 2/0
..	12 blooms	0/6 3/0	.. Tea	dozen	0/9 3/0
Cornflower	12 bunches	0/0 0/0	.. red	dozen	1/0 2/0
Dahlias	12 bunches	0/0 0/0	Parma Violets (French)		4/0 5/9
Euphyllum	doz. blooms	0/6 0/0	Primula (single) ..	per bunch	0/6 0/0
Encubias	per dozen	3/0 6/0	.. (double) ..	per bunch	0/9 1/0
Gardenias	12 blooms	3/0 5/0	Pyrethrum	12 bunches	3/0 6/0
Gladioli	12 bunches	0/0 0/0	Stephanotis	12 sprays	4/0 6/0
Hyacinths, Roman, 12	sprays	1/6 2/0	Stocks, various ..	12 bunches	0/0 0/0
Lapageria, white, 12	blooms	2/0 4/0	Tropaeolum	12 bunches	1/6 2/0
Lapageria, red ..	12 blooms	1/0 2/0	Tuberose	12 blooms	0/6 1/0
.. longiflorum, 12 blms.		6/0 8/0	Violets	12 bunches	1/0 1/6
Lilac (white), French,	bunch	6/0 8/0	.. Czar, French, per	bunch	1/3 1/9



DAIRY COWS.

SINCE writing our last paper we have had to inspect the farmhouse and outbuildings of one of our tenants. The cow sheds were sufficiently snug and commodious, but the yard was not well littered, and there was much foul litter in it. When we came to the dairy some pats of butter were handed to us with the remark, "We are rather proud of our butter." The dairywoman had doubtless done her best, and the butter was of a rich colour and attractive appearance, but it had an offensive odour that told us unmistakeably it was not good. We must be careful here to explain that nothing wrong was perceptible about the butter till we held it up and smelt it closely: then, and not till then, did we detect that faint subtle taint which so unmistakeably tells us that from some cause or other the butter will prove offensive to the palate of a connoisseur. This simple process of testing butter by the sense of smelling tells us at once if it will prove acrid to the palate or not. If it does so the fault may arise

from a variety of causes. We have already shown how important it is to have a special dietary for dairy cows, to have also a full supply of pure water, and to take care that they cannot get at horse dung or other foul litter. In addition to such precautions we must have perfect cleanliness, not only of the dairy itself and of every vessel and utensil used in it, but also of the atmosphere of the dairy. It must be clearly known that butter may be spoilt by exposure to foul odours, as well as by improper food having been given to the cows. Two things go far to insure a supply of good butter at this season of the year—a dietary of bran, the best meadow hay, carrots and crushed oats, and the milk of a cow that has just calved. It is for this reason that we try to have a cow or two to calve at intervals of two or three weeks throughout the winter. It was the plea of “stale” cows by dairywomen as an excuse for bad butter in winter that caused us first of all to recognise the importance of having a few cows to calve at intervals from autumn till spring. The home farm manager must, however, after giving due heed to diet and cleanliness, also be on the alert to see that the whole of his orders are carried out. If he does not do so it is quite possible that some morning “the squire” or “my lord” may send for him, and, handing him a pat of the butter that is made daily for table use, request him to “smell that.” Compliance with such a request is not unaccompanied by a sense of humiliation as well as of vexation; and in order to avoid undergoing such an ordeal we are bound to see for ourselves that every detail of cow and dairy management has close and full attention.

Quantity as well as quality of food must also have intelligent attention. We give no statement of weight or measure, but rather recommend thoughtful judicious treatment. Feed each cow according to its size, strength, and constitution. A little watchfulness and care here will soon enable us to feed the cows so as to keep up a healthy condition without waste. It is obvious that the huge frame of a shorthorn requires more sustenance than that of the smaller Jersey or Kerry. This mention of some of the different breeds of cows brings us to the important question of which are the best cows for dairy purposes. For a large home farm where distinct dairy and stock herds are kept Jerseys generally have preference, but for a small farm a cross-bred animal from a carefully selected Guernsey cow and a shorthorn bull bred from a deep milking cow is best, because in such an animal we have the best possible combination of an abundant yield of rich milk with that tendency to lay on flesh which enables us to turn a barren or otherwise faulty cow to best account by fattening it for the butcher.

Avoid turning dairy cows out upon grass land during winter; they can derive no good from bare pastures, and when once settled in yard and sheds it does harm to disturb them. If they are turned out to roam over the grass occasionally they are never so quiet as they ought to be in the yards, and are always in a restless condition when let out of the cow house in the morning. We have found it answer best to give them the bran with minced Carrots or Mangold during milking. After milking they have hay in the racks and cribs in the yards, and while the hay is being eaten there is always more or less of bullying. Like boys at a public school, cows in a yard soon find their level, and keep it too; for which reason we always keep small or weak cows apart from the others, and any very pugnacious cow has brass knobs screwed upon the tips of the horns. It may appear to experienced farmers that we needlessly enter upon trivial details. We must ask their forbearance for the sake of those beginners who, we always strive to remember, require every little matter to be made clear for their guidance.

WORK ON THE HOME FARM.

We have just removed the ewe flock at the home farm from turnip folds to grass. While the weather continued fine we gladly turned this flock to account for folding upon white Turnips with a strong growth of green tops; but the first sharp frost made us anxious about them, and when heavy rain followed we gave the shepherd strict orders that if cold wet weather continued Turnip folding must cease for all pregnant ewes.

To allow them to consume large quantities of such food in unfavourable weather is to risk a serious loss of lambs, for the mass of cold watery food causes a chill to the body, the daily repetition of which is most dangerous. Much harm is also done when ewes are kept in a very muddy fold, for there is much straining, as the feet—or, to be correct, we ought to say the legs—are lifted with difficulty out of the mud. We are so fond of sheep folding that we have kept both our ewe flocks out upon the arable land as long as was safe. Hoggets and crones will continue in folds almost without exception till they are ripe for market. When walking through an eleven-acre field of Rye upon the home farm a few days ago, we came upon a striking example of the value of sheep folding. About half the field was under Winter Tares in spring, and they were folded off by the ewes and lambs, well fed with corn and lamb food. The other half had a catch crop of Oats after Swedes, and now the Rye shows where the folding was done to an inch, the growth on that part of the field being twice as strong as it is on the other part. The lesson is to us more than usually important, from the fact that after the folding of the Tares was finished we were unable to have the land ploughed at once, as the hay-making was upon us; so it was left untouched for several weeks fully exposed to a parching sun, and we feared there must be a consequent loss of fertility. If there was any such loss it was of so trifling a nature that it is not now perceptible, and we are bound to conclude that the fertilising constituents of the sheep manure, especially that of the urine, was absorbed and retained by the soil. As the tups are withdrawn from the ewes they will be fattened for the butcher, to whom they will, of course, be sold at a less price than we gave for them; but when they have served our turn for breeding purposes we always dispose of them, as we prefer lamb tups to older animals.

SMALL HOLDINGS.

It may be of interest to many of the readers of the *Journal of Horticulture* to know that a Society has been formed under the auspices of the Earl of Onslow, the Earl of Egmont, the Right Hon. Henry Chaplin, M.P., and other large landowners, the object of which is to provide every industrious labourer, not with three acres and a cow, but with one acre and a cottage. There is no doubt this latter can be done, and well within the means of an agricultural labourer, and there is also no doubt that a man with an acre of at all decent land at the back of his house deserves to starve if he cannot feed himself and his family off it by working in his spare time. I look upon the “three acres and a cow” as an absurdity. As a general principle it is remunerative to grow what you want for the consumption of your own family, but if you have to market your produce, as is the case in cow-keeping, profit disappears, and your labour goes to pay railway charges and the expenses of brokers and other middlemen. I believe the price of fresh milk in most country parishes is 3d. a quart, and of good skim milk 1d. Introduce into those parishes as many more cows as there are now, and it will pay nobody to keep them. On the other hand, a labourer comfortably housed, and tilling an acre of land adjoining his house, can grow enough corn to feed his family, and thus save his baker's bill. He can also have a garden large enough to grow vegetables—Potatoes, Peas, Beans, &c.—for his own use and for fattening a couple of pigs, to say nothing of the poultry he could keep in condition, and feed on the produce of his land. In fact, sugar, tea, and clothing need be his only sources of outlay. The economical aspect of the question—viz., how can these things be provided on sound financial principles? has been considered and solved satisfactorily, and the Society will be in full work in less than a month.—W. M.

OUR LETTER BOX.

Storing Mangold Wurtzels (*Lankhills*).—If the ground is perfectly drained they may be stored in a pit as in your first sketch; if there is any fear of water accumulating in the pit, store on the level and dig a trench right round, covering the heap with the earth excavated.

METEOROLOGICAL OBSERVATIONS.


CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude, 111 feet.

DATE.		9 A.M.					IN THE DAY.					Rain
1886. November.		Barometer at 32° and Sea Level	Hygrometer.		Direction of Wind.	Temp. of Soil at 1 foot.	Shade Temperature.		Radiation Temperature			
			Dry.	Wet.			Max.	Min.	In sun.	On grass.		
		Inches.	deg.	deg.		deg.	deg.	deg.	deg.	deg.	In.	
Sunday	7	29.546	39.5	37.7	N.	47.1	48.1	36.8	72.3	26.8	—	
Monday	8	29.786	33.9	33.7	S.E.	46.2	47.9	31.1	78.2	22.3	—	
Tuesday	9	29.308	45.1	43.5	N.E.	44.8	45.9	33.2	50.6	27.6	0.238.	
Wednesday ..	10	29.314	44.7	44.6	N.E.	44.8	47.2	33.4	50.8	28.7	0.598	
Thursday ..	11	29.509	44.2	44.2	N.	45.0	46.7	40.8	49.4	32.0	0.367	
Friday	12	29.366	43.1	41.7	S.W.	45.3	48.4	40.7	48.4	36.8	0.083	
Saturday	13	29.486	42.7	41.4		45.4	49.6	39.2	75.1	32.8	0.022	
		29.502	41.9	40.9		45.5	47.7	37.3	60.7	29.6	1.218	

REMARKS.

7th.—Fine bright cold morning, cloudy in afternoon, fine bright night.
8th.—Fog early, bright cold day.
9th.—Dull, with spots of rain in morning; wet afternoon and evening.
10th.—Very wet day, clear bright night.
11th.—Wet from early morning till midnight.
12th.—Overcast morning, damp afternoon, wet evening.
13th.—Fine and pleasant, with some sunshine.
A cold week with a considerable fall of rain.—G. J. SYMONS.



COMING EVENTS

25	TH	Birmingham Chrysanthemum Show (second day).
26	F	Sale of Orchids in the Cheapside Rooms.
27	S	
28	SUN	1ST SUNDAY IN ADVENT.
29	M	
30	TU	
1	W	Sale of Bulbs at Mr. Stevens's Rooms.

EPIPHYLLUMS.

ONLY a few years ago these were popular plants for winter decoration, but fashion and the demand for abundance of flowers suitable for cutting has left them practically unrecognised. This is to be regretted, for no more effective plant than the Epiphyllum when profusely flowered can be grown. In private establishments their attractions have not generally been seen to advantage, they have been kept too long until their heads or branches have become heavy, and they need liberal support to prevent breaking. The beauty of such specimens is destroyed, for they cannot be used in any arrangement or group when the object is to present a telling effect. Epiphyllums can, however, be grown to present a very pleasing and picturesque appearance when grouped suitably with other plants. To accomplish this result old plants that require much support must be discarded, and young ones grown for the purpose. It may not perhaps be known that they can be grown in about twelve months with heads 1 foot to 18 inches across as easily as a Croton, Poinsettia, Plumbago, or a Primula. To keep on hand a creditable stock of Epiphyllums most suitable for decorative purposes, they should not be retained more than three years, two years being better for the purpose in view; for if they are retained longer the heads become large and heavy, the pots are too large for many purposes, and if the roots are confined they have a checked, stunted appearance. One great objection to keeping large or old plants is the amount of room they occupy the whole year, which is not the case with young ones grown on annually or every second year. The well-grown shapely specimens produced by the trade to meet the demand a few years ago are very similar to the plants, perhaps scarcely so large, that I advise to be grown as the most suitable for the various forms of decoration.

The first matter of importance in raising a quantity of these plants is the stock upon which they are worked. The one used is *Pereskia aculeata*, but for plants with tall stems *P. Bleo* is said to be the most suitable on account of its stronger growth. Epiphyllums with tall stems are not, as a rule, so ornamental as those about 9 inches or 1 foot above the surface of the soil; a few tall plants can occasionally be utilised in grouping with admirable effect, but on the whole they are less serviceable than those on shorter stems. Many strike the cuttings of *Pereskia*, and then grow them on in pots until they are strong enough for grafting; but the best system in the preparation of stocks is to plant a vigorous young *Pereskia* in the corner of a warm house, where the night temperature will not fall below 60°. It will grow in any ordinary soil, and just to show that it is not particular in this respect, it may be stated that our stock plant is growing amongst cocoa-nut fibre refuse. When planted out it should be trained upright until it reaches a wire, and then under the roof of the house until it attains some yards in length, which it will do in a very short time after it is once established. The greater the length the growth is allowed to the thicker will be the stem. As the plant grows all

side shoots should be carefully removed. When it has extended about 14 feet it will make a dozen stout stocks that will be 9 inches above the surface of the soil, these and others 1 foot in length are of a very useful size. This shoot should be cut into lengths according to the length of stock required, allowing from 2 to 3 inches for inserting into the soil. When cut into lengths every eye from the axil of the leaves should be carefully removed, and the cuttings inserted in sandy soil in 3-inch pots. Let the leaves remain upon these stocks or cuttings. Split the top of the stock down the centre, and insert the scion at once, the scion consisting of a strong piece of Epiphyllum that will branch three ways if possible; small pieces with one or two joints should not be used. Remove the bark on each side of the scion, just the width of the stock, and then carefully insert it, making the two secure with matting. If the scion have a tendency to slip out when tying it, place a small pin through it and the stock; with care they can be tied without. A good watering should be given, and the pots stood or plunged in a close propagating frame. If shaded from the sun in a close moist frame the stock will be thoroughly rooted, and the scion and stock united in three weeks, when they may be gradually exposed in any warm house.

The best time for grafting is early in the spring or autumn; if done during the former season the plants, if grown on rapidly, will now average 1 foot across the heads. These plants will have to be well ripened after October, and will be later coming into flower than those worked in early autumn. Those grafted during the latter season will have filled the 3-inch pots with roots by spring, ready for placing in others 2 or 3 inches larger. In these fine heads 18 inches in diameter will be developed, and by November the following year they will be studded with flower buds. If two dozen plants are raised annually half the number should be grafted in autumn, and the others in spring. This will insure two sizes, and the plants will come into bloom at different times, thus naturally forming a succession. The *Pereskia* when once established and cut down in autumn for stocks will start again vigorously into growth, and produce equally good wood for stocks in the spring.

When plants with large stems are required, the best plan perhaps is to strike cuttings and then grow them singly in pots. Re-pot the stocks from time to time as they require root room until they are sufficiently strong for grafting at the desired height. The top portion can be cut into lengths for shorter stems.

Epiphyllums are very beautiful in baskets, and the best method of producing them is to insert four strong cuttings in a 5-inch pot, grafting them when inserted the same as advised for those placed into 3-inch pots. The length of these cuttings will entirely depend upon the size of baskets employed. The tallest should be in the centre, and the three lower ones at equal distances round the sides of the pots. Those at the side should be sufficiently long to reach the edge of the basket, so that the stock can be secured to it. One plant will fill a basket, but four fill it in much less time; in fact, in one season it will be well furnished by this method.

After the plants are worked keep them until the spring in a night temperature of 60°, in which progress will be slow, but in spring they will commence active growth with increased heat and moisture. During the growing season they delight in a warm close atmosphere, where they can be shaded from strong sun. Our plants grew particularly well last year in a house that never had the ventilators open. They must also be liberally supplied with water at their roots during the growing season. When the soil is kept moist about the roots they extend with great rapidity, but when allowed to become dry their fine silk-like roots quickly perish.

A general practice is to pot Epiphyllums with a certain amount of lime rubbish in the soil; in fact, many failures have arisen from the poor soil given to the plants. Lime

rubbish is not needed, and the better the soil the more satisfactorily will they grow. A very suitable compost in which these plants do well is rich fibry loam, one-fourth leaf mould, one-seventh of cow manure, and a liberal dash of coarse sand. A little charcoal in the soil proves beneficial if the loam is inclined to be heavy. When the pots are full of roots manure applied to the surface of the soil will keep the roots in activity and assist the plants wonderfully. Directly growth has been completed the stems should be ripened by gradual exposure to light and a cooler atmosphere. This is essential if they are to flower profusely; they will not flower on growths that are soft and unripened. The advance of these plants can be prevented at almost any time after a good growth has been developed—that is, say towards the middle or end of September, or even earlier, by the treatment advised. By following this method the plants can be brought into bloom successionally, but if left in the same structure, and subjected to heat and moisture, they soon start again.

Fatal results often attend the resting of Epiphyllums, which are due to the want of knowledge of their cultural requirements. The plants must not be removed from a close warm house to a cold one, or they suffer severely. They should be placed in a house 10° lower than the one in which they have been growing, less moisture should be given and more light. This is sufficient to bring growth to a standstill and ripen it thoroughly. Failure results very often during the ripening or resting period from subjecting the plants to a roasting system of culture. How many may have been ruined through being kept so dry at their roots until their branches and growth shrivel! This treatment destroys the whole of the roots, and the greater portion of the moisture stored in their fleshy growth is evaporated. They require a drier atmosphere than the ordinary stove, and a temperature of 50°, with just sufficient water at their roots to keep the branches in a fresh plump condition. After they are once hardened and ripened they will bear cooler treatment for a time, and may be safely kept in a cool house. If the soil is wet about the roots while the plants are in a cold house they are certain to fail.

To display Epiphyllums to advantage when they are in bloom they should be arranged with *Adiantum cuneatum* or other dwarf Ferns that will form a pleasing groundwork. Profusely flowered heads are shown to great advantage when they rise above the groundwork of green foliage. They can, however, be tastefully arranged amongst other flowering plants, but care should be taken to elevate them well above surrounding objects. Neat well-grown examples are strikingly beautiful for dinner-table decoration; they are also very ornamental in rooms standing singly in vases. Several other methods of utilising these charming plants are also detailed in Mr. L. Castle's treatise on Cactaceous plants.

The varieties *E. Russellianum* and *E. truncatum* are rather numerous, and all that I have yet seen are worthy of cultivation.—A NORTHERNER.

FRUIT JOTTINGS FROM KENT.

WE often notice early in the season (when too soon to make certain) glowing accounts of the large quantities of many sorts of fruits, which are supposed to be grown in various localities; but this is praising the pudding before eating it. Now, however, the case is very different, as we have used and marketed (I am sorry to say the latter not at all profitably) the various earlier kinds in their season, and stored away for successional use the more lasting varieties of Apples and Pears, together with Cobs and Chestnuts, for all of which this part of the country is so widely famed. Consequently we can write now with more satisfaction from past experience than from any speculative anticipations. Our experience is as follows, of successes and failures. With early forced Strawberries, Vicomtesse Hericart de Thury and Sir J. Paxton both did well, but a third and later batch (Sir C. Napier) were attacked by mildew, which was conveyed to several of the best bunches of Black Hamburgh and Golden Queen Grapes in the house. This, however, was quickly eradicated by the timely application of milk and sulphur to the pipes

that were then sharply heated. Out of doors Strawberries were generally a failure in this neighbourhood. Our Grapes, through being slightly overcropped, were a trifle deficient in bloom, and refused to keep so well as in former years. Peaches have been abundant indoors and out. We find Ivy an excellent protection in the spring, when the trees on the open wall are in bloom, if allowed to grow up a north wall where a wood adjoins (and no better use could be made of the wall), then to project over the wall to the south side above 1½ foot. Our wall, about 400 feet in length, is so furnished and we have not failed in a crop for two years in succession. Melons bore well in pits after early Potatoes, with fresh leaves added and mounds of good turfy loam and chopped up cow manure mixed. I prefer Hero of Lockinge for its handsome appearance and other good points.

Pears have done well with us, better than last year, and it is unusual to have too good seasons in succession. Of course, out of about 100 varieties there are, according to the seasons, many inferior sorts which will as time affords be removed and succeeded by more approved sorts. Apples have been but a scanty crop generally for such a favoured county. Of Plums and Damsons we had a superabundance. They were not marketable, and we do not wish to see so many again. Gooseberries were a complete glut at home and in the market. Black and Red Currants a heavy crop; the consequence, unusually low prices. Cherries the same. Nuts a very partial crop, but prices more than four times in advance of last year, when the supply was in excess of the demand. Through the uncertainty of the Apricot, both trees and fruit, I can give no favourable report. A word about outdoor Grapes. Three years ago we planted a Black Hamburgh, which had been forced in an 11-inch pot and produced a heavy crop against a partly east and south wall. This season it has borne heavily, one bunch in particular weighing within 1½ oz. of 2 lbs., sweet and good to eat, although not carrying a perfect bloom. I believe with Mr. Harrison Weir that much could be effected in the improvement of the quantity and quality of several varieties of Grapes grown on favourable aspects in the open air even by cottagers, if more skill and energy were applied in their cultivation.—WM. CHISHOLM, *Ocon Heath Gardens, Tunbridge.*

SHOW AND FANCY DAHLIAS AT THE NATIONAL DAHLIA SHOWS.

HAVING now before me the results of the last four years, I am able to give in the following analysis the relative positions of the different varieties according to the average number of times they have been staged at these four exhibitions, instead of merely the totals as in previous years. As regards the newer Dahlias, I have given in the case of those sent out in 1883 the average of the last three shows only; for those distributed in 1884 their two-years average; and for the 1885 flowers the number of times they were shown at this year's exhibition.

The most remarkable point brought out by this analysis is the sudden way in which Mrs. Gladstone, sent out for the first time only two years ago, has by a few rapid strides reached the premier position among Show Dahlias. And not only so, but if it is allowable to form our opinion of its merits by its position at the National Exhibition of the present year this flower stands far ahead of all competitors, being staged no less than forty times, while the second place was taken by Goldfinder with only twenty-three, followed closely by that old favourite James Cocker with twenty-two. Among the 1883 varieties taking good positions Imperial and Harrison Weir may be named, the former having risen eleven places, and the latter nineteen since last year. Mrs. Langtry (1885), in my opinion the finest of all the edged Show Dahlias, already stands well in this division, and will no doubt occupy even a higher position when more generally known. Mrs. F. Foreman (1884), Earl of Ravensworth (1883), and Arthur Blick (1884) appear in this list for the first time, taking the places of older kinds which have been pushed out of it by these new comers. Among the Fancies Lotty Eckford seems the best of the 1884 varieties, while General Gordon takes the lead of those sent out last year. For a Fancy Dahlia distributed only this year Pelican occupies a most promising position.

The only changes worth recording in the positions of the more established shows are as follows—Prince of Denmark, J. W. Lord, Constancy, and Miss Cannell have all risen from four to six places, while on the other hand, Herbert Turner has fallen eleven, and Alexander Cramond as many as twenty places. As regards the Fancy Dahlias, Mrs. N. Halls and Rebecca have gained respectively five and eight places, whereas Egyptian Prince, Florence Stark, and Edward Peck have each retreated six places.

The following are the totals for the last four National Dahlia Shows, the grand totals representing the data upon which the following tables have been based:—

1883	692 Shows and 269 Fancies.
1884	754 " 425 "
1885	837 " 355 "
1886	840 " 387 "
	3123 1436

SHOW DAHLIAS.

Position in Analysis.	Average number of times shown.	Name.	Date.	Raiser's Name.	Colour.
1	32.0	Mrs. Gladstone.....	1884	Hurst.....	Pale bluish.
2	21.7	Hon. Mrs. P. Wyndham	1881	Keynes & Co....	Yellow and rose.
3	20.0	Henry Waton.....	1873	Keynes.....	Yellow and scarlet.
4	20.0	James Cocker.....	1871	Keynes.....	Purple.
5	17.2	Goldänder.....	1881	Fellowes.....	Yellow and red.
6	16.0	William Rawlings.....	1881	Rawlings.....	Crimson purple.
7	16.0	Mrs. Harris.....	1873	Harris.....	White and lilac.
8	16.0	Mrs. Lungtry.....	1885	Keynes & Co....	Cream and crimson.
9	15.0	Prince of Denmark.....	1881	Fellowes.....	Dark maroon.
10	14.7	Ethel Britton.....	1880	Keynes & Co....	White and purple.
11	14.7	Joseph Ashby.....	1879	Turner.....	Shaded orange.
12	14.0	Prince Bismarck.....	1879	Fellowes.....	Puce.
13	13.5	James Vick.....	1881	Keynes & Co....	Purplish maroon.
14	13.5	Shirley Hibberd.....	1881	Rawlings.....	Dark crimson.
15	13.0	Vice-President.....	1838	Keynes.....	Orange.
16	11.2	Burgundy.....	1877	Turner.....	Dark puce.
17	11.2	Flag of Truce.....	1868	Wheeler.....	White and lilac.
18	11.2	Mrs. Dodds.....	1881	Keynes & Co....	Blush and lilac.
19	10.6	Imperial.....	1883	Keynes & Co....	Purple shaded lilac.
20	10.0	George Rawlings.....	1882	Rawlings.....	Dark maroon.
21	9.6	Harrison Weir.....	1883	Rawlings.....	Yellow.
22	9.5	John N. Keynes.....	1871	Keynes.....	Yellow.
23	9.2	John W. Lord.....	1877	Keynes.....	Orange buff.
24	9.0	Clara.....	1879	Rawlings.....	Rosy peach.
25	8.5	John Bennett.....	1875	Rawlings.....	Yellow and scarlet.
26	8.2	Julia Wyatt.....	1869	Keynes.....	Creamy white.
27	8.2	Mr. Harris.....	1881	Rawlings.....	Crimson scarlet.
28	8.2	Mrs. Shirley Hibberd.....	1877	Rawlings.....	Cream and pink.
29	8.0	Royal Queen.....	1875	Eckford.....	Cream and crimson.
30	7.2	Constance.....	1878	Harris.....	Yellow and lake.
31	7.2	James Service.....	1873	Keynes.....	Dark crimson.
32	7.2	Thomas Goodwin.....	1873	Goodwin.....	Dark maroon.
33	7.0	James Stephen.....	1882	Keynes & Co....	Orange scarlet.
34	7.0	John Wyatt.....	1877	Keynes.....	Crimson scarlet.
35	7.0	Mrs. F. Foreman.....	1884	Keynes & Co....	Lilac.
36	7.0	Lord Chelmsford.....	1880	Keynes & Co....	Maroon.
37	7.0	Ovid.....	1874	Turner.....	Purple.
38	6.7	Miss Cannell.....	1881	Eckford.....	Cream and crimson.
39	6.7	R. v. J. Goodway.....	1879	Rawlings.....	Maroon shaded purple.
40	6.5	Earl of Ravensworth.....	1883	Harkness & Son	Lilac.
41	6.5	Sunbeam.....	1881	Fellowes.....	Buff.
42	6.5	Walter H. Williams.....	1881	Keynes & Co....	Bright scarlet.
43	6.2	Emily Edwards.....	1879	Keynes.....	Blush white.
44	6.2	Herbert Turner.....	1873	Turner.....	French white.
45	6.2	H. W. Ward.....	1881	Keynes & Co....	Yellow and crimson.
46	6.0	Alexander Cramond.....	1872	Keynes.....	Shaded maroon.
47	6.0	John Stanish.....	1872	Turner.....	Crimson.
48	5.5	Champion Rollo.....	1881	Keynes & Co....	Orange.
49	5.5	Criterion.....	1881	Edwards.....	Creamy rose.
50	5.0	Arthur Blick.....	1834	Rawlings.....	Crimson.

FANCY DAHLIAS.

Position in Analysis.	Average number of times shown.	Name.	Date.	Raiser's Name.	Colour.
1	18.2	Gaiety.....	1879	Keynes.....	Yellow, red, and white.
2	17.0	Mrs. Saunders.....	1872	Turner.....	Yellow and white.
3	13.0	R. v. J. B. M. Camm.....	1873	Keynes.....	Yellow and red.
4	12.7	Fanny Stunt.....	1868	Pope.....	Red and white.
5	12.2	Cherister.....	1881	Keynes & Co....	Fawn and crimson.
6	11.0	Flora Wyatt.....	1871	Keynes.....	Orange and red.
7	10.0	George Barnes.....	1878	Keynes.....	Lilac and crimson.
8	9.7	John Forbes.....	1882	Keynes & Co....	Maroon.
9	9.5	Professor Fawcett.....	1881	Keynes & Co....	Lilac and brown.
10	9.2	Henry Glasscock.....	1875	Keynes.....	Buff and crimson.
11	9.2	Mrs. N. Halls.....	1881	Rawlings.....	Scarlet and white.
12	9.0	Hugh An tin.....	1881	Keynes & Co....	Orange and red.
13	9.0	Miss Browning.....	1880	Keynes.....	Yellow and white.
14	9.0	Miss Lily Large.....	1878	Keynes.....	Yellow and crimson.
15	9.0	Peacock.....	1877	Turner.....	Maroon and white.
16	8.7	Hercules.....	1877	Keynes.....	Yellow and crimson.
17	8.0	Lotty Eckford.....	1834	Eckford.....	White and purple.
18	7.7	Egyptian Prince.....	1873	Keynes.....	Orange and red.
19	7.7	John Lamont.....	1875	Keynes.....	Maroon and black.
20	7.5	Rebecca.....	1883	Keynes & Co....	Lilac and crimson.
21	6.7	Oracle.....	1877	Fellowes.....	Yellow and crimson.
22	6.0	General Gordon.....	1885	Keynes & Co....	Yellow and scarlet.
23	6.0	Pelican.....	1886	Keynes & Co....	White and purple.
24	5.7	James O'Brien.....	1881	Keynes & Co....	Yellow and crimson.
25	5.7	Jessie McIntosh.....	1880	Keynes & Co....	Red and white.
26	5.7	Pol y Sandell.....	1882	Keynes & Co....	Yellow and white.
27	5.2	Florence Stark.....	1879	Keynes.....	White and purple.
28	4.7	Wizard.....	1878	Fellowes.....	Fawn and maroon.
29	4.5	Edward Peck.....	1881	Keynes & Co....	Lilac and maroon.
30	5.7	Maid of Athens.....	1878	Keynes.....	Maroon, red and white.

The Dahlias in my own garden, although planted out in good time, were this year very late in coming into flower: in fact, on the day of the National I could not have cut a dozen blooms of any kind. Later on the flowers were very fine, but sorely infested by earwigs. The usual inverted flower pots and beanstalks having proved ineffectual, these

means of destruction were supplemented by a diligent search every night with a hand lantern and a jug of boiling water, but even then I was only able to retain a very few altogether uninjured blooms. At last the injury from these pests became so great that I had to resort to the extreme expedient of tying up all the good flowers in muslin bags. With me Mrs. Gladstone did not do so well this year as most other varieties, while Julia Wyatt never once yielded a decent bloom. The plants continued growing and flowering freely until the 3rd of the present month, when they were nearly killed by the six degrees of frost which occurred on that night, and yet in the middle of September with 5° of frost they had remained altogether uninjured. But then the air and foliage were comparatively dry on the night during which the first frost took place, whereas that which so severely crippled these Dahlias came at a time when the leaves were damp with a heavy dew and the air saturated with moisture. For some years past I have noted down the date on which my Dahlias have been entirely destroyed. Taking the last ten years (1877-86), I find the average date in the neighbourhood of London to have been November 8th, and the extreme dates, October 17th in 1881, and November 29th in 1878. The mean minimum temperature registered by a thermometer exposed on the surface of the lawn near the plants has been 20°, thus indicating 12° of frost, while the least cold which has killed them outright has been 8° of frost. This year they succumbed to 12° of frost on the 18th of this month, or ten days later than usual.

My best thanks are due to Mr. T. W. Girdlestone for having again so kindly assisted me in taking down the names at the Show, also to Messrs. Keynes, Williams & Co., and Messrs. Rawlings Bros. for supplying the few dates and raisers' names necessary to render the tables complete.—E. M., *Berkhamsted*.

WINTER PINE APPLES.

PINE APPLES do not hold the prominent position in British gardens that they occupied twenty years ago, but the fruit is as noble as it was then, and good home-grown specimens are still appreciated by many persons beyond any fruit. Where gentlemen's gardens have unfortunately been converted into market gardens, as many of them have during the last ten years, it was soon discovered that Pine-growing would not pay so well as some other crops and they were consequently expelled; but in gardens where the market business has not yet become the first consideration, Pines find a genial home in many cases, and in such instances winter fruits are always most valued, as other fruits are scarce then, and the Pines give a decidedly aristocratic appearance to the dessert; but Queen Pines which turn out so well when cut in summer are generally black in the centre and always flavourless in winter, and if any are being supplied with Queen Pines now and find them only third or fourth rate in quality they must not condemn the home-grown fruit, as this is natural to the variety.

There are other sorts, however, that are superb in winter, and it is these that should always be grown for use from November until April. Amongst these the Black Jamaica stands high. It is not a large-fruited variety, the produce not weighing, as a rule, more than 3 lbs., and the crown is apt to become rather large, but the flavour is excellent. Next to this I place the Smooth-leaved Cayenne with an average weight of 5 lbs., a compact crown, firm flesh, and of a first-rate flavour. It is altogether a good winter Pine. The third variety is the Charlotte Rothschild, and it is much of the same character as the preceding, only the leaves are prickly, and if anything is slightly coarser, but it swells freely during the short days, and the flavour is excellent. I find Pines will often swell in summer with little or no bottom heat, but if submitted to this condition now they would not move; and to have them large, juicy, and well flavoured the bottom heat must not be less than 80°, or exceed 95°. Where hot water cannot be used to raise it to the above temperature fermenting material should be employed. They do not require so much water now as in summer, but with a bottom heat of the kind indicated there is no danger of their being over-watered, as it is only when much water is given without bottom heat that they become yellow in the foliage and suffer.—J. MUIR, *Margam*.

COMMON FLOWERS FOR CUTTING.

MICHAELMAS DAISIES.—These are very useful, especially late in autumn, and where large quantities of flowers are in constant requisition. One of the best is *Aster Amellus*, which comes into flower in early autumn and continues until November. The flowers are of a shade which harmonises well with white and yellow, and are equally good for vase-filling and table decoration. *A. carnosa* is also a very good sort, of a soft lilac-blue shade, suitable for the finer kinds of decoration. Long-stalked heads of this one employed as the chief flower in large vases, sufficiently loosely arranged to avoid all crowding, with a few Dahlias, *Gladiolus*, *Madame Desgranges Chrysanthemums*, and a spike or two of *Hyacinthus candicans*, makes a massive and charming arrangement. *A. versicolor* is also one of the best, and moderately early. *A. ericoides* is

a remarkably graceful and pretty sort with white flowers. *A. elegans*, *A. simplex*, and *A. multiflorus* are small-flowered sorts with long spikes, very useful for mixed decorations. *A. dumosus* and *horizontalis*, very much alike, are both of value. *A. novæ-angliæ*, *A. novæ-belgii*, and *A. lævis* are perhaps the finest of all, but they are late in flowering.

The two hardy single *Chrysanthemums*, *C. uliginosum* and *C. maximum*, are both extra good. The latter is rather late in flowering, but it is a charming flower, a bunch or two enlivening an otherwise dullish arrangement most wonderfully. The former, however, is perhaps the most useful of the two, as it comes early into flower in autumn, and continues as late as the other. We use it for table work, bedroom glasses, and the smaller glasses as a rule. Both are easily increased by division, and require good culture. The common Ox-eye Daisy, it may be noted here, may be introduced to cultivation as a flower-producer with good results. Selected varieties, large and broad-petalled, may be had in flower for many months, always provided good soil is given them, and no seeds allowed to be produced.

DAHLIAS.—Like the herbaceous *Asters*, Dahlias are of the very greatest use late in autumn. They are doubtless somewhat uncertain to grow, owing to their liability to be damaged by early frosts, but in situations where the damage from this cause is of slight extent they amply repay for all trouble. I employ all Dahlias for cutting, and each class is so markedly distinct that it would be a positive loss were we to discard one. Perhaps the finest Dahlia for decorative purposes is *Juarezii*. With us it has shown only one fault, and that a grievous one—it is a remarkably shy flowerer. Mr. Tait is also somewhat shy, but nothing like *Juarezii*, and we are always able to secure a good supply of this the finest of white Dahlias. The best white, taking all points into consideration, is the very old *Alba floribunda*. Under good cultivation this comes very fine, and yields a most abundant supply of flowers. Like Mr. Tait, in order to secure a long stem, a good number of buds are sacrificed; but from a decorative point of view this is not a disadvantage, buds, flowers, and foliage being all alike valuable for furnishing. *Mont Blanc* we have for the first time, but the plants have been extremely shy of bloom, and we must reserve our opinion of its merits for another season. It is, however, a very pure white. Mrs. Haskins is indispensable with some, others would not tolerate it; Constance is, of course, valuable. Glare of the Garden is fairly useful; the crimson form we cannot tolerate. The fault of both is the shade of colour and the short time the flowers last when cut. Of the common double Dahlias varieties like *Julia Wyatt*, *Miss Browning*, and good scarlets are best. Double Dahlias are condemned for "lumpiness." I quite agree when that term is applied to floral globes shown on green boards; but when grown for cut flowers and arranged in large vases on long stalks with buds and foliage attached the expression does not apply. Taking all sections together they do not yield—or rather, it should be said, there is not so many used for decorative purposes as the *Show* and *Fancy* varieties by themselves. Then for church decorations they are simply invaluable, and I think I do not overstate the case when I say that where other flowers, such as *Gladiolus*, *Chrysanthemums*, *Arums*, &c., are sent by the dozen for this purpose double Dahlias are sent by the hundred. Of the *Pompons* not many are used; they are very pretty, but we have much better flowers in quantity for small glasses, while for large vases the double and single varieties are more suitable. A word or two as to cultivation. All of the *Cactus* section are propagated by root-division, as by this means it is found that more plants are produced. Many of the other sorts are propagated in the same way. Started late and established in boxes in cold frames we find all these do very well so. Moreover, these have a great advantage over strongly grown plants from cuttings, inasmuch as the tubers keep so much better through the winter, for it is our experience that the poorer the soil Dahlias are grown in the smaller and harder is the growth of the tubers, and the less liable are they to damp off during winter.

THE GLADIOLUS.—Perhaps this can hardly be termed a "common" flower, but there is no reason why it should not become so. The species generally are not of much value. The white form of *Colvilli* is fine, but requires a light soil in our climate to winter in the ground safely. *G. gandavensis* is very good for large vases, and fully worth the trouble of lifting in autumn and replanting in spring. The same remark applies to *aureo-purpuratus*. Then there is *branchleyensis*, than which there is none more useful, coming into flower as it does with the earliest of the *gandavensis* section, and continuing to supply spikes until stopped by frost; moreover, the shade of scarlet which it is possessed of is one that is perfectly manageable, and can be used along with almost any flower. It has further the great merit of cheapness to recommend it, and above all it is easy to grow, and increases from year to year. The hybrids of *gandavensis* are among our very

finest flowers for cutting. They are not common-looking, in character they are quite distinct from other flowers, they last long—about three months—and they are easy to grow. Expensiveness is the one drawback against them. No doubt there are plenty of cheap sorts, but when we have been used to the better varieties we do not take very kindly to these. We arrange the best of our spikes in long narrow vases, six or seven spikes being a sufficient number. Either *Gladiolus* foliage is set among them or the leaves of the smaller *Iris*s, which answer capitally. Spikes are also used in mixed arrangements in large vases, and the flowers are sometimes stripped off singly as used for table decoration or for very small glasses, but this way of utilising the flowers I do not recommend. If the water is changed, say twice a week, and the withered flowers removed, and occasionally shortening the stems, a good spike lasts for a very long time, the unopened buds opening to the very last one.

As to the best varieties to grow, any good sorts will do. Although I am myself now buying only early varieties. Shakespeare, for instance, is as early as any. It increases in numbers year by year, always form large and good corms, and although it is so early, yet with a sufficient number of plants it produces spikes—and good ones—as late as is possible out of doors. *Celamene* is also a most useful variety for the same reasons. Other good early flowering varieties are to be found in *A. Brongniart*, *Carnation*, *Archduchess Marie Christine*, *Caprice*, *Dalila*, *Daubenton*, *Diamant*, *Dumont d'Urville*, *Horace Vernet*, *Jupiter*, *Mabel*, *Ondine*, *Omphale*, *Orpheus*, *Panorama*, *M. Parmentier*, *Psyche*, *Rayon d'Or*, *Bicolore*, *Sylvie*, *Teresita*, and *Victor Jacqueminot*. In our northern climate good varieties, such as *Meyerbeer*, *Andre Leroy*, *Brennus*, and *Duchess of Edinburgh* are too late. *Brennus* represents a class which will flower, but only finishes a small corm, and can only be grown successfully by buying an annual supply. For ordinary purposes we plant in the beginning of April, and lift beginning of November, and endeavour to secure a ball of soil round the roots. The plants are kept in a cool house until the foliage yellows, and the corms are thereafter placed in pots, or laid out on shelves, according to the quantity of each variety, and in spring the roots are dressed and the spawn taken off and sown in rows. We are trying the new *Aureo-purpurata* hybrids, but as yet these do not compete with the above. They seem much less tender.—B.

ON MUSCAT GRAPES SHRIVELLING.

AS one of many who have been troubled with Muscat Grapes shrivelling this year, I wish to offer a few remarks on the subject with the view of eliciting results of the observation and experience of others on the cultivation of this the best of Grapes, so rarely seen in good form. We are certainly very much indebted to the writer of your leader (page 379) for his lucid exposition of the causes which lead to the shrivelling of this and other Grapes. We all knew the primary cause—viz., the supply of sap or moisture not being equal to the demand, but it has been a matter of difference whether the evil was in the soil or the atmosphere, the result of the unripened wood, or the want of some particular element necessary to sustain the complete development of the berry. As this is a subject of interest to many gardeners depending on the Muscat for a late supply, it would be a great benefit to have the real cause in each case found so as to be able to apply a remedy. For this purpose I state what I consider one cause, if not the chief one, as it has come under my own observation. In one vinery here we have six varieties—*Muscat of Alexandria*, *Black Hamburgh*, *Alicante*, *Gros Colman*, *Madre-field Court*, and *Foster's Seedling*. The latter being much subject to cracking, to find the cause I determined to keep the interior of the house as dry as possible after colouring commenced, about the middle of July. Previous to this the border had been well watered, the roots being both inside and out. The border then from sun heat and heat from the pipes became particularly dry on the surface. The Muscats began to shrink about the end of August. Doubtful as to lack of moisture in the inside border, they received two good waterings without any effect, the process going on gradually as before, resulting in partial loss of the Muscats and saving *Foster's Seedling*. To my mind this proved that Grapes liable to split can be prevented by a perfectly dry atmosphere when ripening, also the impossibility of growing satisfactorily Muscats and other Grapes in the same house.

The Grapes of the other varieties, excepting *Black Hamburgh* and *Madre-field Court*, are still on the Vines as fresh and plump as anyone could wish. Perhaps some of your correspondents may be able to explain the cause of the difference between the two growing side by side on Vines similar in health and strength.

One of your correspondents can trace shrivelling to immature wood, but this certainly is not the case with me, as the wood was ripe to the point as soon as the Grapes. This leads me to inquire how the laterals on some Vines are long in ripening after the fruit has commenced to colour, while others of the same sort (*Black Hamburgh*) are quite hard and brown even beyond the bunch before the change takes place in the berry. The reply I received to the same question from an old gardener some time ago, was the want of water in the case of the early ripened wood. Possibly it was something else retarding the ripening of the fruit.

Allusion has been made by "Experientia docet" to the Mount Melville Grapes to prove the necessity of shade for colouring and preserving Muscats. To prevent misconception as to the use of the paper shades I may explain the reason why they were there at all. My friend, the late gardener, in writing to me, expressed doubts as to his Muscats being up in time for the contest alluded to. In reply, I suggested clearing away the leaves to admit plenty of light, which was rather overdone, hence the use of the shade during the hottest part of the day only. Your correspondent has made a slight mistake regarding the awards for Grapes at the Show referred to, which I conclude was the last international in Edinburgh. The only first prize awarded to Mount Melville was for the collection of four varieties. The Muscat not being of high colour, although having fine berries, were scarcely ripe; this was accounted for by the fact of being started in the beginning of March—rather late to insure thorough ripeness in the first or second week of September without hard forcing.

Diverse measures are applied to secure perfect colouring, and are not generally attended with very great success. Experienced growers advise exposing the bunches to the sun from the time of setting; others keep them moderately shaded; a third allows the sun free access at the last stage of finishing. The Vine will endure singular treatment, and Grapes may be fairly well coloured either in sun or shade, all other things being favourable. Although like your correspondent (p. 380) I have done nothing wonderful, I may venture an opinion on Muscat colouring. The fruit should receive as much light as it is possible to give them, and as much of the direct rays of the sun as they can bear, which I should say in the north would be from early morning till ten o'clock, from three to four in the afternoon till sundown.

I find the best colour in the west end of the house, where they get the full effect of the sun after three o'clock. I have also had them fully exposed in the middle of the day, getting fair colour, but also slight shrinking and discoloration. The finest finished Muscats we have seen in the north for many years were exhibited at Edinburgh this year by Mr. M'Kelvie of Broxmouth Park. The bunches were somewhat small, but perfect in colour. It would be interesting and instructive to many of us to have the treatment pursued by him sketched out, more especially this year.

I trust that through the columns of the Journal opinions in connection with this subject may be freely advanced and discussed; perhaps resulting in fine Muscats being the rule instead of the exception.—W. WILLIAMSON.

LIFTING AND STORING ROOTS.

WHERE not already done this operation should be brought to a close forthwith, except in the case of Jerusalem Artichokes and Parsnips, as both of these esteemed roots are just as well left in the ground until the approach of spring, unless the ground which they occupy be required for other purposes, taking up enough of the former at one time to serve a week or two, and as much with a view to preventing the ground from becoming frostbound, thereby perhaps injuring the tubers, as manuring the soil, lay on a surface-dressing of short dung to the thickness of 3 inches. On the approach of frost a breadth of the ground containing the Parsnips should be covered with long dung or fern in order to prevent the ground and roots being locked in the firm grip of King Frost, thereby cutting off the supply of that root for the time being. Beetroot should be taken up carefully so as to preserve the roots entire, otherwise they would bleed, and this would be injurious to them. In order to preserve their freshness the roots should be packed in damp material, which will not tend to absorb the moisture from them, and for this purpose the most effectual, as well as simple method, is to open a trench about 15 inches deep in a dry border under a south or west wall, and then pack the roots therein closely together in rows, burying the crowns about 1 inch under the soil excavated in forming each succeeding trench. The leaves should not be removed from the roots. They will afford sufficient protection to the latter from several degrees of frost, but in the event of its being severe a protection of dry litter or fern will be necessary. Carrots, with the exception of cutting off the top to within an inch or so of the crown at the time of taking them up, may be treated in the same way as Beetroot. If wintered in this way there need be no apprehension of fermentation ensuing, as is sometimes the case where a quantity of them has been put together. Salsafy and Scorzonera may be wintered also in the same way, and will, like the Beetroot and Carrots, be found superior in flavour and appearance to those which have been wintered on the dry shed and sand principle.—H. W. WARD.

FORCING RHUBARB.

A GOOD supply of forced Rhubarb during the winter months is of great importance in most gardens, and it will be more so this year in some localities, on account of the shortness of the Apple crop. There are various ways of forcing Rhubarb. Those who have a Mushroom house may lift the large roots and pack some soil round them on the floor of his Mushroom house, which will be about the right temperature. But everyone has not the convenience of a Mushroom house, and their Rhubarb has to be forced out of doors. Fortunately, Rhubarb can easily be had without the aid of fire heat and forcing houses. All that is necessary is a good supply of leaves and a little stable litter to mix with them. About

one-third of the latter will be enough, so that the heat does not become too strong. It should be mixed and thrown up in a heap till it heats, and if turned over once or twice before putting it on the plants so much the better.

Rhubarb is generally planted in rows from 3 to 4 feet apart, Where a large quantity is wanted to come in for use at one time this is convenient enough. The pots are placed on three or four rows, and the whole space round the pots filled in with dung and leaves to a depth of 3 feet. When only a small quantity is wanted at one time this plan does not answer so well. If only one row is covered up the ridge is so narrow that the heat in it is soon gone, and if two rows are taken—which is better—the rows on each side are very apt to be trodden on by careless feet, and the crowns materially injured. I think it is better to have a row or rows set apart for forcing clear of the ordinary plantation, so that a trench about 18 inches wide can be dug out on each side of the row, and the soil packed up on each side and round the pots as shown in the accompanying section, or the whole of it on each side, having a greater body of manure in the centre. The soil so placed helps to retain the heat of the bed, and the trenches allow the heat to reach the roots more quickly, and with a less degree of heat than would be necessary if the material was placed on the surface. The leaves when properly prepared should be trodden in firmly to prevent it heating violently, as only a mild heat is wanted. When the pots are first opened out, instead of covering them again with dung, it is a good plan to make up a round bundle of clean straw, so that it will fill the hole made in the heap and can be pulled out again when necessary. This saves a little trouble and some breakage in "feeling" amongst the manure with a fork each time, and it affords a little ventilation in the pots. Two feet apart will be far enough to place the crowns. Those grown on each side of the row can of course be cropped with any

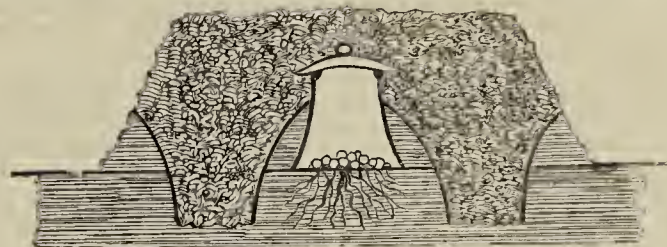


Fig 67.

ordinary summer crop that can be cleared off the ground again by the end of October or early in November. It should only be forced once in two years.—A WORKING GARDENER.

APHIDES.

[Substance of a paper read at the meeting of the Horticultural Club, Tuesday, Nov. 9th by the Hon. Sec.]

IN taking up this subject I have not attempted to do so in a scientific point of view. I have no pretensions to be a man of science. I have never dissected the stomach of an aphid, nor made a microscopic preparation of its big toe, and I can assure you I am not a commission agent for any of the numerous insecticides, which, if we were to believe their vendors, ought quickly to exterminate the whole race of these interesting little enemies of all mankind, at least of gardening mankind. I have something to say to them practically. I have read a great deal about them, and my hope is that by combining these two together I may be able to start a discussion which may give us a profitable evening.

I do not think that there is the slightest necessity to describe what an aphid is, for I feel convinced that all of you have had practical acquaintance with it, for whether it be the window plant of the cottager, or the grand conservatory of the nobleman, it is sure to make itself at home, make the most persistent efforts to maintain its footing when once it has got a hold; and if I refer to it in its ordinary form, it is simply to give me a sort of introduction to the more particular species of it to which to direct your attention.

I would more especially speak of those which are usually designated as woolly aphides, and particularly those which have attacked the Auricula, the Apple, and the Vine.

Some years ago I was startled on repotting my Auriculas by an insect which, although I had cultivated them for forty years, I had never seen before. At the same time my friend, Mr. Llewellyn, had discovered it on his plants. Mr. Horner had heard of it. Mr. Murray described it as Trama Auriculae, and I believe all Auricula growers were pretty considerably frightened at it. I must confess to having been so. I could not believe that a mass of insects clustering about the roots of a plant could be anything but injurious to it. None of us could tell whence it came, or how it was that it appeared almost simultaneously in various parts of the country. It had a suspicious appearance of kinship to the American blight, and knowing what a pest that is, we were therefore anxious to get rid of it; and now, looking back on those worrying years, I am persuaded

that many plants were injured by the application of remedies rather than by the insects. My belief now is that it does not do harm unless it fastens itself round the collars of the plants. I tried all kinds of washes, and insecticides without number, each of which was pronounced infallible—infallible they were in failing to effect any good, while the discovery of a very similar "heastie" on the roots of Lettuces and Sowthistles made one despair of ever getting rid of it. I confess to never having got quite rid of it, but perhaps since I found out that it was not harmful, as I had once thought, I have not been so careful about it.

Each plant may probably be said to have its own peculiar aphid, but there are, however, two other species of woolly aphids which, by the destruction they have wrought, are worthy of special note—I mean the American blight, *Schizoneura lanigera*, and the Vine blight, *Phylloxera vastatrix*; the former of these is probably known to those present who have seen in their own or in other gardens this woolly-looking substance. I remember once going into a nobleman's garden in the north of England, where all the Apple trees were in a hopeless state of decay, and the branches thickly studded with the woolly substance. Of course, this ought not to have been, and was simply the result of long neglect, although it is not by any means so easy to eradicate as some might imagine. It gets into the cracks and under the bark; for some years the injury done to the tree is not apparent, but then the canker is developed and the tree is rendered useless. It must be borne in mind as showing the difficulty of eradication, and that besides the fact of their hiding under the bark they descend as winter approaches to the root of the tree, where they are sheltered during the severe weather, and on the return of spring ascend to their former habitation. There are, however, remedies proposed for this pest, some or all of which may be tried; but I believe experience has proved that nothing succeeds so well as pure paraffin applied with a painter's brush and rubbed carefully into the branches and bark of the tree.

I now come to that species before which all other members of the family must pale, and on comparison with which they are but innocent babies. We remember, indeed, that a late distinguished horticulturist, when people were at their wit's end as to the cause of the Potato disease, attributed it to a member of the family which he designated *Aphis vastator*. This theory, however, did not meet with much favour, and has been for years utterly exploded, the species which well deserves the destructive epithet appended to it is the *Phylloxera vastatrix*.

This is an entirely new pest, and we owe it, amongst other nuisances, to America, where it was first observed on the leaves of the Vine in 1854, and was first observed in France on the roots of the Vine in 1868, although its identity with that discovered in America was not then determined. In 1869 Mr. Westwood wrote on a disease of the Vine which he had found at Hammersmith, and which he attributed to some species of aphid. Since then it has, as we know, travelled with fearful rapidity, as I shall presently show, but before doing so would like to give a history of it in as simple a way as I can, quoting from an article in the *Edinburgh Review*. The winged *phylloxera* pierces the upper part of a young leaf and deposits three or four eggs, around which a Pear-shaped gall forms on the back of the leaf. From these eggs are hatched male and female insects, which have neither trunks, mouth, nor internal digestive organs, their whole structure being devoted to the formation and fertilisation of a single egg in each female, which exhausts the life of the mother, who is reduced to a shell on the exclusion of the egg. From these, the winter or true egg, issues about the end of March the first of a series of agamous insect larvae, which in its turn produces a series of generations resembling each in all respects, except in the increased sterility of each descent. The number of succeeding agamous generations is probably to some extent dependent on the weather.

Many exaggerated statements have been made as to the rapidity of increase, but taken at its most moderate estimate it is evident that they increase far too rapidly, and I now give a few very startling statistics as to the ravages it has effected in France alone, adding at the same time that it has appeared in Italy, Germany, Spain, the Cape, Australia, and, indeed, in all wine-growing countries. The question has been debated whether the loss of the Vine is to be attributed to their being worn out after a period of from 1500 to 2000 years culture, and so afforded a suitable prey for the insect, or whether the insect itself caused the diseased condition of the Vine. I think the latter must be assumed to be the case. Twenty or thirty years in so long a period can hardly have made much difference, and if the Vines were worn out they must surely have been so before 1854. Just in the same way the Potato disease was said to have arisen from the degeneracy of the roots; but here again we must ask, Must not this have taken place before 1846? If it took place then the degeneration could not have been so rapid. It has been stated in the French report to the *Phylloxera* Commission that the total destruction of vineyards in France by the *phylloxera* has amounted to 1,000,000 acres, and the loss to France has been estimated at three milliards of francs. What this is it is hard to imagine, but when we recollect that the sum paid to Germany after the third invasion of France was two milliards it may readily be seen.

It may be asked, Has anything been done or can be done to stop its ravages? In answer to this I may say that in 1874 a sum of 300,000 francs was allotted as a premium for the invention of some efficacious way of dealing with this pest. Up to last year this had not been claimed, so that here is a little gauze-winged fly which you can crush with your finger defying all the science and intelligence of the world to extirpate it. Various experiments have been tried, such as flooding the vineyard and so destroying the larva at the roots; the use of sulphide of carbon and sulpho-carbonate of potassium had been recommended, but they

have not been of very real use, and nothing but stamping it out, destroying the Vines, and not cultivating them again as vineyards for a period of from five to eight years is what has been generally adopted, and for this to make up the losses of the Vine growers large sums have been each year added to the French budget. The idea of planting American Vines has been discountenanced by the Commission.

I would now conclude in the words of a writer in the *Edinburgh Review*, to which I am indebted for many of the facts about the *phylloxera*:—"In contemplating the insect world the most accomplished naturalist is soon taught how narrow is the limit of human knowledge, and how delicate is the balance of the productive forces of Nature. The self-satisfied empiric who is confident that he has explained away the old-fashioned ideas of creative power and wonders by his theories of self-guided evolution is struck dumb by the relics of a butterfly treasured up for the long ages that have elapsed since the deposit of the carboniferous strata. The theory of natural situation proves a ridiculous failure when its advocates are asked to explain the transformation of the winged insect. The most accepted laws as to animal reproduction are laughed to scorn by the fusion of the individual, which is carried to so remarkable an extent in the voracious and prolific race of the aphides.

"We are, indeed, forcibly reminded of what well became the brilliant genius of Newton when we see broad provinces struck with poverty by the ganzy wing of an almost microscopic fly, and an economic loss to more than one hundred and twenty millions sterling occasioned by the importation of a few eggs, perhaps a single egg, of the American *phylloxera*."



ROYAL HORTICULTURAL SOCIETY.—The following are the dates of the meetings of the Council, and of the Scientific, Fruit, and Floral Committees in 1887:—Council.—January 11th, February 8th, March 8th, March 22nd, April 12th, April 26th, May 10th, May 24th, June 14th, June 28th, July 12th, July 26th, October 11th, November 8th, and December 13th. Scientific Committee.—January 11th, February 8th, March 8th and 22nd, April 12th and 26th, May 10th and 24th, June 14th and 28th, July 12th and 26th, November 8th, and December 13th. Fruit and Floral Committees.—January 11th, February 8th, March 8th, March 22nd, April 12th, April 26th, May 10th, May 24th, June 14th, June 28th, July 12th, July 26th, August 9th, August 23rd, September 13th, September 27th, October 11th, October 25th, November 8th, and December 13th, all the meeting days being Tuesdays.

— WE regret to have to announce the death of M. CONSTANTIN BERNARD, which took place at Ixelles on the 13th inst. after a short and painful illness. The deceased gentleman, who was one of the most respected of Belgian horticulturists, was the director to the Ministry of Agriculture, Industry, and Public Works, and President of the Royal Linnæan Society, and held several distinguished orders.

— "J. S. B." sends the following note on the CULTURE ON *PERISTERIA ELATA*:—"Few Orchids succeed better with us than the Dove Plant; three plants have been flowering for weeks past. It is quite at home in the stove, and does not seem difficult to suit as to position; the three largest plants are growing on a wooden stage over a water tank, a good distance from the glass, while several smaller ones are growing on a front stage, the foliage nearly touching the glass, all doing equally well, often making two and sometimes three growths from a pseudo-bulb. In potting we use about two-thirds rough fibrous loam, one-third peat, and a few lumps of charcoal, a layer of sphagnum being placed over the drainage, with which the pots should be about two-thirds filled. This is an Orchid we do not see every day, nor is it to be seen in every collection. Why, it is hard to say, for besides being easily grown, it is very free flowering. Our largest plant has borne about 130 flowers on four spikes, while two smaller ones have borne three dozen each on a single spike, their pretty white flowers quite filling the house with their sweet scent."

— THE annual meeting of the LEEK AURICULA SOCIETY was held on the 16th inst. at Leek, where, after the appointment of the usual officers, with H. W. Nixon as Hon. Sec., the following resolution was unanimously passed:—That the second Exhibition shall be held April 30th, 1887, and the whole of the proceeds, after paying expenses, shall be devoted to the funds of the Leek Cottage Hospital."

— OCTOBER-BLOOMING CHRYSANTHEMUMS.—Mr. A. Young re-

marks :—" I am sure there are many readers of the Journal besides myself would feel grateful to Mr. Murpby, Mr. Molyneux, Mr. Davis, or any other experts if they would give a select list of good dark October-blooming Chrysanthemums which would be as useful as Madame Desgrange, Lady Selborne, Elaine, and other early white-flowering varieties. We have a good selection of white varieties, but have no dark ones to be compared to those named. Will the new Japanese William Holmes be a suitable variety?"

— THE second edition of Mr. L. Castle's treatise on ORCHIDS having been exhausted, a third issue is being prepared and will be published in a few days.

— REFERRING to HIGH AND DEEP PLANTING, "W." observes :—" The majority of gardeners will agree with Mr. Iggulden that shallow planting for fruit trees is to be preferred to deep planting, but I do not think that merely covering the roots of old forest trees is the principal reason of their not thriving afterwards, but to the decaying of the bark when buried beneath the soil. We had occasion lately to remove a Beech tree which had been buried to the depth of 2 feet about the stem, and which was almost decayed, and probably if it had been allowed to remain another season it would have died. I know of cases where of necessity soil had to be levelled about old forest trees, but immediately about the stem it was bricked round and the trees continued in health."

— A CORRESPONDENT informs us of the death of Mr. D. MCFARLANE, who for some years was gardener at Knowsley Cottage, and lately in business for himself at Olive Mount, Wavertree. Deceased left his house in good health and spirits on Saturday last at 1 o'clock P.M., November 20th inst., and was shortly afterwards found dead in the stovehole adjoining his dwelling. He was interred at Knowsley churchyard on the 23rd inst. He leaves a wife and five children to mourn his loss. Mr. McFarlane was an excellent gardener, and a man that was highly respected amongst the gardeners in the vicinity of Liverpool.

— MR. G. COLVILLE, Linethwaite, St. Bees, replying to a correspondent's question in last week's Journal observes :—" MUSA CAVENDISHI is the most valuable Banana for fruiting in a small size in an ordinary plant house. Musa sapientum, I think, is the one he refers to. It requires a much higher temperature than M. Cavendishi—namely, 70° to 90° in summer and 60° to 70° in winter. The soil must be exceedingly rich and by no means adhesive, rather of a light character, and well drained, in order that copious supplies of water may be given. Suckers will fruit within the year if shifted from pot to pot and thence into tubs. The produce of one plant, if well grown, will weigh from 15 to 30 lbs."

— "HORTUS" writes :—" At page 447 Mr. Bardney speaks of the superiority of PARISIAN BLINDS, and also says that they do not obstruct the light like other blinds. I should like some who have used these blinds to give their opinions, as from experience I cannot speak favourably of them, for they certainly obstruct the light to a greater extent than ordinary scrim. The working is anything but easy unless the roof is very steep. The waste of time in rolling them up and down as compared to the ordinary blinds with rollers and pulleys is a very serious matter especially where labour is short and two or three houses want attending to at the same time. We have over £100 worth in use, so I think I can speak from experience."

— AT the recent Exhibition of CHRYSANTHEMUMS AND FRUIT HELD AT BATH Messrs. R. Smith & Co., the well-known Worcester nurserymen, staged a very fine collection of Apples and Pears, and these, though not for competition, were rightly deemed worthy of high commendation by the Judges. Nearly all the best sorts in cultivation were represented, and very correctly labelled, while a great number of both Apples and Pears exhibited by private growers in the various classes provided for them were wrongly named. Particularly fine were Pears Glou Morceau, Easter Beurré, Beurré Diel, Doyenné du Comice, General Todleben, Pit-maston Duchess, and Marie Louise; while the best Apples were Nelson's Glory, Cox's Pomona, Welford Park Nonesuch, Peasgood's Nonesuch, Alfriston, Ecklinville, Wellington, Golden Noble, Waltham Abbey Seedling, Prince Albert, Tower of Glamis, Worcester Pearmain, Lord Derby, and Warner's King.

— MR. E. R. CUTLER informs us that at a meeting of the Committee of the GARDENERS' ROYAL BENEVOLENT INSTITUTION, held on the 18th inst., Harry J. Veitch, Esq., of Chelsea, was unanimously elected

Treasurer of this Institution in the room of Edward Tidswell, Esq., who has resigned that office on account of serious ill health; and at the same meeting it was determined to make an addition of ten pensioners to the list in January next, six of whom will be admitted without election under Rule 6, they or their husbands having been subscribers for fifteen clear years. An election will take place for four pensioners out of a body of seventeen selected and approved candidates. The voting papers will be issued on or about the 16th December.

— GROS MAROC GRAPE GRAFTED ON BLACK HAMBURGH :—Mr. G. Abbey writes, " Mr. Tilbrook, the respected and able gardener to B. Brown, Esq., Houghton Hill, Huntingdon, is very successful with Gros Maroc Grape. A finer example of this really handsome fruit could not be wished than that shown at the recent St. Neots Chrysanthemum Show. The Grape was large in bunch, quite large enough for any purpose, though it may only be half that of Gros Colman, and the berries were not only large, but of a very decided oval shape, almost as much so as in the Muscat of Alexandria. The finish was perfect, the bloom so dense as to resemble hoar frost, through which the intense black or purple of the skin shone in a remarkable manner. There was not the slightest trace of a bluish, and it was deservedly much admired. Mr. Tilbrook attributes the whole of his success to the Gros Maroc being grafted on Black Hamburgh. There is no comparison between the Gros Maroc on its own roots and the Gros Maroc on the Black Hamburgh; the fruit on the latter is finer in every respect, not omitting quality. The Black Hamburgh as a stock enhances the value of all coarse Grapes, and so does Muscat of Alexandria at least such is my experience—the appearance is better and the quality improved; but the Black Hamburgh and Muscat of Alexandria are deteriorated in quality by being worked on coarse varieties."

CARNIVOROUS PLANTS.

At the fortnightly meeting of the Birmingham Gardeners' Society, November 3rd, Mr. W. B. Latham, Curator of the Birmingham Botanical Gardens, read a most interesting paper on "Carnivorous Plants," illustrating his subject with a large assortment of these plants, and the following is a slightly condensed report of his remarks :—

The subject itself is one of great interest to scientific men, and has attracted much attention at various times. A paper was read by Sir Joseph Hooker at the meeting of the British Association at Belfast in 1874, in which these plants were brought very prominently before the notice of naturalists. In consequence of the practical nature of Sir Joseph's—then Dr. Hooker—remarks, and the interesting facts placed before his audience, many scientific men who had not hitherto devoted much attention to the subject began thinking and investigating. Much had been previously written on the subject, and I am not aware that anything new was to be found in Dr. Hooker's paper if we except a description of the inner surface of some species of Sarracenias of peculiar interest, and which I shall hereafter refer to. But the Doctor's paper, although really the revival of an old subject, was evidently written for the purpose of suggesting a most interesting field for investigation to the botanist and others.

We had at our Botanical Gardens just then many inquiries about these plants, and several expressed surprise that insect-eating plants existed. Many years ago that most zealous horticulturist, Mr. Andrew Knight, experimented on some plants of Dionæa, and placed them in such a position that no insect could get at them, and some of these he supplied with bits of raw beef, and they flourished much better than others kept without animal or insect food, and he found it difficult to keep them alive. Mr. F. Darwin a few years since experimented on a plant of Drosera rotundifolia, and the results entirely substantiated the experiment made by Mr. Knight, and found that plants fed with animal matter were far more vigorous and flourishing than those which were not fed, and the seed from the fed plants showed a large increase in weight over the seed from the plants which were not fed.

The Venus's Flytrap (Dionæa muscipula) is the most remarkable of the insectivorous plants, and is, in fact, one of the most wonderful in its organisation in the vegetable kingdom. We are often told that "there is nothing new under the sun," and the mechanical action of this plant is almost enough to make one wonder whether the inventor of our common rat or rabbit trap did not take a lesson from this vegetable wonder. One thing is certain, they both act on the same principle, closing with rapidity upon their prey. This plant is a native of the eastern part of North Carolina, and found growing in swamps, and it has therefore a limited geographical range. Specimens of

this plant appear to have been sent to this country about 1765, and living plants in 1768, and at that time it had not suggested itself to botanists that the object of these traps was to procure a supply of food to the plants. Linnaeus affirmed that when the insect ceased to struggle that the leaf opened and permitted it to escape, but Linnaeus evidently had not seen living plants and their action, and recorded his opinion from dried specimens. It must now be evident to every cultivator of this plant how it grips and devours its prey.

Some fifty or sixty years ago Dr M. A. Curtis, an American botanist, made some practical observations on the *Dionaea* in the midst of its native district, and he stated that the little prisoners are not suddenly crushed and destroyed as sometimes supposed, for he often liberated the captive flies and spiders, and he also observed that those not released were made subservient to the nourishment of the plants. Dr. Curtis also noticed that sometimes the insects were enveloped in a fluid of mucilaginous consistency, which seemed to act as a solvent, the insect being more or less consumed in it. These investigations by Curtis led to further examinations by Mr. Cranby, who found that the fluid is always present around the captive insect in due time, provided the leaf is in good condition and the prey suitable; that this fluid exudes from the leaf itself, and not from the decomposing insect. He also noticed that bits of raw beef, although sometimes rejected, were generally acted upon in the same manner, the leaf closing tightly upon the beef, surrounding it with the fluid, and then dissolving and absorbing it. This fluid may therefore be assumed to be analogous to the gastric juices of animals, dissolving the food and rendering it fit for absorption by the leaf. The highly sensitive trap attached to the leaf of the *Dionaea* is truly a deadly snare, keeping closely shut until the insect is dead and absorbed into the plant. Until this is accomplished it does not open again.

¶ In the report of the British Association for 1873 there is a most interesting paper by Dr. Burdon Sanderson on the electrical phenomena which accompanies the contraction of the leaf of the *Dionaea muscipula*, observes—"Strange as it may seem, the question whether these contractile movements are accomplished by the same electrical changes as those which occur in the contraction of a muscle and in the functional excitation of nerve has never yet been investigated by vegetable physiologists." By these experiments Dr. Sanderson has shown that these currents are subject in all respects, so far as yet investigated, to the same law as that which governs the action of muscle and nerve.

Nepenthes, Sarracenas, Cephalotus, and Darlingtonias do not close the foliage on their prey as do the *Dionaea*, and an interesting question is opened up. What power is at work to keep the insects in the pitcher-like formation of these leaves of these plants? Intoxication has been suggested, and however strange and unlikely this theory may at first sight appear, it is evident from experiments which have been made that the host supplies its guest with something stronger than water to drink. Dr. Mellichamp, another American botanist, in directing his attention to the inebriating or narcotic properties of these plants, drained a quantity of the pitchers of Sarracenas of the few drops of juice contained in them, and so collected about half an ounce of the secretion in a phial, and with this made careful experiments in ascertaining its intoxicating effects upon insects, chiefly house flies. From a half to a whole drachm of this secretion was placed in a small receptacle, and the flies thrown in occasionally, the liquid not being deep enough for immersion, and enabling them to walk about without swimming and the risk of being drowned. In this way some twenty flies were experimented upon with this result. At first the fly makes an effort to escape, though apparently never using his wings in trying to do so; the fluid, though not apparently very tenacious, seems quickly to saturate the fly, clinging to it, and clogging its action, rendering flight impossible. A fly when thrown into water manages generally to escape, and the water soon dries from its wings, but none escaped from the bath of Sarracenia secretion, and in their efforts to escape they soon got unsteady in their movements, often tumbling on their backs, and recovering, make frantic efforts to escape, but quickly stupor overtakes them, and profound anaesthesia or death seizes them. Dr. Mellichamp goes on to say, "I had no doubt, from the complete cessation of all motion, and from their soaked and saturated condition, that they were dead, and like dead men they were laid out as they succumbed to the powerful liquor, but to my great surprise, after a longer or shorter interval, from half an hour to an hour or more, they indicated signs of returning life by slight motions of the wings, legs, or body, their recovery being gradual, and eventually when they crawled away they seemed to be badly crippled and worsted by their bath. After

contact with the secretion the flies first thrown in become still, seemingly dead, in about half a minute, but I notice that either from exposure to the air, or its strength exhausted by its action upon the victims first thrown in it, the effects were not so intoxicating on the last insects exposed to its influence. Anaesthesia or intoxication certainly did not occur so quickly, taking from three to five minutes generally to produce effect, and one rebellious subject held out for ten minutes. A cockroach thrown in succumbed almost immediately, as did also a small moth, and a common house spider much more slowly." Without doubt, therefore, the secretion found in the tubes of the Sarracenia is an intoxicant and a narcotic.

(To be continued.)

ROYAL METEOROLOGICAL SOCIETY.

THE first meeting of this Society for the present session was held on Wednesday evening, the 17th inst., at the Institution of Civil Engineers, 25, Great George Street, Mr. W. Ellis, F.R.A.S., President, in the chair.

The following gentlemen were elected Fellows—viz., Mr. B. A. Dobson, Mr. T. Gordon, Mr. H. Mantle, Rev. J. Watson, and Mr. F. Wright.

The papers read were:—

1, "The Gale of October 15th-16th, 1886, over the British Islands," by Mr. C. Harding, F.R.Met.Soc. The storm was of very exceptional strength in the west, south-west, and south of the British Islands, but the principal violence of the wind was limited to these parts, although the force of a gale was experienced generally over the whole kingdom. By the aid of ships' observations the storm has been tracked a long distance out in the Atlantic. It appears to have been formed about 250 miles to the south-east of Newfoundland on the 12th, and was experienced by many ocean steamers on the 13th. When the first indication of approaching bad weather was shown by the barometer and wind at our western outposts the storm was about 500 miles to the west-south-west of the Irish coast, and was advancing at the rate of nearly fifty miles an hour. The centre of the disturbance struck the coast of Ireland at about 1 A.M. on the 15th, and by 8 A.M. was central over Ireland. The storm traversed the Irish Sea, and turned to the south-east over the western midlands and the southern counties of England, and its centre remained over the British Isles about thirty-four hours having traversed about 500 miles. The storm afterwards crossed the English Channel into France, and subsequently again took a course to the north-eastwards, and finally broke up over Holland. In the centre of the storm the barometer fell to 28.5 ins.; but as far as the action of the barometer was concerned, the principal feature of importance was the length of time that the readings remained low. At Galdston, not far from Lowestoft, the mercury was below 29 ins. for fifty hours, and at Greenwich it was similarly low for forty hours. The highest recorded hourly velocity of the wind was seventy-eight miles from north-west at Scilly on the morning of the 16th, but on due allowance being made for the squally character of the gale, it is estimated that in the squalls the velocity reached for a minute or so the hourly rate of about 120 miles, which is equivalent to a pressure of about 70 lbs. on the square foot. On the mainland the wind attained a velocity of about sixty miles an hour for a considerable time, but without question this velocity would be greatly exceeded in the squalls. In the eastern parts of England the velocity scarcely amounted to thirty miles in the hour. The force of the gale was very prolonged. At Scilly the velocity was above thirty miles an hour for sixty-one hours, and it was above sixty miles for nineteen hours, whilst at Falmouth it was above thirty miles an hour for fifty-two hours. The erratic course of the storm and its slow rate of travel whilst over the British Islands was attributed to the presence of a barrier of high barometer readings over northern Europe, and also to the attraction in a westerly direction owing to the great condensation and heavy rain in the rear of the storm. The rainfall in Ireland, Wales, and the south-west of England was exceptionally heavy. In the neighbourhood of Aberystwith the fall on the 15th was 3.83 ins., and at several stations the amount exceeded 2 ins. Serious floods occurred in many parts of the country. A most terrific sea was also experienced on the western coasts and in the English Channel, and the number of vessels to which casualties occurred on the British coasts during the gale tell their own tale of its violence. The total number of casualties to sailing vessels and steamships was 158, and among these were five sailing and one steamship abandoned, five sailing and one steamship foundered, and forty-two sailing and two steamships stranded. During the gale the life boats of the Royal National Life Boat Institution were launched fourteen times and were instrumental in saving thirty-six lives.

2, "The Climate of Carlisle," by Mr. T. G. Penn, F.R.Met.Soc. This is a discussion of the observations made at the Carlisle Cemetery. The mean temperature for the twenty-three years (1863-85) was 47.5°, the absolute highest was 95.0° on July 22nd, 1873, and the lowest — 5.5° on January 16th, 1881. The mean annual rainfall was 29.80 ins., the greatest monthly fall was 7.84 ins. in July, 1884, and the least 0.30 in. in January, 1881. The average number of rainy days was 174.

3, "Results of Hourly Readings Derived from a Redier Barograph at Galdston, Norfolk, during the four years ending February, 1886," by Mr. E. T. Dowson, F.R.Met.Soc.

4, "Results of Observations taken at Delanasan, Bua, Fiji, during the five years ending December 31st, 1885, with a Summary of Results for ten years previous," by Mr. R. L. Holmes, F.R.Met.Soc.

HIGH AND DEEP PLANTING.

(Continued from page 449.)

INSTEAD of a fruit or any other tree or shrub being planted on a level with the ordinary ground line, they ought always to be considerably above it, especially when the soil is of a close cold nature. I like to see the collar, or that portion of the stem where the topmost roots start from

just above the surface, and thus treated the exposed portion of the roots soon become of a more woody nature and clothed with bark similar to the stems. I do not wish it to be thought that this high planting will prevent injuriously deep root-action, but I do assert they are much less liable to strike down, and even if they do they can be brought nearer the surface and the trees' health restored without actually lifting the trees. This style of planting is particularly to be recommended in the case of choice transplanted trees. Not unfrequently the ball of roots and soil previously well on the surface are buried deeply in a fresh site, too often in holes double dug it is true, and for that reason little better than drainage holes for the surrounding subsoil. In every case a newly transplanted tree should be given a better position than it previously occupied, or the chances are it will be a long time in recovering from the check unavoidably given it, and the less the roots come into contact with a cold subsoil the better. Some of the finest transplanted Conifers, including several Cedars of Lebanon, are to be seen in the grounds surrounding Elvaston Castle near Derby. They were in many instances very large when transplanted, individually taking many men and horses several days to move them to their present site. They were not buried deeply, but deposited nearly on the surface, the old balls being still plainly discernible. Failures in transplanting were unknown, and in spite of the cold indifferently drained sites those trees have grown splendidly. Buried balls are apt to get too dry at times, and are not easily moistened again, whereas near the surface they are more under observation, more easily moistened when necessary, and newly transplanted trees must have much water during the first spring and summer following their removal, while shallow culture and shallow planting is one of the means of keeping the roots within reach of the air and any food that may be given them from the surface.

The advocates of deep culture attach much importance to giving trees and plants a deep root run, this being especially advantageous during a dry season. For a time this may be the case, and short-lived vegetables do sometimes appear to delight in it. So also do trees frequently grow more strongly on newly trenched ground, and while the vegetable matter introduced into the bottom spit are sufficiently durable to keep the soil divided to such an extent as to admit the air to the roots, fibre is formed and food transmitted upwards. Later on the subsoil becomes more or less impervious to the air, the fibres perish, and the food supply is cut off. Even if the fibres continued to be formed at any depth below 12 inches. I ask how long they are enabled to find any fertilising matter? In very many cases not a day longer than the decaying vegetable matter dug in lasts. We may top-dress with manure or give plentiful supplies of liquid manure to deeply rooted trees or vegetables, but not a tenth part of it ever reaches them. Light sandy soils do not retain, while heavy soils filter it, whereas when planted on the surface of ordinary dug ground, and encouraged by mulchings to root near the surface, they have easy access to everything that is offered them. There is no comparison between the growth and fruitfulness of trees rooting deeply and those on the surface and attended to. In the former case very unnatural and very severe remedies have very frequently to be applied before fruitfulness results, but a healthy surface-rooting tree has only to be "severely let alone," and it soon produces good crops of the best fruit, as in the case above cited. It is generally understood that the ground about Raspberries, Strawberries, Gooseberries, and Currants ought not to be dug, a destruction of surface roots militating against fruitfulness. These are mulched with manure, and well repay for the treatment. On the opposite side of the walk perhaps are growing various wall trees, or the borders adjoining are occupied with pyramid or hush Apple, Pear, and Plum trees, and these, one would suppose, merited similar or even better treatment. Not so, they must be driven to root, principally in the subsoil, and the surface be frequently dug and cropped with Cabbages, Violets, Parsley, and other gross-feeding crops. What sense is there in this?

Many a good crop of vegetables, I admit, has and will be obtained from trenched ground, but do not too hastily give all the credit to the efficacy of the spade. Is it not a fact that much vegetable matter in an almost or quite fresh state is worked in during the process of trenching, while the ordinary dug ground only gets a dressing of thoroughly rotten manure from the frame ground? The former has lost none of its fertilising properties, but they gradually become available, while the mass of humus, erroneously called manure, is, when buried, say, 9 inches deep, of no real assistance to a plant. The humus derives such fertilising agencies as carbon, hydrogen, and nitrogen from the air and not from the soil, hence the necessity of forking it into the surface, as well as its value as a mulch. Given thorough good manure, such as market gardeners use, or plenty of artificials, in conjunction with humus, and I will on this soil and with sufficient labour undertake to grow as good vegetables in great abundance as any that are sent to a gentleman's table.

On heavy land vegetables as well as fruit trees thrive best when rooting on the surface, and the old-fashioned plan of forming ridges and raised beds for various crops has yet much to recommend it. Not only do Beans, Lettuces, and Cabbages succeed remarkably well on the ridges between the Celery rows, but there is no better site for late Peas. I remember one instance where good dishes of Ne Plus Ultra Peas were gathered from rows on the Celery ridges as late as November 19th, or long after all others had failed, no matter how treated, in the same neighbourhood. Mounds and ridges are warmer than the soil on the level, and yet being more exposed to the moist air are not so quickly affected by drought as one might expect. If we wish to grow fine "sticks" of Horse-radish quickly there is no plan to equal that of planting long thin roots almost flatly on slightly raised beds, and raised Asparagus beds are yet the most profitable on heavy land. The heaviest piece of garden ground we have has this season produced heavy crops of Potatoes, first-class as

regards quality. The sets were placed on the surface and moulded over, and anyone else can grow good Potatoes in the same way. No one thinks of forming a Vine border on the level with a mass of cold soil, and all are very anxious to keep the roots out of the unkindly subsoil. Even plants do better in pots than in boxes, the former being more porous, and, all things considered, am I not justified in arguing at length against absurd practices still thought to be the "right thing" by so many gardeners?—W. IGGULDEN.

INDIAN EXPERIENCES.

(Continued from page 432.)

BEFORE proceeding further with my journey northwards I may mention that before leaving South Wynaad I had the rare opportunity of seeing extensive tracts of the large Bamboo (*Bambusa arundinacea*) in flower and seed, which, from subsequent inquiries, I found does not happen more often than once in fifty years. Although the Bamboo, in both the northern and southern divisions of the Wynaad and the province of Coorg, seemed to be very much of the same age, yet it did not flower and seed at the same time, and it is a rather curious fact that this flowering began as far south as the jungles of Travencore some time about the year 1858 or 1859, travelling southwards, till in the year 1864 nearly all the Bamboo jungles in the province of Coorg flowered and died out. In the district in which I settled in the northern division of the Wynaad the plant flowered in the year 1863, I had consequently every opportunity of seeing and noting the phenomenon. My estimate of fifty years' growth before the plant seeds is founded upon information derived both from Europeans long resident in Malabar and from natives born and resident in the Bamboo jungles all their lives.

Scattered at intervals over the whole of the Bamboo jungles of Wynaad were small communities of a certain caste of natives called Jain Coorumbers, or Honey Coorumbers—that is, men, part at least of whose occupation was to climb the high trees and rocks and collect the honey-combs for their own use and for sale. This they effected without the use of veil or gloves, and indeed with hardly anything to cover their naked bodies. The work was always done at night, but even then, how the men escaped being stung to death by the huge swarms of bees hanging from 4 to 5 feet from the branches, was always a puzzle to me. Some huge trees contain as many as from ten to twelve swarms of these bees of the above length, and from 2 to 3 feet in diameter, the individual insects each two or three times larger than the English bee. These people, although frequently assisting at the religious ceremonies of other native castes, had, so far as I could ascertain, absolutely no religion, and were sunk in the deepest degradation and ignorance, but exceedingly lively and good-natured, and in appreciation of fun and humour exceeded any other caste of natives I met in India. These people were exceedingly simple and unsophisticated in their natures, and consequently the victims, in many ways, of their more cunning fellow countrymen, who were never over-scrupulous as to the extent to which they levied black mail in the shape of the produce of their small grain clearings, honey, and forced labour.

These communities had no fixed residence, but kept moving from place to place in the jungle periodically, and rebuilding their villages, consisting of low huts constructed of branches of trees and roofed with large leaves sewn together with strips of the inner bark of jungle saplings. Their food consisted chiefly of the grain produced on their small annual clearings, wild fruits, wild yams, dug from the jungle with pointed sticks, and which they roasted over wood fires; and the produce of the chase, there being always plenty of dogs in each village, and a gun or two, of very primitive workmanship certainly, but used with deadly effect on deer and wild pig, with which the jungles at that time abounded. After the advent of the speculative English planters in the district this timid race of Coorumbers began gradually to approach the clearings, and eventually to do a little work, and as time went on and confidence was established they would come in large gangs and do all the felling, clearing, and building work of an estate in a much quicker and superior style to the native of Mysore, which composed the bulk of the labour employed on the Coffee estates. It was surprising to see how quickly they would cut their way up the formidable and thorny clumps of Bamboo, knife in hand, lop off the great canes a third of the way up, trim, cut, and dress the pieces, and work them into the framework of the lines of huts being built for the accommodation of the Mysore coolies, who resided on the plantations during the working and crop seasons. They did this kind of work admirably, and yet in their own villages, with such abundance of material close at hand, they never attempted to build comfortable houses.

The outer skin, smooth and polished, and the wood of the Bamboo contains, I believe, some 50 per cent. of silica, and is very difficult to cut in consequence, especially in a dry state. Knives of the very best temper are required in dealing with the Bamboo. Native knives of this description were always brought by the Coorumbers for their own use, they declining altogether to work with those imported from England, which almost invariably proved useless in comparison with those of native make. It was from an old man, from one of these villages, of over sixty years, who used to act for me as superintendent of a gang of men, that I had what I considered the trustworthy information that he remembered when a boy the Bamboo flowering and seeding all over the country, and that he was employed for weeks collecting the seed for the purpose of food, and from that time until the time I write of, the plants that had sprung up from the seed then shed had not flowered till the time of which I am writing. The plant sheds its leaves annually, so that at the time of seeding it was quite

destitute of foliage, the huge masses of grain hanging heavily from the tops of the canes, and bending them down towards the earth, giving the clumps a most remarkable appearance. When the seed, which is not unlike small oats in appearance, falls, these jungle men gather and store it in large quantities for use as food. It is ground into meal between two stones, and baked into cakes, but I was told, when much eaten, it produced dysentery and diarrhoea. A curious belief obtains amongst the natives in general in this district of Malabar, that the canes if cut during the wane of the moon will soon decay, so that, when wanted for building purposes, they are always careful to cut them during the increase of the lunar orb, a superstition which prevailed in some parts of England with regard to timber trees not so many years ago. The canes are also frequently left to soak in pools of water and rivers for several weeks previous to use, as a preventive of decay. With the flowering and death of the Bamboo vanishes all the grace and beauty of the jungle; nothing but the dried and blackened clumps of dead canes are left, which for fifty years had obeyed the summons of Nature and hastened to renew their mantle of delicate green with the first showers of each returning spring.

The roots of these giant clumps having a deep and firm hold on mother earth, and the comparative indestructible nature of the canes was the cause of their remaining for some years exactly in the position in which they died, yielding but slowly, and with seeming reluctance, to the attacks of that wonderful insect the white ant, and jungle fires, fed by dry grass and fallen leaves, creeping their stealthy way annually through the forest, leaving nothing but a charred and blackened track behind. After the seeding of the Bamboo in my neighbourhood in 1863, and on seeing the fires of the ensuing dry season seemingly scorching up everything in their path, I could not help exclaiming, "Here is an end to the beautiful Bamboo jungle for ever, at least in this neighbourhood;" but in this I was mistaken, for, by the end of the following south-west monsoon clumps of young seedlings were seen springing up in all directions, giving fair promise that in the course of years the forest would return to its original beauty; and this promise was duly fulfilled, for by the year I left India, 1877, these clumps of seedlings had attained a size nearly, if not quite, equal to the parent plants. But how the seed in the first place, and the tender seedlings in the second, escaped the ordeal of these annual fires I am at a loss to say, unless it was through the agency of a special and secret provision of Nature.

After this long digression I must attempt a description of my journey from South Wynad to the locality in which I was to reside and work for the following three years. As I have already stated, the journey occupied the whole day and proved to be a very trying one. The track lay far from any Coffee plantations, so that I had no opportunity for rest or refreshment. The pony I rode was not of the strongest description, and soon showed symptoms of fatigue. My first halt must be at the Planters' Club House at Manantoddy, the capital town or village of the northern district, and distant some thirty miles from my starting point. The road, or rather track, was in no way good and frequently puzzling, and as, of course, I knew not a word of any native language, I had, in asking my way of the natives I happened to meet, to fall back on the "universal language of all nations," signs, and to the utterance of the one word, Manantoddy, at the same time pointing in the direction in which I supposed the town to be situated. These natives, one and all, seemed to at once grasp my difficulty and hastened, also by words and signs, to assure me I was on the right path; the consequence was that I "made" the village without taking a false turn. I can well remember, when not far distant from the Club House, I met a well dressed native, and on accosting him, in the same manner as related above, I had the pleasure of receiving for answer in excellent English, "Yes, Sir, you are close to Manantoddy, keep straight on, and you will soon be at the Club House." On the way I passed through some very pretty undulating land covered with short bright green grass and comparatively open, studded only by a few trees and widely detached Bamboo clumps, looking like extensive and well kept pleasure grounds, and exquisitely beautiful. The eastern slopes of the Western Ghats were also in view all the way, covered with black forest, broken at intervals by the clearings of the ruthless Coffee planter, and looking cool and magnificent in the clear atmosphere. The highest peak of the range—leaving out the Neilgherry Hills—occurs here, and is named Balesore. It is a magnificent mountain peak rising to a height of a little over 7000 feet above sea level, and heavily wooded till within a short distance of its summit, which is crowned with long grass and low shrubs. I have often gazed at this same mountain just before sunset, and although I had often, when a boy, looked in wonder on the summer evenings on the strange and beautiful blue colour of the hills in the western Highlands of Scotland, yet never had I experienced such enchantment, nor gazed on such azure hue as I observed this glorious Balesore mountain. The rivers, which during the rains were all but impassable, were at this season easily fordable even for a small pony, so they presented no difficulty.

One or two groups of natives I passed rather startled me. These men were all armed with bows made of seasoned Bamboo, and spear-shaped arrows. Their hair was close shaven in front, with back hair tied up in a knot on the top of their heads; their clothing consisted of a single narrow strip of white calico each, and they were accompanied by a large pack of pariah dogs. They had a very wild and warlike appearance, and as I approached them they ranged themselves in single file on either side of the road with the apparent desire of allowing me to pass; but, to be candid, they looked far too much like the pictures of the North American Indians I had seen to please me, and I felt more comfortable when a little distance divided us. I found afterwards that this particular tribe were called Croochers and lived in villages in close proximity to the extensive

Rice fields, gaining a livelihood by working for the rich proprietors of the Rice fields, and by hunting. They never use the gun in their hunting expeditions, but only the bow and arrow, and such a deadly weapon is it in their hands that all sorts of game is brought down, from the hare and jungle-fowl to the panther, leopard, and bear. I have often seen them shooting at a mark with wonderful correctness of aim. Their ranging themselves on each side of the road on this occasion was no menace, but simply a mark of respect to the white man; at the same time their wild and somewhat savage appearance did not altogether belie their nature, for their previous history, up to the time of the English taking complete possession of the country, and sending officials and police there for its better government, was one of rapine and murder. Indeed not a few murders and robberies were committed by these men during my residence in the district, the weapon of slaughter being always the spear-headed arrow. I reached the village in due course, tired, hot and hungry, and, as may be supposed, not without the loss of a considerable area of bark, not having had great previous experience in riding! At the Planters' Club I rested for a short time and had refreshments, then renewed my journey a distance of ten miles more. I had not met a single white face, either on my journey from the south or at the Club House, so was much pleased on resuming my journey to meet with an Englishman, who proved to be the resident doctor of the district. He evidently saw at once that I was a fresh importation, spoke very kindly to me, and directed me my way. In the dusk of the evening I arrived at the bungalow of my future master or superintendent, a gentleman with a foreign name, who managed several Coffee estates both for himself and for the gentleman who had brought me out from England. An account of the kind of reception I received from this person on my arrival, after a journey of nearly 8000 miles, I will reserve for my next paper.—PLANTER.

(To be continued.)

FRUIT AND PLANT HOUSE.

THE best examples of what can be accomplished in growing plants and Vines in the same house are usually seen near towns, and at The Sbrubbery, St. Neots, the residence of G. Bower, Esq., I found a remarkable instance of success. There is a house (fig. 68) 67 feet long and 28 feet wide, span-roofed, with the ends east and west. The site is enclosed by the mansion to the east, westward by the church school, northerly by high buildings, being open to the south only, and even there we have a wall separating the churchyard from the site, the beautiful church of St. Neots being within 100 yards to the south of the house, which though so surrounded is nevertheless detached on every side, with the buildings named in close proximity. It is a very substantial house, with side lights, and provision is made for roof ventilation on both sides of the ridge, opening by crank and lever movement. The Vines are planted inside, and trained to the roof at the usual distance, or about 15 inches from the glass. On the north side of the house the Vines are as follows, commencing at the east end. Gros Colman, which ripens and colours well, and is considered good in flavour; it is trained with two rods, and is considered a very desirable variety, from its large berries and generally noble appearance. Alicante is only allowed one rod, being that form of Alicante which is noted for small berries, though it ripens well; Black Hamburgh is allowed three rods; Buckland Sweetwater is allowed two rods, and it fruits and finishes capitally; Alicante is only allowed one rod, but this is the better form, and finishes capital examples of large bunches and berries; Black Hamburgh is allowed two rods; and Dutch Hamburgh one, which gives very large berries, that are liable to crack. Lady Downe's sets well, and is in every respect satisfactory, not being liable to scald; which may be due to being grown on the north side of the house. Royal Muscadine is only given one rod, and is characterised by its usual excellence; West's St. Peter's is trained with one rod, gives compact bunches of Grapes that colour well, and is one of the best late Grapes. Gros Colman is allowed two rods; and Madresfield Court one rod (this is considered one of the finest Grapes, doing very well, and not cracking, which may be a consequence of its being on the north side of the house).

The south side of the house contains, commencing from the west end, Black Hamburgh, three rods; Frankenthal, two rods, which, though fruiting freely and having large berries, does not colour nearly so well as Black Hamburgh; this defect is common to this Grape. Buckland Sweetwater, two rods; Madresfield Court, one rod, doing capitally on this as well as the north side; Foster's Seedling, two rods, giving the heaviest crops, and a Grape that is held in high repute; Black Hamburgh, two rods; Buckland Sweetwater, one rod; Black Hamburgh, one rod; Foster's Seedling, two rods; Lady Downe's, one rod; Black Hamburgh, one rod, replacing Grizzly Frontignan, which were not found to do well; and Mull Hill Hamburgh, three rods, and which is here considered the finest of the Hamburghs. It will be seen that the Grapes that are most esteemed have most rods, being free fruiters, and as such do not require so great a run of foliage as the late sorts, the latter not being so amenable to close stopping as the earlier-ripening varieties. From this house 800 bunches of fine useful Grapes are had annually. The results, with the different varieties, were kindly furnished by Mr. Williams, the able and persevering gardener. There is an abundant crop this season, yet more than half the bunches were removed in disbudding.

The plants are grown beneath the Vines on side stages or shelves along both sides the house, and in the interior of the house stood on the floor, it being disposed in conservatory-like order, there being side paths for convenience of inspection and attending to the plants in watering, &c., and a wide central path with a recessed space in the centre fitted with

seats. As showing the miscellaneous character of the plants, I noticed Azaleas in many varieties and colours, double and single, some of them being of large size and smothered with flowers, notably *A. alba plena* in pyramid form, 7 feet 6 inches high and 4 feet through at base; the same variety in bush form, close on 6 feet through; *Cytisus racemosus*, both pyramids and bushes, 6 feet high and 4 feet through, covered with their fragrant golden racemes of bloom; *Habrothamnus elegans*, 8 feet high, in the shape of pyramids; Orange trees in quantity and variety, both in standard and pyramid form, full of flower-bud, and which in forward examples loaded the air with fragrance; *Richardia æthiopica*, both in large and small pots, were plentiful, some of them having as many as thirty spathes expanded, which with the ample foliage were splendid in effect and usefulness, the great profusion of white in the Azaleas, *Richardias*, *Spiræas*, *Deutzias*, and *Lily of the Valley* being no doubt made in anticipation of the Easter decorations. Miles' Spiral Mignonette in 6-inch pots, with its long spikes of sweetness; it is one of the best for pots.

very beautiful *Asparagus plumosus nanus*, which was making very vigorous growth, it being a very fine variety of this lovely plant.

In the Peach house, a lean-to structure 66 feet long and 15 feet wide, with front lights about 4 feet high, there is a similar miscellaneous collection of fruits and plants. The trees are standards, planted inside, and the growths trained to the roof only, the front or upright part being kept clear, the trellis about 12 inches from the glass. The trees are planted inside, and consist of Dutilly's (Duc de Telliers) Nectarine, which appears to fruit freely; Downton Nectarine, which also affords plenty of fine, large, highly coloured fruits; Acton Scott Peach, the fruit of which attains to a good size, and is considered excellent; Teton de Venus, not considered a good bearer, but the fruit has been grown here to 12½ ozs. weight; Elruge Nectarine, very much liked, as it is everywhere; and Prince of Wales Peach, which appears to be doing well, it not being as a rule a healthy grower, at least not outdoors, but it answers under glass, at least here; there being promise of a heavy crop, the fruit attaining a



FIG. 68.—THE VINERY AT THE SHRUBBERY, ST. NEOTS.

Primulas, Pelargoniums, Zonal and Ivy-leaved, and sweet-scented leaved; Heliotropes, Roses, large plants of Camellias, both in double and single varieties, also small plants of these in quantity; *Dielytra spectabilis*, *Azalea mollis* vars., *Diplacuses*, *Cinerarias*, the large-flowered Covent Garden strain; plants in tubs of *Metrosideros floribunda* in bush form, 6 to 8 feet high and as much through; *Cyclamen*, *Lachenalia tricolor*, *Sedum Sieboldi*, *Begonias*, shrubby and Tuberous; *Rhoeo falcata*; *Neriums*, including that fine variety *Madonna*; *Begonia fuchsoides* clothing pillars, *Mesembryanthemums*, *Vallotas*, *Fuchsias* in variety, *Lucy Finnis* being a favourite; large plants of *Agapanthus*, *Cactus*, *Acacias*, and many others. Foliage plants were represented by Palms, as *Corypha anstralis* in large plants, also *Phoenix dactylifera*, &c., and the indispensable *Cocos Weddelliana*, *Dracæna rubra*, *Ficus elastica*, large examples of Variegated Aloe (*Agave americana variegata*), *Cyperus laxus variegata*, Japanese *Euonymuses*, Variegated *Lily of the Valley*, which is as fine by its striped foliage as lovely by sweet flowers; the very lovely *Isolepis gracilis*, &c.; and there is a great variety of Ferns, amongst others *Asplenium bulbiferum*, *Pteris umbrosa*, *P. scaberula*, *Blechnum corcovadense*, *Harefoot* (*Davallia canariensis*), *Asplenium nitidum*, *Maidenbair* (*Adiantum*), *Platycerium alcicorne* with stagshorn-like fronds over 4 feet through, and these were grouped together in an effective manner, with pots of the blueish metallic lusted Lycopod (*Selaginella cæsius*), &c. Finer in its division were the

large size, some having been grown to 11 ozs., and excellent in quality, which is more than can be said of the large fine-looking late Peaches generally. The trees are only four years planted, and have a spread of head of about 15 feet by 9 feet. Beneath the fruit trees on the front stage are Pelargoniums, Fuchsias, Heliotropes, Auriculas in flower, Cyclamen seedlings in pans from autumn sowing, Tree Carnations, Salvias, Scented Verbena, Vallotas, Cape Pelargoniums, Roses, Statice, Zonal Pelargoniums, Diosmas, &c.; and at the back are large Orange trees in pots or tubs, standards of 4 to 6 feet stem and fine rounded heads, Shaddocks, &c. These are used for outdoor decoration in summer, and make quite a fine effect. Some of the plants are kept in a coach-house in winter, dry and safe from frost, where they lose their leaves, and being introduced to the Peach house in spring they break very freely; some so treated are now (April 13th) pushing growth very much better than those that have been treated as evergreens and kept moist. The process seems a singular and novel mode of renovation, but it answers perfectly. Myrtles 8 feet high, both broad-leaved and narrow, *Plumbago capensis*, *Coronilla glauca*, *Brngmansias*, *Rhododendron Purity*, &c., with many other plants, besides bedding Pelargoniums, &c., that having been wintered here are now in frames. In this house are the pyramid Fuchsias, 7 to 8 feet high and 3 feet through, that are seen with honours annually at St. Neots Flower Show. There is also a large plant in a tub of the seldom seen Musk Tree, the leaves of which when touched emit an odour

of Musk. There are also Tomatoes in a forward state, Vegetable Marrow plants potted off, Celery in boxes pricked off, French Beans in boxes, and quite a novelty in the shape of Scarlet Runners running up strings against the back wall, which I understand is the first season; but as French Beans do well enough, why not Scarlet Runners? In pots are a quantity of Ashleaf Potatoes. Two sets are put in a 12-inch pot about the middle of January, and by the middle of April there are Potatoes fit to lift, and these have a ripeness frame ones as a rule do not have so early. When I saw them (April 13th) they were large, in tubers, and so ripe as to evidence good cooking quality. The indispensable Mint was present in quantity, but to enumerate everything would only be a reiteration of many plants that are well known. Some of the common white Lillium (*L. cand. dum*) were over a yard high, showing buds plentifully. Of the many good plants in the grounds and garden I must for want of space omit mention, but there are some fine pyramid Apples that promise well, Ribston Pippins very fertile, without a trace of canker, Plum trees on low walls, all bloom from bottom to extremity, and there is a fine piece of lawn without a speck of Daisy or other weed to mar its close deep green velvety surface, and gives evidence of great care being taken to make and keep it in that order so necessary for enjoying the popular game of tennis. It is the finest piece of lawn I have seen, so level, so close and firm, as to merit especial praise—G. ABBEY.

CHRYSANTHEMUM SHOWS.

HULL.—NOVEMBER 18TH AND 19TH.

THOUGH the Hull Chrysanthemum Society has only been established a little over two years, it already occupies a leading position in the country. The gentlemen constituting its directorate combine enthusiasm with quick business aptitude, and they appear to know how to gain the support that is requisite for carrying out their object—the encouragement and promotion of the cultivation of the Chrysanthemum in the district. To effect this object a considerable number of open classes are wisely provided, and liberal prizes offered to bring the best products that can be obtained from other districts. The superiority of those products over what may be raised in any given district directly stimulates local growers to aim at a higher standard of excellence, and they are impelled to strive to equal or surpass the achievements that arouse general admiration. This is a far better policy and more certain to accomplish what is desired than simply collecting money and distributing it over a number of local classes to be divided amongst local men, while the products remain at the same old and it may be low standard that prevails in the district. We have seen wonderful improvement follow brisk and splendid competition in an open class, not at Hull only, but in other places. Nowhere, however, do we remember of a greater advance being made in a shorter time than at the show under notice. When the character of the Chrysanthemum blooms generally that were staged two years ago are remembered and compared with those of last week, we are bound to regard the improvement as simply marvellous. Much the same progress has been made in the effect groups, that are now quite equal to the best in the kingdom. A marked improvement in plants is also apparent; but as yet the district growers have given scarcely any attention to trained specimens. This year, however, a good specimen was obtained by the Secretary as an "object lesson," and we may expect to see some better locally grown plants in the future. As regards the character of the floral decorations, we found excellent taste displayed in the dressing of dinner tables; but not so in the arrangement of bouquets, which were, as a rule, too large, smooth, and crowded. The Show now to be noticed was arranged in the very extensive Artillery Barracks, and proved worthy of the excellent attendance of visitors from the opening till the close of the Exhibition.

CUT BLOOMS.—The chief point of interest naturally centred in the challenge vase competition. The vase, value fifteen guineas with the first money prize of £10, is generously provided by the Chairman of the Society, George Bohn, Esq., the remaining prizes in the class being £8, £5, and £2. Last year there were four competitors, and the vase was won by Mr. D. Lindsay, gardener to Sir T. Edwardes Moss, Bart., Otterspool, Liverpool. Mr. W. Mease, Liverpool, pressing him closely; he, however, accepted his defeat manfully, resolving to try again. This year, though there was the same number of entries as last, only the above named exhibitors kept their engagements. Both arranged heavy stands of blooms, Mr. Lindsay's at the first glance appearing to take the lead; but after a carefully examination of every one of the ninety-eight blooms and recording the merits of each Mr. Mease was found to lead by about the same small number of points that his rival led with last year. The vase therefore changes hands. The superiority of the incurved of Mr. Mease gave him the advantage (the Japanese being practically equal). Mr. Lindsay had a very grand back row which pointed decidedly higher than the corresponding line in the other stand, but Mr. Mease gained twice as many points in the other two rows that he lost in the back one; in fact finer front row blooms were perhaps never seen than in this collection. The class was for "twenty-four incurved blooms in not less than eighteen varieties and twenty-four Japanese blooms in not less than eight varieties." Mr. Mease's blooms were arranged as follows:—*Incurved*:—Back row—Lord Alcester, John Salter, Queen of England, Alfred Salter, Empress of India, John Salter, Lord Alcester, and Queen of England; full, fresh, solid, smooth, and bright, but not of great size. Second row—Prince Alfred, Empress of India, Golden Empress, Lord Wolseley, Golden Empress, Jeanne d'Arc, Jardin des Plantes, and Alfred Salter; the Golden Empress rather small here lost some points, but the others were excellent. Front row—Princess of Wales, Mr. Bunn, Hero of Stoke Newington, Mrs. Heale, Refulgence, Cherub, Lady Harlinge, and Princess of Teck—a fine row, Refulgence being splendidly represented. *Japanese*:—Back row—Boule d'Or, Marguerite Marrouch, Fair Maid of Guernsey, Madame C. Audiguier, Val d'Andorre, Boule d'Or, Baronne de Prailly, and Elaine. Second row—Madame de Savin, Triomphe de la Rue des Chalets, Mons. Tarin, Comte de Germany, Meg Merrilies, J. Delaux, Belle Paule, and Japonaise. Front row—Val d'Andorre, Meg Merrilies, Criterion, Belle Paule, Golden Dragon,

John Laing, Soleil Levant, and Madame C. Audiguier. Mr. Lindsay staged many magnificent Japanese blooms, especially in the front row; but taking the stands throughout, and notably the incurved, Mr. Mease's blooms were decidedly the fresher, some of Mr. Lindsay's being very stale and at least a week too old.

The result appeared to take the loser by surprise, and we believe he entered a written protest against the awards in this and another class that were against him, but not against those where he was placed in the leading position. The decision of the Judges was upheld. We have in our possession the record of the Judges' point, those of two other first-rate growers and judges, and the total points determined with great care by a member of the Committee; and as they were all taken independently—that is, the Judges and scrutineers being quite in ignorance as to conclusions of each other, the comparison is a little remarkable, for in one case there is a total of one point above the official Judges' numbers, and in the other, one point below them; therefore there is, so to say, a triple verdict in favour of Mr. Mease, who won well, and received the more congratulations because of the peculiar circumstances attending the competition.

In the open class for twenty-four blooms in not less than nine varieties each of incurved and Japanese, Mr. Lindsay won the chief prize (£5) with splendid examples, but some a little stale, Mr. Mease closely following with fresh but smaller blooms, and entered no protest. He was placed first with twelve incurved varieties, distinct, with beautifully fresh and broad petalled examples of Empress of India, Emily Dale, Alfred Salter, Golden Empress, Prince Alfred, John Salter, Lord Alcester, Refulgence, Princess of Wales, Mrs. Heale, Jardin des Plantes, and Hero of Stoke Newington. Mr. Lindsay followed with larger blooms, but several of them too stale and loose to merit a higher position. Mr. Usher, gardener to E. Hargit Johnson, Esq., Thorgumbald, was adjudged the third prize for neat examples.

In the corresponding class for Japanese Mr. Lindsay secured the premier position with magnificent blooms of the following varieties:—Fair Maid of Guernsey, Mons. Desbrieux, Mme. Lacroix, Val d'Andorre, Japonaise, Criterion, J. Delaux, Soleil Levant, Mons. Tarin, Boule d'Or, Belle Paule, and Meg Merrilies. Mr. Mease was an excellent second with a fresh fine stand.

F. W. Jameson, Esq., Est Ella, was first in the open class for twelve Anemone blooms in not less than six varieties, with excellent pale and clean examples of Fabian de Mediana, Mme. Cabrol, Lady Margaret, Dorothee de Souille, Emperor, Berthe Pigny, Marguerite Solleville, and Acquisition, followed by Mr. E. Mason, gardener to George Bohn, Esq., and Mr. H. Berkmar, gardener to David Wilson, Esq., Park House, Cottingham, both arranging good stands. The same exhibitors occupied similar positions with twelve reflexed blooms, of which six collections were staged, those winning the prizes being excellent and very close in point of merit. In the class for six blooms of any variety, Mr. Mease was first with Lord Alcester, Mr. Lindsay second with J. Delaux, and Mr. F. W. Jameson third with Mons. Tarin. Messrs. Mease and Lindsay were respectively first and second with six blooms of Cullingfordi and Mr. Bohn third, all having rich fine blooms. The class for new Japanese varieties was not a success, the blooms staged being very small. Mr. E. P. Dixon's prize for twenty-four blooms, twelve incurved and twelve Japanese, was won by Mr. J. P. Leadbetter, gardener to Arthur Wilson, Esq., Tranby Cott, with fresh and excellent specimens, Mr. F. W. Jameson being an extremely close second with heavier but older blooms, and Mr. Harland, Th. Sycamores, Cottingham, a creditable third. Mr. Leadbetter was the leading prizewinner in the class for twelve incurved blooms, also with twelve blooms of incurved and Japanese, Messrs. F. A. Thompson, gardener to J. Fisher, Esq., Manor House, Willerby, F. W. Jameson, Esq., Harland, and J. Dalby, gardener to J. H. Horsley, Esq., Southfield, Cottingham, being successful exhibitors in those classes.

All the classes above referred to were open. In the amateurs' classes there was excellent competition, Messrs. A. W. Stanley, E. Goddard, G. Kidson, and W. Roper being the prizewinners, all contributing well to the quality of the Show. The two amateurs' challenge cups for twelve incurved and twelve Japanese blooms respectively were won by Mr. Stanley with very large but rather stale blooms, Mr. Goddard closely following with neat fresh examples, but several only half developed.

The premier blooms in the amateurs' classes were Boule d'Or and Golden Empress, both exhibited by Mr. Stanley, the premier blooms of the Exhibition being Lord Alcester in one of Mr. Lindsay's stands, and a magnificent Boule d'Or in Mr. Mease's vase-winning stand. Mr. J. Winkworth, gardener to Ralph Brocklebank, Esq., Coldwell Hall, Liverpool, was awarded a first-class certificate for a yellow sport from Meg Merrilies named Mr. Ralph Brocklebank, which has been previously certificated at Kingston. Mr. Owen of Maidenhead also had blooms of his Improved Corn Marigolds, which were highly commended.

GROUPS AND SPECIMEN PLANTS.—Seven imposing groups were arranged in competition for the ten-guinea challenge cup and £5 in money, the space accorded to each being 100 square feet. The stipulation was for "A group of Chrysanthemums interspersed with foliage plants," but the latter were sparingly employed throughout. A graceful Palm or Fern in most cases formed the top or central plant, and a fringe of Ferns and other suitable plants quite masked the pots and stems of the Chrysanthemums, imparting a most agreeable finish to the arrangements. The Judges had not much difficulty in selecting the first group of Mr. J. S. Graham, gardener to George Lawson, Esq., Newland Grove, Hull, for premier honours. It was an elliptical rather than a semicircular arrangement, the top, or highest point next the wall, being about 9 feet from the ground, the Chrysanthemum plants all bearing fine fresh blooms sloping down, but not in a flat formal way, to 2 feet from the floor, the margin consisting of a tasteful association of Ferns, Selaginella, and ornamental foliage plants, a few of the latter, such as Palms, being interspersed at intervals of 2 or 3 feet with the Chrysanthemums, not hiding them but forming a foil to the handsome blooms: these were indeed very fine as was the foliage. This group was not in the least crowded, nor was it thin, while every plant was fresh, and not a pot was visible. It was in every way meritorious, and the most attractive group we have yet seen at an autumn show. The second prize was adjudged to Mr. J. P. Leadbetter for a tasteful, free, and bright collection. The blooms of the majority of the Chrysanthemums were lacking in size, but the pleasing freedom of the arrangement could not be overlooked. Mr. Henry

Bulmer was placed third, his group being imposing by the great mass of colour, but the plants were decidedly too closely packed to be effective. Mr. Wm. Mason, gardener to Lieut-Col. Brooshooff was the remaining prizewinner with a free arrangement, but a trifle lacking in brightness. The 50 feet groups in the amateurs' classes were very good, and would have been better if the flowerstalks employed had been less obtrusive. The prizes were won by Messrs. Stanley, Hornsey, and Higham in the order named.

Though there was a decided improvement in the plant classes over last year there is room for a further advance, especially in respect to trained plants. A few were much too flat, a few standards only being of the right stamp. Some of the bush grown plants were good for conservatory decoration, but the majority would have been improved by disbudding and its corollary better blooms. Messrs. Lawson, Stamper, Mason, and Raby were the chief prizewinners in these classes.

Valuable contributions to the Exhibition were very fine collections of fruit from Messrs. Richard Smith & Co., Worcester, and Mr. E. P. Dixon, Hull. A fine assortment of Potatoes from Messrs. E. Webb & Co., Wordsley; new Chrysanthemums from Mr. Robert Owen, Maidenhead, and a great, diversified, and in every way very excellent miscellaneous collection of plants from Mr. E. P. Dixon.

The Show was admirably arranged by the industrious Secretary, Mr. R. Falconer Jameson, and his willing coadjutors, and was altogether a great success, a total of nearly 10,000 persons being admitted on the two days.

BRISTOL.—NOVEMBER 17TH AND 18TH.

The twenty-third Exhibition of this Society was held at the Drill Hall, Clifton, and this new departure was attended with excellent results. There have been several better shows held this season in other districts as far as Chrysanthemums are concerned, but as an all-round display of flowers, fruits, and vegetables it may fairly claim to be one of the best in the country. The Committee are all practical gardeners, and with the assistance of Mr. A. Polkinghorn, the very courteous and hard-working Secretary, everything was arranged in good style. We are informed that the attendance of visitors was highly satisfactory, thus proving that a long familiarity with Chrysanthemum shows has not yet militated against their popularity.

Chrysanthemum Plants.—The premier prize for six specimens of large-flowering varieties was awarded to Mr. C. Silcox, gardener to W. Vowles, Esq., who had very good examples of John Salter, Mrs. Dixon, Jardin des Plantes, Prince Alfred, Mrs. G. Rundle, and Sunset. He was closely followed by Mr. A. Ambrose, gardener to K. Robinson, Esq.; and Mr. J. Lee, gardener to T. M. Miller, Esq., was a good third. With three varieties Mr. J. Lee was first, Mr. Silcox second, and Mr. C. Good third, all staging well grown plants of popular sorts. Mr. Lee was first with four Pompons; Mr. J. Loosemore, gardener to W. Cooper, Esq., second; and Mr. H. Lewis, gardener to Boddam Castle, Esq., third, all having pretty plants. Japanese varieties were fairly well represented. Mr. Ambrose was first for four varieties, and Mr. E. T. Hill second. Mr. A. Porter had the best flatly trained Japanese sort, a fine plant of Bouquet Fait; Mr. Lee being second, and Mr. Loosemore third. Mr. J. Lee was awarded a first prize and also certificate of National Chrysanthemum Society for a very fine flatly trained Mrs. Rundle, the second prize in this class going to Mr. A. Porter. Several good pyramids were to be seen, Mrs. Rundle being the most popular variety. Mr. Silcox was first, Mr. A. Ambrose second, and Mr. E. T. Hill third. Several large groups were arranged, but they were only of average merit. Mr. A. Ambrose was a good first, Mr. John Ayres second, and Mr. J. Cole third. The last to be noticed were the standard-trained plants, and which hardly received the position they merited. Mr. W. Bannister was easily first for three specimens, having capital examples of Prince Alfred, Jardin des Plantes, and Mrs. Forsyth, and the remaining prizes were taken by Messrs. A. Porter and D. Thatcher in the order named.

Miscellaneous Plants.—Groups arranged on a space 10 feet by 7 feet, of which there four put up, added much to the general effect, and were highly creditable to the exhibitors. The Judges had no hesitation in awarding the first prize to Mr. W. Rye, gardener to J. Derham, Esq., this competitor far excelling any of his previous attempts. His collection included well-flowered *Lælia Perrini*, *Zygopetalum Mackayi*, *Calanthes* and *Cypripediums* in variety, *Ixoras*, *Crotons*, and various other choice plants. Mr. F. Perry, gardener to H. Cruger Miles, Esq., was a good second, his most conspicuous plants being a well-flowered *Vanda carulea* and an ugly *Echeveria retusa*. Mr. J. Ayres was placed third, and he also had numerous good plants and some very common ones. Mr. Rye staged the best six fine foliaged plants, these including fine *Crotons undulatum* and *pictum* and a large *Lantana borbonica*. Mr. R. Morse, gardener to S. Budgett, Esq., was second, and Mr. J. Lee third. With four varieties, Mr. Rye was again a good first, the Clifton Zoological Society second, and Mr. J. Lee third. Mr. Shelton, gardener to W. K. Waite, Esq., was first for *Bouvardias*, and Mrs. King second. Mr. T. Gibson and Mr. Rye were the prizewinners with *Poinsettias*, and Messrs. W. Bannister and W. Rye were respectively first and second for well grown groups of Ferns. Table plants are invariably shown in good style at Clifton, and with these the prizewinners were Messrs. R. Morse, W. Bannister, and G. W. Shelton. Mr. Bannister had the best *Primulas*, and Mr. H. Lewis was a good second. Mrs. Oldland took the first prize for a specimen Orchid, having a well-flowered *Cypripedium insignis*; and Mr. R. Morse was second with *Calanthe vestita*.

Cut Flowers.—The cut blooms of Chrysanthemums were shown in greater numbers than heretofore but owing to the lateness of the fixture only the Japanese varieties were up to the usual excellence. Mr. Runnacles was awarded the first prize for twenty-four large-flowering varieties, but he certainly had the best of the luck. Several very inferior blooms were included, while the best were Princess of Teck, Cherub, Barbara, Princess of Wales, Princess Beatrice, Venns, Queen of England, White Beverley. Mr. J. Aplin, gardener to W. M. Baker, Esq., was placed second for a prettier lot, among which the finest were Empress of India, Golden Empress, Lord Alcester, Angelina, and Mr. W. Shipman. Mr. E. Miller, gardener to F. Tagart, Esq., was a good third, Cullingfordi, Mabel Ward, Empress of India, and Barbara being the best in his collection. With twelve blooms Mr. Miller was first, no less than three Empress of Indias being included in this lot. Mr. J. Aplin was second with a fresher and good lot; and Mr. E. S. Cole, gardener to W. Pethick, Esq., third. The last named was easily

first for twelve blooms of Anemone-flowered sorts, Fabias de Maderanaz, Empress, Lady Margaret, Madame Bertha Pigny, Sœur Dorothee Souille, Margaret of Norway, and Gluck, all being in excellent condition. Mr. E. Miller was second, and Mr. T. Hobbs third. The class for incurved varieties in two colours was a good one, and included some really fine blooms. Mr. J. Aplin was first, having Empress of India and Golden Empress of India, and a bloom of the former was also adjudged the best in the Show. Mr. Miller was second, and Mr. J. Baylis third. Only one class for Japanese sorts, unless we include a special for new sorts, was provided, and only two prizes offered, this being surely a great oversight on the part of the framers of the schedule. With twelve blooms, Mr. E. S. Cole was well first, having Belle Paule, J. D. laux, Gloriosum, Fair Maid of Guernsey, Mdlle. Lacroix, Madame C. Andiguiet, M. Burnet, Fanny Boucharet, Duchess of Albany, and Japonais, all extra good. Mr. Miller was second, and there were seven other creditable lots shown. Hand bouquets, inclusive and exclusive of Orchids, were well shown by Mr. C. Winstone, who well deserved the two firsts awarded him. In both classes Mr. M. Hookings was a good second. Mr. E. S. Cole was first for a tastefully arranged vase of cut flowers, Mr. W. Dobson second, and Mr. E. T. Hill third.

FRUIT AND VEGETABLES.—Three good collections of six varieties of fruit were shown. Mr. Ellicott, gardener to H. W. Tugwell, Esq., Bath, was first with fine Muscat of Alexandria and large bunches of Lady Downe's Grapes, good Victory of Bath Melon, Beurré Diel Pears, Blenheim Orange Apples, and Red and White Currants. Mr. W. Iggulden, gardener to the Earl of Cork, Frome, was a very close second, losing only in having Gros Colman instead of Muscat Grapes; and Mr. W. Bannister was a most creditable third. No prizes were offered for collections of Grapes, but instead of these classes were provided for all the best sorts in season. Muscat of Alexandria was well shown by several growers. Mr. Ellicott took the first prize for extra fine bunches, though we should have preferred the second prize lot staged by Mr. J. Gibson, gardener to the Earl Cowley. Mr. W. Jones was first for well-kept Black Hamburgh, Mr. J. Loosemore being second, and Mr. Bannister third. Alicante was most extensively shown, but Mr. Iggulden was easily first for good-sized well finished bunches; Mr. A. Young being a good second; and Mr. Haines, gardener to the Earl of Radnor, also had excellent examples. Mr. Gibson was first for Lady Downe's, having two very pretty bunches; Mr. Iggulden was a good second, and Mr. G. Webley third. Gros Colman was not so well shown as might have been expected. Mr. Iggulden had rather small bunches, but they were well finished, and were placed first; Mr. Young being second, and Mr. W. Sweeting third. Mr. Iggulden was also first for Mrs. Pince, and Mr. Sweeting second. In the class for any other black variety Mr. Iggulden led with Alnwick Seedling in a creditable condition, Mr. Bannister following with Gros Maroc, and Mr. Sweeting was third with Gros Guillaume. In the corresponding class for white varieties Mr. W. Rye was first for Syrian of extra good flavour, Mr. Iggulden following with Golden Queen, and Mr. A. Young was third with well-kept Buckland Sweetwater. The Banksian medal of the Royal Horticultural Society offered for the best collection of Apples was won by Mr. W. Bannister, who had a really good lot of fruit. Mr. J. H. Virgo was first for six varieties of dessert Apples, these consisting of highly coloured Golden Reinette, Blenheim Orange, Ribston Pippin, Fearn's Pippin, King of Pippins, and Cox's Orange Pippin. Mr. Runnacles was second; and Mr. J. Pearce, gardener to H. Derham, Esq., third. Cox's Orange Pippin was the favourite in the single dish class. Mr. Aplin was first, Mr. E. Hall second, and Mr. J. Prestige third. With six culinary varieties Mr. Runnacles was a good first, winning with fine fruit of Peasgood's Nonesuch, Golden Ducat, Alfriston, Warner's King, Mère de Ménage, and Lady Henniker. Mr. Aplin was second, and Mr. E. T. Hill third. Mr. Aplin was first for one variety, staging a very fine dish of Blenheim Orange. Pears were very abundant and good. Mr. Jones had the best six varieties, these consisting of Doyenné du Comice, Josephine de Malines, Beurré Diel, Beurré Bachelier, General Todleben, and Duchesse d'Angoulême. Mr. Rye was second, and Mr. Hall third. With four varieties Mr. J. Saunders, gardener to Captain Allcock, was first, Mr. Bannister second, and Mr. E. Hall third; while for a single dish Mr. Rye was first with Doyenné du Comice. Mr. Rye had the best brace of Cucumbers, the second prize going to Mr. Haines. Six really good collections of vegetables were shown, the Judges having no easy matter to separate them. They eventually awarded the first prize to Mr. S. Haines, who had New Intermediate Carrots, Snowball Turnips, The Wroxton Onion, Brussels Sprouts, Reading Perfection Tomatoes, Autumn Giant Cauliflower, Leicester Red Celery, and Red Cabbage, all his well-known excellent condition. Mr. J. H. Virgo was a good second, and Mr. E. T. Hill third.

NOT FOR COMPETITION.—Messrs. Garraway of the Durdham Downs Nursery, Clifton, sent a considerable number of hardy shrubs and Conifers, as well as various choice plants, also a very complete collection of cut blooms of Chrysanthemums. The latter comprised nearly or quite all the best sorts in cultivation, and these came in for a good share of attention. Mr. J. Aplin, Harsfield Court, Gloucester, contributed a very good collection of Potatoes in about thirty-six varieties; and Mr. Pathebridge, Nailsea, also had a number of American and English Potatoes.

LINCOLN.—NOVEMBER 16TH AND 17TH.

The fourth annual Exhibition was held in the Corn Exchange on the above dates, and was well attended. The room in which it is held is one of the best in the kingdom for the purpose, and the Committee, benefiting from past experience, made the very best use of the space and of the material at their disposal. A marked advance in general appearance and in general quality of all exhibits except Grapes—which at such an exhibition are of minor importance—was at once apparent, and great credit is due to the courteous Secretary (Dr. Lowe), the Assistant Secretary (Mr. Pennell, jun.), and to the Acting Committee for the great success achieved by their efforts. Groups of miscellaneous, stove, and greenhouse plants, arranged on one side of the hall, and of Chrysanthemums and green-foliaged plants on the other, formed one of the chief features; and so excellent was their general quality that the Judges had considerable difficulty in making the awards; and two splendid groups of plants not for competition contributed respectively by Messrs. Pennell and N. Clayton, Esq. (gardener, Mr. Wipf) materially aided in making the Exhibition a complete floral success. Specimen Chrysanthemums were much better than in past years, Mr. Brailsford, an

amateur who is said not to possess a square yard of garden, leading the way in capital style, and completely outdistancing his opponents, who were professional gardeners. His single specimen of *Mrs. Rundle* was a large healthy plant bearing a great quantity of very fine flowers.

Cut blooms of *Chrysanthemums* were above the average in all the sections, Messrs. Bugg, Herring, Mitchell, and Brown being the principal prizetakers. A judicious arrangement of Palms, Cycads, Tree Ferns, &c., placed in various parts of the room, although in competition—produced a very pleasing effect by drawing the eye from the masses of colour, and by presenting a greater and more satisfactory variety of outline.

A table was set apart for vases and dinner-table decorations and bouquets, the most striking of the two former being contributed by Miss Hamilton Holmes, who displayed true artistic taste in her arrangements of colours and of "green," and also in approximating the "weight" of her material to the size of the vase and epergne at her disposal, both of which were too large, thus causing the premier awards to be made to Miss Pennell, who had smaller glasses, and lighter and very tasteful arrangements that did not obstruct the view across the table. Mr. Mitchell, gardener to W. J. Warrenner, Esq., exhibited the best collections of Apples and Pears, but who, like several other exhibitors this season, lost the first prize for dessert Apples through disqualification, having inadvertently placed a "*Blenheim Orange*" in a dish of "*Cox's*." Dr. Lowe took premier honours with exotic Ferns; and Mr. Marfleet had a splendid specimen of *Cypripedium insigne*, bearing fifty fully expanded flowers.

The chief prizes were awarded as follows:—Group of *Chrysanthemums* and other plants arranged for effect. First H. Greenham, Esq. (gardener, Mr. Foster); second W. J. Warrenner, Esq. (gardener, Mr. Mitchell); third, S. Lowe, Esq. (gardener, Mr. Herring, jun.). Group of *Chrysanthemums* and green-foliaged plants arranged for effect.—First, J. C. Bourne, Esq. (gardener, Mr. Brown); second, T. Lowe, Esq.; third, W. J. Warrenner, Esq. Best three stove or greenhouse Ferns.—First, Dr. Lowe; second, H. Greenham, Esq.

Cut blooms (thirty-six *Chrysanthemums*, eighteen Japanese and eighteen incurved, distinct).—First, W. Ashley, Esq. (gardener, Mr. Bugg) whose best flowers were *Lord Wolseley*, *Jeanne d'Arc*, *Empress of India*, *Queen of England*, *Comtesse de Beuregard*, *Soleil Levant*, *Elaine*, &c. Second, J. Warrenner, Esq. (gardener, Mr. Mitchell); third, Mr. Brailsford. Twenty-four incurved in eight distinct varieties.—First, W. Ashley, Esq.; second, T. Lowe, Esq. Twenty-four Japanese, eighteen distinct.—First, W. Ashley, Esq.; second, W. J. Warrenner, Esq. Eighteen consisting of six incurved, six Japanese, and six reflexed, distinct.—First, Mr. Oldham (gardener, Mr. Gill). Second, T. C. Bourne, Esq. Twelve reflexed in not less than nine varieties.—First, W. J. Warrenner, Esq. Second, W. Ashley, Esq. Twelve Pompons distinct.—First, W. J. Warrenner, Esq. Second, S. Lowe, Esq. Twelve incurved, distinct.—First, J. C. Bourne, Esq. Second, Mr. Brailsford. Twelve Japanese, distinct.—First, J. C. Bourne, Esq. Second, S. Lowe, Esq. Specimen plants, three *Chrysanthemums* (large-flowering, Japanese excluded).—First, Mr. Brailsford; second, W. Ashley, Esq. (gardener, Mr. Bugg). Three specimen Japanese, distinct.—First, Mr. Brailsford. Three specimen Pompons.—First, Mr. Brailsford; second, W. Ashley, Esq. Single specimen (large flowering).—First, Mr. Brailsford. Stand or vase for table decoration.—First, Miss Pennell; second, H. Greenham, Esq. (gardener, Mr. Foster); third, Miss Hamilton Holmes. Best arrangement of flowers for dinner-table decoration.—First, Miss Pennell; second, Miss Hamilton Holmes.

FRUIT.—Grapes were not up to the usual standard, and it is a great pity that some growers still fail to understand that when committees of flower shows offer prizes for "*Black*" Grapes they mean "*Black*" or "*Purple*" Grapes, and not "*Hybrids*" of "*Green and Red*." Several creditable bunches of *Muscat of Alexandria*, *Alicante*, and *Trebbiano* were exhibited. The *Muscats* exhibited by Mr. Hare, gardener to R. H. Nevil, Esq., were of superior finish, and were deservedly awarded first prize in the class for white Grapes, Mr. Greenford, gardener to Col. Sharpe, being second with larger, but not so well-finished bunches. For four bunches distinct varieties, Mr. Hare was again first; the second prize stand containing a good example of *Trebbiano* and a badly coloured bunch of *Gros Colman*.

Mr. Marfleet was first for a single specimen Orchid with a splendid plant of *Cypripedium insigne* bearing fifty flowers, and one of the best examples of its kind ever exhibited. The Committee is to be congratulated on having had one of the most pleasing floral exhibitions in the kingdom, and it is to be hoped it will prove as great a success financially.

SHEFFIELD.—NOVEMBER 19TH AND 20TH.

THE second annual Show of this Society was held in the New Corn Exchange on the above dates, and was in every respect a very great advance upon that held a year ago; the competition in the open classes being very keen, the entries numerous, and in the cut flower classes the quality was superb. In the principal of these classes—viz., that for twenty-four incurved and that for twenty-four Japanese, there were five competitors. Mr. John Edwards, gardener to H. Tate, Esq., Allerton, Beeches, Liverpool, secured the first prize of £5 for the twenty-four incurved, with exceedingly large and generally well finished blooms of the following:—Back row: *Lord Alcester*, *Emily Dale*, *Empress of India*, *Golden Empress*, *Queen of England*, *Lord Alcester*, *Queen of England*, and *Empress of India*. Middle row: *Princess of Wales*, *Golden Empress*, *Bronze Jardin*, *Jeanne d'Arc*, *John Salter*, *Princess of Wales*, *Bronze Jardin*, and *Lady Hardinge*. Front row: *Lord Wolseley*, *Mrs. Shipman*, *Mr. Bunn*, *Sir Stafford Carey*, *Chernb*, *Mrs. Halliburton*, *Barbara*, and *White Beverley*. Second honours in this class was obtained by Mr. E. Green, gardener to Jno. Woolwright, Esq., The Hollies, Mossley Hall, Liverpool, who ran Mr. Edwards very closely. Mr. Green's back row flowers were wonderfully fine, his corner bloom *Queen of England* being the largest incurved bloom in the Show; he had also *Barbara* especially fine in his front row. Mr. J. Lambert, gardener to Col. Wingfield, Onslow Hall, Shrewsbury, was third. In the corresponding class for twenty-four Japanese Mr. Lambert changed places with Mr. Edwards, Mr. Lambert being placed first, Mr. E. Green second, and Mr. J. Edwards third; the blooms shown by each were very large and fine. Mr. Lambert's first prize twenty-four were as follows:—Back row: *Mad. Audiguier*, *Fair Maid of Guernsey*, *Tbunberg*, *M. Burnet*, *Mad. Audiguier*, *Boule d'Or*, *J. Delaux*, and *Fair Maid of Guernsey*. Middle row: *Madame*

Mouliise, *Japonaise* (2), *J. Delaux*, *Album Plenum* (2), *Criterion*, and *Mons. Ardene*. Front row: *Hiver Fleuri*, *Val d'Andorre*, *Peter the Great*, *M. Astorg*, *Triomphe de la Rue des Chalets*, *Mrs. Mahood*, and *Mdlle. Lacroix*. In classes 8 and 9, for six flowers each of incurved and Japanese, not more than two varieties, the same exhibitors competed, together with Mr. G. Kirtin, gardener to J. Allen, Esq., Oldfield Hall, Altrincham, who secured the first prize in each class; his three blooms of *Boule d'Or* were greatly admired, and were amongst the finest blooms exhibited.

In the district class for growers residing within seven miles of Sheffield Parish Church, Mr. W. K. Woodcock, gardener to Mrs. Mark Firth, Oakbrook, Sheffield, was a very easy first with twenty-four fine blooms (twelve incurved and twelve Japanese); the incurved varieties being especially fine, Mr. W. Wainwright, gardener to H. Le Tall, Esq., Woodhouse, was second, and Mr. E. Pidsley, gardener to Mrs. H. Wilson, Westbrook, was third. Mr. Woodcock's blooms were as follows:—Incurved, back row—*Queen of England*, *Golden Empress*, *Lord Alcester*, and *Empress of India*; middle row, *Golden Queen of England*, *John Salter*, *Jeanne d'Arc*, and *Lord Wolseley*; front row, *Princess Beatrice*, *Angelina*, *Princess of Wales*, and *Lady Hardinge*. Japanese, back row—*Mad. Audiguier*, *Criterion*, *Baronne de Prilly*, and *Meg Merrilies*; middle row, *M. Astorg*, *M. Tarin*, *Mdlle. Lacroix*, and *Belle Paule*; front row, *J. Delaux*, *Mrs. Robinson*, *Julius Scharff*, and *Mad. Rendatier*. The same exhibitor was also well first for six incurves and six Japanese in the same classes.

In the amateurs' and cottagers' classes the first prize for twelve incurves and twelve Japanese was awarded to Mr. H. Bromhead, who had wonderfully neat and smooth blooms. The National Society's certificate for the premier bloom in the Show was awarded to a very highly finished bloom of *Princess Teck* on this stand. The entries in these classes were very numerous, especially in the sixes and threes. The quality of the flowers in these classes was remarkably fine, considering that they were exclusively the production of cottagers—grinders, cutlers, filecutters, &c.—in their spare hours. Their flowers do not attain the size and depth of those grown and shown in the gardeners' classes, but are as a rule superior in point of smoothness and finish. The names of the principal exhibitors in these classes, in addition to Mr. H. Bromhead, were Mr. Jas. Harrison, Mr. J. H. Moore, Mr. G. S. Stocks, Mr. Thos. Mallinson, H. Carnell, A. Bush, W. Grubb, A. Ledger, A. Muscroft, and Jas. Baines.

A good number of groups arranged for effect were shown both of *Chrysanthemums* and of miscellaneous foliage and flowering plants. In those for *Chrysanthemums* Mr. Jas. Harrison was first, Mr. Woodcock second, and E. Pidsley third. In miscellaneous plants, E. Pidsley first, Mr. Collier second, and Mr. Woodcock third. The Judges' decision in this last class was certainly open to criticism. In the cottagers' classes some very pretty groups were staged. Mr. J. S. Roberts first, Mr. G. S. Stocks second, and Mr. J. Harrison third. In trained specimen plants there was little competition, this being the weakest point in the Show, Mr. J. Walker, gardener to B. P. Broomhead, Esq., securing all first prizes, as well as the National Society's certificate for the premier plant in the Exhibition. *Primulas* were well shown, especially so by cottagers, amongst whom Mr. G. S. Stocks had some wonderfully fine plants. There was a fine display of Ferns, both British and exotic, but especially of the former, in which, as is usually the case, Mr. John Eaden was easily first with a valuable collection, Mr. Hy. Davy being second, Mr. J. G. Newsham third; in exotic Ferns Mr. Woodcock was placed first, Mr. Collier second, and Mr. Newsham third. Table plants, *Roman Hyacinths*, bouquets for the hand, and coat bouquets were all numerous and well shown.

Of fruit there was only a moderate display for competition. Mr. D. Gilmour, jun., exhibited two fine bunches of *Gros Guillaume* Grapes; also, not for competition, a very fine plant, well bloomed, of *Cypripedium insigne*. Mr. Jas. Udale, gardener to H. L. Paget, Esq., Elford Hall, Tamworth, sent a splendid collection of hardy fruits, not for competition, which elicited much admiration. Mr. Pidsley also exhibited, not for competition, a huge, vigorous specimen of *Asparagus plumosus nanus*. Messrs. Fisher, Son, and Sibray, Mr. Hiram Shaw, and Mr. Seagrave each exhibited very choice groups of plants, not for competition, which were deservedly much admired. A great many people visited the Show, and the takings at the door more than double those of last year. The Show as a whole was a very fine one, very far indeed in advance of any similar Show previously held in Sheffield.

IPSWICH.

THE *Chrysanthemum* Show of the Ipswich and East of England Horticultural Society was opened at the Corn Exchange, Ipswich, last Thursday. A capital prize list had been arranged, the special contributors being His Grace the Duke of Hamilton and Brandon, K.T., Rev. H. A. Brners, Mr. Frederick Fish, Messrs. Footman, Pretty, and Nicholson, Mr. F. H. Fosdick, Messrs. Gurney & Alexanders, Lord John Hervey, Mr. J. R. Jefferies, Mr. C. E. H. Konright, Mr. John Lummer, Mr. R. M. Miller, Mr. R. Porter, Mr. J. E. Ransome, Mr. F. C. Barker, Mr. T. E. Mayhew. The President is Sir G. N. Broke-Middleton, and the Committee as follows:—Lord John Hervey, E. Packard, Esq., J. E. Ransome, Esq., F. H. Fosdick, Esq., Richard Porter, Esq., H. E. Archer, Esq., Mr. W. F. Cresswell, Mr. T. Blair, Mr. J. Gilbert, and Mr. G. Berry. The Rev. H. A. Brners of Harkstead Rectory is the hard-working Hon. Secretary, and, as usual, he carried out his duties with wonderful success. The office of Secretary was ably discharged by Mr. T. E. Mayhew. The Show is the largest of the kind that has ever been held in the town. There was a large number of entries, and the average quality was higher. The *Chrysanthemums* in pots were arranged round the sides of the hall, and the effect as seen from either end was very fine. There were more groups shown than at last year's Exhibition, and as a rule they were better trained and better grown, but a great advance might be made in this direction. The plants were too tall. Instead of presenting the appearance of an open umbrella the stems are allowed to shoot upwards until, seen from below, the effect is that of a hedge of sticks. We missed from the *Chrysanthemum* classes the name of Mr. G. B. Skinner of the Chantry, who has always been a very successful exhibitor.

For the best collection of not more than twenty-five plants, Mr. R. M. Miller was easily first, surpassing the Rev. C. F. Norman both in the fineness of his blooms and the setting up of his plants. In the amateur class for six trained *Chrysanthemums*, Mr. D. H. Booth, who was a large prize-winner all through, was first. Amongst his plants we noticed a good

Guernsey Nugget and a well-grown Lord Wolseley. The specimen plants, though well bloomed, are not equal to those of last year in the matter of training. Mr. Booth took three firsts, Mr. J. D. Cobbold and the Rev. C. F. Norman one each. In the competition for groups of plants arranged for effect Mr. Cobbold came out the winner, his gardener, Mr. J. Leaver, having made a wonderfully good selection for colour and variety, and his plants were very well set up. Mr. Hammond, Mr. Grimwade's gardener, has got a good lot of plants. The prize for the best collection of Chrysanthemums (persons residing in the borough whose rent does not exceed £12 per annum) was taken by Mr. G. James, a member of the Borough Police Force. A special prize was given by Messrs. Colchester for the best six Chrysanthemums grown with their patent ichthemic guano was won by Mr. H. D. Booth with some fine specimens.

The cut flowers made a remarkably fine display. We noticed in the collection of twenty-four (twelve Japanese and twelve incurved) a new competitor in Lord Brooke of Dunmow (gardener Mr. H. Lister), who carried away the first prize from the well-known grower, Mr. Springbett of Cheshunt. Colonel Lowe of Halstead, who took third in this class, is another new exhibitor, and with ordinary opponents he would undoubtedly have secured the first place. The Rev. H. A. Berners carried off the honours both for Japanese and incurved in the amateurs' class with some splendid blooms. The rest of the distinctions were divided between Mr. Springbett, Mr. Lister, Colonel Lowe, and Mr. F. C. Barker of Ipswich. Messrs. Gilbert & Son, as usual, were first in the competitions for both ball-room and bridal bouquets.

The display of fruit and vegetables was very fine indeed, the collections of the latter more noticeable. Amongst the fruit the Apples and the Grapes especially deserved attention, Mr. Hargreaves' black variety and Mr. May's Alicante and Muscat Grapes being some of the best we have seen. This is the fourth year, we believe, that Mr. May has carried off the honours for Alicante Grapes. The "gardeners' subscription prize," for the best collection containing ten varieties of vegetables, was deservedly won by Mr. Cresswell, gardener to Mr. Charters of Stoke Park. His display would have won distinction at any show in the kingdom.

STREET.—NOVEMBER 19TH AND 20TH.

THIS, the second Exhibition of Chrysanthemums, was generally considered a very great improvement on its predecessor, and it certainly compares most favourably with other more pretentious meetings in the west of England. No better site for a show of this kind than Crispin Hall, Street, could well be had, and very great credit is due to Mr. F. J. Clark and Mr. A. D. Porter for the way in which they arranged the various exhibits in competition.

The principal class was for groups of Chrysanthemums occupying a space 8 feet by 4 feet, and of these there were five arranged, all being very creditable to the exhibitors. The first prize was awarded to G. Chislett, gardener to Mrs. Rees Mogg, Glastonbury, but he was very closely pressed by P. Edwards, gardener to Mr. J. Clark, Street, both having a number of well-grown plants in good variety, the former arrangements, however, being the least formal. Mr. G. Stevens, gardener to Sir A. Hood, was a good third, and Mr. F. J. Clarke was highly commended. The silver medal of the National Chrysanthemum Society, offered for six plants of incurved varieties, was won by Mr. Chislett, who had creditable examples of Lady Hardinge, Mrs. Dixon, Mrs. Rundle, and other well-known sorts. J. Potter, gardener to Mr. A. Colson, was placed second, and A. Andrews, gardener to Mr. W. J. Clark, took the third prize. Mr. Chislett was also first for six Japanese varieties, these including really handsome plants of Nuit d'Hiver, Peter the Great, Mons. Moussillac, and Meg Merrilies. Mr. G. Potter obtained the second prize. Primulas, table, and window plants were also well shown by several competitors. Among the cut blooms were some of the finest we have seen this season. The principal class was for twelve each of incurved and Japanese varieties, and the first prize was easily won by W. Payne, gardener to the Bishop of Bath and Wells, Wells Palace, who had very fine Lord Alcester, Empress of India, Princess of Wales, Princess of Teck, Barbara, Mrs. Heale, Eve, Novelty, and Cherub; and equally good Japanese, Fair Maid of Guernsey, Japonaise, Grandiflorum, Balmoreau, Belle Paule, Baron de Prailly, Meg Merrilies, Madame Lacroix. W. Baskett, gardener to Mr. W. J. Palmer, Reading, took the second prize, and G. Chislett the third, both staging creditably. Mr. Payne also obtained the bronze medals of the National Chrysanthemum Society for both twelve incurved and twelve Japanese varieties. Among the former were very massive fresh blooms of Golden Empress of India, Princess of Wales, Jeanne d'Arc, Lord Alcester, Mrs. Heales, Jardin des Plantes, Lady Slade, Cherub, and Barbara. G. Thatcher, gardener to Mr. A. G. Andrews, was awarded the second prize, and G. Chislett the third. Among Mr. Payne's twelve Japanese sorts the best were Boule d'Or, Mons. Astorg, Baron de Prailly, Triomphe de Châlet, Roseum superbum, Grandiflorum, and Madame Lacroix. The second prize was taken by J. Potter, and Mr. G. Tatchell was third, each having several good blooms. Vases filled with Chrysanthemums and Fern, bouquets of the same, and baskets of autumn foliage and berries were fairly well shown, but there is much room for improvement in this department. Classes were also provided for amateurs, and a competitor in these, a working man, was remarkably successful, his group and cut blooms being exceptionally good.

Mr. F. J. Clarke had quite an interesting display of Orchids, and these fully deserved the certificate of merit awarded by the Judge. Among these the best were *Lælia autumnalis*, *Oncidium Forbesii*, *Odontoglossum Alexandræ*, *Odontoglossum vexillarium*, *Odontoglossum Dayana*, *Oncidium ornithorhynchum*, and *Odontoglossum grande*.

HITCHIN, Nov. 18TH.

THE recently formed Chrysanthemum Society at Hitchin, Herts, held its first Exhibition at the Corn Exchange on Thursday, Nov. 18th. We are pleased to be able to record that, as a first essay, the Show was a success. The date was rather late for first-class blooms in the district; still there were some very fine blooms exhibited. Among the successful competitors special mention may be made of Mr. J. H. Tuke. In the class for twenty-four Japanese a bloom of a Meg Merrilies attracted special notice, all Mr. Tuke's blooms being of remarkable excellence, for which his gardener, Mr. Springham, deserves great credit. The flowers shown by Mr. Kipling from the Knebworth Gardens were but little inferior in merit, conspicuous among

them being a fine specimen of Madame B. Rendatler. Half a dozen splendid blooms of Roseum Superbum (not for competition) came from Mrs. Wilson's garden, Newlands, Hitchin (gardener, Mr. Hartless), twelve Japanese incurved from the same garden taking the first prize in their class. Twelve beautiful blooms, Japanese, from the garden of Mr. S. Lucas, Hitchin, had they been better set up, would have shown to greater advantage, and might perhaps have taken a higher than third. The exhibits also from the gardens of Mr. F. Lucas and Mr. F. Delme, Radcliffe, in the classes for trained dwarf and standard plants were of superior merit and gracefully arranged. In the classes for cottagers, Mr. Jasper Holton, Mr. G. Saunders, and others showed some very fair flowers, and should be encouraged by their successes in the prize-list to persevere in the growth of this beautiful flower.

Groups of flowers for decorative purposes were sent by Mr. G. Perkins, Mr. Tuke, and Mr. S. Lucas. Another group sent by Miss Juliet Lucas received special commendation from the Judges. Ferns and foliage plants kindly sent by Mr. W. T. Lucas, Foxhole, Hitchin, were well arranged down the centre of the room. A string band, conducted by Mr. Buckingham, played during the evening, and greatly added to the enjoyment of the visitors. The Show may in short be said to have pleased everyone, both the visitors and officials, on whom the responsibility of the arrangements rested, and not the least the Treasurer, who reports the probability of a satisfactory balance towards promoting the still greater success of the new Society next year, and we hope for many years to come. The best thanks are due to the Judges, Mr. Norman, gardener to the Marquis of Salisbury at Hatfield House, and Mr. J. Burrell of How House Nurseries, Cambridge; and we must not forget specially to thank Mr. P. T. Harris for his most efficient performance of the duties of Assistant Secretary.

The prizes were awarded as follows:—

Division A.—Three trained standard specimens in pots.—First, Mr. Beale, gardener to Mr. F. Delme, Radcliffe. Six dwarf-trained specimens in pots, single stems.—First, J. Upchurch, gardener to Mr. F. Lucas, Hitchin; second, Mr. D. Shepherd, gardener to Mr. W. T. Lucas, Foxholes, Hitchin. Three dwarf-trained specimens, single stems, in pots.—First, Mr. W. Springham, gardener to Mr. J. H. Tuke, Hitchin; second, Mr. E. Orsman, gardener to Mr. S. Lucas, Hitchin; third, Mr. W. Ranson, Fairfield, Hitchin. Extra, Mr. D. Shepherd. Twenty-four incurved, distinct, single blooms.—First, Mr. W. Springham; second, Mr. A. Cannon, gardener to Mr. H. Blundell, Moulton Lodge, Luton, Beds. Twenty-four Japanese, distinct, single blooms.—First, Mr. W. Springham, gardener to Mr. J. H. Tuke; second, Mr. J. Kipling, gardener to Earl Lytton, Knebworth; third, Mr. A. Cannon. Twelve incurved, distinct, single blooms.—First, Mr. F. J. Hartless, gardener to Mrs. Wilson, Newlands, Hitchin; second, Mr. E. Orsman; third, Mr. D. Shepherd; extra, Mr. H. L. Sell, Luton. Six Anemone (large) single blooms.—First, Mr. T. J. Hartless; second, Mr. W. Springham; third, Mr. E. Orsman.

Division B.—Amateur members of the Society.—Nine incurved, distinct, single blooms.—First, Mr. E. Cotton, Trevor Road, Hitchin. Six incurved, distinct, single blooms.—First, Mr. E. Snow Fordham, Elbrook House, Ashwell. Three Japanese.—First, Mrs. F. A. Wright. Six specimens, not less than three varieties in pots.—First, Dr. O. Foster, Hitchin.

Division C. (Cottagers).—Three specimens in pots.—First, G. Norris, Benslow, Hitchin; second, G. Saunders, St. Michael's Mount, Hitchin. One specimen in pot.—First, G. Norris; second, G. Saunders. Six cut blooms, not less than three varieties.—First, Jasper Holton; second, G. Norris. Three cut blooms.—First, G. Saunders; second, Jasper Holton.

ASCOT AND SUNNINGHILL.—NOVEMBER 17TH AND 18TH.

THE third annual Exhibition was held in the precincts of the Grand Stand at Ascot, by the kind permission of the Royal Ascot Grand Stand Trustees. The Exhibition was in every sense a full one, and especially strong in groups of plants and Japanese cut blooms. The incurved was well represented, and some first-class flowers were shown; but some of the Queen type were about two or three days past their best, and consequently open in the centre. The prizes for groups of Chrysanthemums, 50 feet, were won by Mr. Hughes, gardener to H. F. De Paravicini, Esq., Mr. Lane, gardener to Miss Durring-Smith, Mr. Read, gardener to A. Magniac, Esq., and Mr. Savage, gardener to Baron Huddleston, in the order of their names. Miscellaneous groups by Mr. F. Paul, gardener to J. C. Bowring, Esq. (Orchids and Palms), Mr. Sinclair, gardener to the Marchioness of Downshire, and Mr. Wells, gardener to R. Ravenhill, Esq., who were first, second, and third respectively. Specimen plants were fairly represented and some nicely finished, the chief prizewinners being Messrs. Lane, Read, Savage, Smee, Hughes, and Nichols. The chief prize for cut blooms was a silver cup, presented by the Hon. Mrs. Ashley Ponsonby, for eighteen incurved and eighteen Japanese, distinct, and this was won by Mr. Tomlin, gardener to J. Ashby, Esq., with two good stands of fine and fresh flowers; Mr. Page, gardener to A. Louthard, Esq., was second with good Japanese, and Mr. Lowe a close third. For eighteen incurved Mr. Strong, Wellington College, was first with a fine and nicely finished stand of blooms of the leading varieties, with Mr. Hughes second, Mr. Page third, and Mr. Paul third. In the corresponding class for eighteen Japanese some remarkably fine stands were shown, the first going to Mr. Page, the second to Mr. G. Cole, gardener to C. W. Hamilton, Esq., the third to Mr. Popple, gardener to the Hon. Lady Stepney. For twelve Japanese Mr. Lane first, Mr. Tomlin second, and Mr. Savage third. For twelve incurved Mr. Lane was again first, Mr. Tomlin second, with Mr. Sinclair third. The prizes for six incurved, distinct, Mr. Cole was first, Mr. Read second, and Mr. Godfrey third, and for six Japanese, distinct, Mr. Read first, Mr. Hibbins, gardener to General Thornhill, second, and Mr. Saunders, gardener to the Honourable Ashley Ponsonby, third. The class for six of one variety was well represented, especially in the Japanese. For six incurved Mr. G. Cole was first with fine blooms of Queen of England, second Mr. Tomlin with Lord Alcester, and third Mr. Lane with the same variety, all three stands large in size and fine in the petal. Mr. Lane was first in the Japanese class with six very fine flowers of Belle Paule, Mr. Page second with Japonaise, and a grand stand of J. Delanx was third.

The classes for table plants, berried Solanums, and Primulas were all very attractive, and fruit was represented by black and white Grapes, Apples, and Pears in good condition. Messrs. John Standish & Co. put up

a fine bank of Chrysanthemums, fringed with Palms and Ferns, not for competition, and Messrs. Sutton & Sons showed sixty-five dishes of Potatoes in their well-known style. The same firm offered special prizes for a collection of vegetables, which brought out a strong competition. Mr. R. Watkins was the courteous Secretary, and Messrs. Hay and Read Staging Committee. All had their energies taxed to their utmost to get the exhibits arranged, which was not done in time to allow the Judges to get through their duties until long after the public were admitted. Some allowance no doubt was to be made for the very wet morning and the distance some of the exhibitors had to come—two reasons that probably caused the delay in this otherwise well-managed and flourishing Society.

CHORLEY.—NOVEMBER 19TH AND 20TH.

THIS Society's third annual Show of Chrysanthemums, plants, fruit, and vegetables on the above dates proved a remarkable success. The spacious Town Hall was filled with highly meritorious exhibits, the open and gentlemen's classes bringing exhibitors from a considerable distance, and the amateurs' well-filled classes proved their interest and skill in Chrysanthemum growing.

Groups were a leading feature in the open class. For a group of Chrysanthemums arranged for effect Mr. J. Mollison, gardener to J. Eckersley, Esq., Brent House, Adlington, was conspicuously to the fore, having in fine condition plants of Princess of Teck, Soleil Levant, Madame C. Audiguier, Criterion, Empress of India, Queen of England, Fleur de Marie, L'Incomparable, &c. Second and third places were taken by Mr. G. Smith, gardener, Ellerbeck Hall, and Mr. G. Parks, gardener to Lieut.-Col. Farington, respectively with fine banks. With a group of Ferns arranged for effect Mr. Drinkwater, gardener to Mrs. Baines, Prospect House, Wheelton, was first, and Mr. J. Smith, gardener to R. Shackleton, Esq., Wittenell House, second, whose plants were decidedly better than the first, as also were those placed third (Mr. Mollison), but more closely and flatly arranged. A fourth group received a special prize. The prizes for a group of miscellaneous plants for effect brought but two competitors, Mr. G. Parks being first with a tasteful arrangement, which included well-grown Crotons, Dracenas, Pandanus, all brightly coloured, a well-flowered plant of Clerodendron Balfourianum, &c. Mr. J. Harrison, nurseryman, Chorley, was second with a group of mostly small decorative plants. Messrs. Morley & Co. of Preston were first with Carnations and Bouvardias; Mr. Mollison first with Primulas, Mr. G. Smith second, and Mr. G. Parks third. Mr. G. Smith was first with Cinerarias, and Mr. Chapple, gardener to E. Jackson, Esq., second. Roman Hyacinths (six pots).—First, Mr. G. Parks; second, Mr. J. Harrison, who was placed first for six pots of Cyclamen. There were several good lots of table plants. Mr. Jones, gardener to Mrs. Shaw, Bolton, took first prize for a good six, and was closely followed by Messrs. Mollison and Thrupp, gardener to H. J. Walmesley, Esq., Wigan.

Competition in the classes for pot plants was very keen. For six plants, three incurved and three Japanese, Mr. Chapple was well first, his best being Queen of England, Countess of Granville, La Nympe, and R. Ballantue. Second, Mr. G. Smith, with Lord Wolsley, Princess of Wales, Comte de Germiny, Jardin des Plantes, L'Incomparable, and F. A. Davis. Third, Mr. Dickinson, gardener to J. B. Cardwell, Esq., Whittle Springs, who had F. A. Davis and Guernsey Nugget very good. For three plants Japanese, reflexed, and incurved, Mr. F. Smith came first with Comte de Germiny, Cullingfordi, and Mrs. G. Rundle. Second, Mr. Chapple with Elaine (exceedingly good), Emperor of China, and Empress of India. Third, Mr. G. Parks. Three Pompons, Mr. Chapple first with Cedo Nulli, White and Lilac, and Golden Mlle. Marthe; Mr. G. Smith second, and Mr. Dickinson, whose plants were very stiffly trained, third. For single specimen, Pompon excluded, Mr. Chapple was a capital first with a magnificent plant of La Nympe; Mr. G. Smith second with Mrs. Forsyth, and Mr. J. Smith third. Specimen Pompon: first, Mr. Mollison, with a very fine specimen of Sœur Melanie, which perhaps is disputable as a Pompon second, Mr. G. Smith with Rosinante, very good; Mr. Chapple being third, but was first for specimen standard incurved, Mr. G. Parks being second.

The stands of cut blooms were numerous and exceedingly good. Mr. Chapple was awarded first for eighteen, nine Japanese and nine incurved. His best blooms were Lord Wolsley, Princess of Wales, Nil Desperandum, Soleil Levant, L'Adorable, and Elaine; Mr. Jones being a very close second with splendid blooms of Golden Empress of India, Princess Teck, Criterion, Comte de Germiny, Peter the Great, &c. Third, Mr. G. Parks, who had Boule d'Or, Fair Maid of Guernsey, Jeanne d'Arc, and Lord Alcester, very good. Mr. Jones took first for twelve blooms, having Chevalier Domage, Cullingfordi, Dr. Sharpe, Empress, and Golden Empress of India, fine. Mr. G. Parks second; among his best were White Beverley, Jeanne d'Arc, King of Crimson, and Lady Margaret. Third, Mr. J. Smith. Six cut blooms: First, Mr. Chapple; second, Mr. Dickinson; third, Mr. Mollison.

Hand and bridal bouquets were shown, the prizetakers for both were Messrs. Mossley, Jones, and Harrison respectively.

Fruit though not abundant was very fine. For black Grapes, two bunches, Mr. Mollison was first with Black Alicante, Mr. G. Parks second. Mr. W. Smith, Duxbury Hall, was awarded a special for scarcely less meritorious bunches; third Mr. Thrupp. Mr. W. Smith was well first for two bunches, white, with Muscat of Alexandria; Mr. Thrupp followed with Golden Queen, and Mr. Park third with smaller bunches of Muscat of Alexandria.

Mr. W. Smith had an excellent tray of vegetables, which won him first honours; Messrs. Mollison and Drinkwater, with capital collections, being second and third respectively. A special class was provided for farmers, which brought out very spirited competition in vegetables. Among many other plants not for competition was a very fine Lemon loaded with ripe or nearly ripe fruit, sent by Mr. G. Parkinson, gardener to H. Rawcliffe, Esq., Glibbrand Hall.

LEEDS.—NOVEMBER 22ND AND 23RD.

SEVERAL years ago Chrysanthemum shows were held in Leeds, but not such exhibitions as are now provided in various towns and districts. The last shows lapsed, and the present one is the first of what is hoped will prove the forerunner of a brilliant series to follow in future years. Last autumn the active Chairman of the Committee of the Leeds Horticultural Society, Mr. R. Featherstone, visited a number of Chrysanthemum shows both in the south and north of England, and in a paper which he subse-

quently read on the subject arrived at the conclusion that a good exhibition might be held in Leeds. But active steps to this end were only commenced a month or two ago, these arising mainly out of a liberal offer made by the directors of the Coliseum, which the Committee of the Society felt justified in accepting. An excellent and well arranged schedule was forthwith prepared, and a surprisingly good show resulted. The Coliseum is a splendid building, and the show that was effectively arranged was seen to great advantage under the electric light. Excellent provision was wisely made for groups of plants, and of these not less than thirteen were arranged, and these, with the orchestral decorations by Mr. Featherstone, presented an imposing appearance. With a group of miscellaneous plants, ornamental foliage interspersed with Chrysanthemums, in 200 square feet, first Mr. R. Featherstone, St. Ann's Nursery, Kirkstall, bold, free, and effective. In the class arranged in 150 feet Mr. Featherstone was again first with a splendid group. Second Mr. J. Sunley, gardener to Rev. B. Hemsworth, Monk Fryston Hall, South Milford, a creditable arrangement, but a little too flat and smooth. Group of Chrysanthemums, in 50 square feet, first Mr. Grix, gardener to Sir James Kitson, Bart., a free, good, bright, and bold assortment. Second R. Boston, Esq., The Mount, Bewley, free and pleasing. Third Mr. J. Sunley. In the group occupying 100 square feet, first Mr. W. Townsend, gardener to Hon. R. T. Parsons, Birr House, Gledhow, with a very imposing and excellent arrangement of healthy plants.

Cut Blooms.—The chief prize in the class for thirty-six incurved and the same number of Japanese was won by Mr. Midgley, gardener to H. Mason, Esq., Bankfield, Bingley, with truly admirable stands. Incurved blooms—Jeanne d'Arc, Emily Dale, Queen of England, Alfred Salter, Hero of Stoke Newington, Mrs. Heale, Princess of Wales, Beauty, Barbara, Mrs. Bunn, Princess Teck, Fingal, Golden Empress, Empress of India, Lord Wolsley, Jardin des Plantes, and Nil Desperandum. Japanese—The Khedive, Belle Paule, Boule d'Or, Madame C. Audiguier, Fernand Ferral, Album Plenum, John Laing, La Nympe, R. Ballantyne, Hiver Fleuri, Fair Maid of Guernsey, Baronne de Prailly, Mons. Lacroix, J. Delaux, Japonaise, Meg Merrilies, Mons. Burnet, and Duchess of Albany. Mr. T. R. Morton, Darlington, was a good second, and Mr. J. T. Sharp, Almondbury, Huddersfield, a rather close third. In the class for twelve incurved blooms Mr. Midgley was first with fine examples, Mr. Holmes, Summer Hill, second, Mr. Ramsden third. Excellent stands of twelve Japanese blooms were staged, Mr. Midgley being again in the premier position with fresh heavy blooms; Mr. Ramsden second, Mr. T. B. Morton third, an extra award being made to Mr. J. T. Sharp.

Messrs. Black & Duggleby, Malton, were first in the class for twelve blooms of incurved and twelve Japanese with neat fresh examples; second Mr. Grix, very close; third Mr. J. Sunley. There was excellent competition in stands of twelve blooms, including three each of incurved, Japanese, reflexed, and large Anemones; Mr. Midgley being first, Mr. Ramsden second, and Mr. Holmes third, all staging well. Very good stands of six reflexed blooms were staged, the prizes falling to Messrs. Morton, Black, and Featherstone in the order named; and for six Anemones Messrs. Grix, Sharp, and Featherstone, all with neat stands of blooms. Mr. Featherstone staged the best Anemones and single Chrysanthemums, and Mr. Sharp the best Pompons. Mr. Featherstone exhibited the first-prize group of table plants, very healthy and neat examples of suitable kinds. The last-named exhibitor, too, achieved a great triumph in the classes for bouquets, being first for a ball bouquet; also for bride's bouquet, and a bouquet of Chrysanthemums, with arrangements far above the average as seen at exhibitions. Time did not permit our taking a more complete report of the Show, which as a first exhibition was the finest we have seen. It was well managed by Messrs. Featherstone, Lazenby, and Hemming, with Mr. J. H. Clark, the experienced Secretary. The Exhibition was opened by the Mayor, and with good public patronage there is no valid reason why Leeds should not provide Chrysanthemum Shows ranking with the best in the kingdom.

WIMBLEDON.—NOVEMBER 18TH.

A HIGHLY satisfactory Exhibition was held in the Drill Hall at Wimbledon last Thursday, one of the best of the local shows around the metropolis. The hall is of convenient size for the purpose, but it was well filled, the groups and plants being tastefully arranged near the walls, with the cut blooms on tables in the centre. One of the principal features of the Show was a charming group from Mr. Lynes, gardener to —Schlusser, Esq., Belvedere House, Wimbledon, comprising the freely grown Pompons for which the exhibitor is so famed, with Palms, Ferns, Crotons, Bouvardias, Lilies, and a margin of Panicum. Considerable taste was displayed in the arrangement of this group, all the plants being exceedingly fresh and healthy. In the class for a group of miscellaneous plants Mr. J. Law, The Priory Gardens, Wimbledon, was first, having a most graceful combination of Bouvardias, Ferns, and Pelargoniums, margined with Selaginella. Mr. Smith, gardener to J. F. Schwann, Esq., Oakfield, Wimbledon, was second with a group not quite so light as the first, but he won the premier position with a group of Chrysanthemums, having admirable dwarf plants, chiefly incurved, bearing fine blooms. Mr. Hunt, gardener to C. Boyle, Esq., was a good second with compact freely flowered plants.

Cut blooms were excellent, especially in the class for twenty-four blooms (twelve Japanese and twelve incurved) in which Mr. H. Alderman, Morden Hall, Mitcham, took the lead with large and beautiful specimens. Mr. G. King, gardener to Mrs. Few, Wolsey Grange, Esher, was a very successful exhibitor, staging the best twelve incurved, twelve Japanese, and six Japanese, all capital blooms. Messrs. Alderman, Smith, and J. Bentley, gardener to Sir T. Gabriel, Edgecumbe, won the other prizes. The amateurs' classes were well filled, R. Nagle, Esq., Bijou Cottage, Queen's Road, Kempton, being the most successful exhibitor.

Non-competing contributions were furnished by several exhibitors. Messrs. D. S. Thomson & Son had a large group, Mr. Gibson some handsome cut blooms, Mr. W. Smith a stand of Pompons, and Mr. Methven a collection of vegetables. Messrs. Alderman and Smith were the chief exhibitors of fruit and table plants.

TAVISTOCK.—NOVEMBER 17TH.

THE Cottage Garden Society at the above-named town held a Chrysanthemum and Fruit Exhibition this year, but as it was an experiment no prizes were offered. The Show took place in the Town Hall on Wednes-

day, the 17th inst., and was considered by all a very great success. The principal gentlemen of the district sent collections of plants and flowers, and such a splendid collection of fruit, principally Apples and Pears, has not been seen in the West of England for many years. Messrs. T. Rivers and Son, Sawbridgeworth, sent between fifty and sixty dishes of fruit, and Messrs. G. Bunyard & Co., Maidstone, sent twenty-four dishes of Apples. These two collections were admired by all, while the collection of forty dishes sent by W. H. Chichester, Esq. (Mr. F. Yole, gardener), of Grenofen, was quite equal to those from the nurserymen. Excellent fruit was also shown by F. Bradshaw, Esq., Lifton Park (Mr. G. H. Mounsdon, gardener); R. Kelly, Esq., of Kelly (Mr. Gullock, gardener); R. B. E. Gill, Esq., Beckham Park (Mr. Davey, gardener); Earl Fortescue, Castle Hill (Mr. R. Nicholas, gardener). Other exhibitors were:—Mr. R. Polgren, St. Germans; Messrs. J. Dingle & Son, Saltash; Piers Edgcombe, Esq., Edgcombe; W. O. Ward, Esq., Tavistock; Mr. H. Skinner, Tavistock; Mr. T. Cole, Tavistock; Mr. Stephens, Calstock; Mr. Bailey, Calstock; Mr. Martin, Calstock; Mr. Beale, Stoke; and Mr. Eldy, Tavistock. The hall was lighted by the Thomson-Houston Electric Light in the evening, and the effect on the flowers and fruit was most charming.

CHISWICK.—NOVEMBER 18TH.

A PRETTY show of Chrysanthemums, fruit, and vegetables was held in the Vestry Hall, Chiswick, on Thursday last, and though the prizes were of moderate amounts, the competition was good in the majority of the thirty-two classes.

The cut blooms, though not of remarkable size, were distinguished by a very satisfactory neatness and symmetry. For twenty-four blooms, twelve incurved and twelve Japanese, Mr. C. J. Waite, gardener to Col. the Hon. W. P. Talbot, Glenhurst, Esher, gained the premier place in a close competition with five other exhibitors, his blooms being fresh and compact. Mr. H. Collyer, gardener to Mrs. Murrell, The Elms, Ealing, was a close second, his incurved blooms being larger, but the Japanese were smaller. Mr. C. Long, gardener to E. B. Ridges, Esq., Orchard Dene, Ealing, and Mr. E. Chadwick, gardener to E. M. Nelson, Esq., Hanger Hill House, Ealing, followed, each showing well. With twelve incurved, Mr. Collyer took the lead with medium size but pretty blooms; Mr. A. Wright, gardener to E. H. Watts, Esq., Devonhurst, Chiswick, securing the second place. Mr. Waite had the best twelve Japanese, very bright samples of Thunberg, Baronne de Prailly, Japonaise, and Triomphe de la rue des Châlets; Mr. G. Fulford, gardener to J. Boosey, Esq., Hill House, Acton, and Mr. R. Woods, gardener to Mrs. Sanderson, Duke's Avenue, Chiswick, securing the other awards. Pompons were capitally shown by Mr. Collyer, as also were his reflexed blooms, with both of which he gained first honours.

A handsome group of Chrysanthemums was staged by Messrs. W. Fromow & Sons, Sutton Court Nursery, who were placed first in the class, their plants being dwarf, healthy, and profusely flowered specimens. Mr. A. Wright was second with taller and less compact plants. A beautiful group, not in competition, was contributed by Mr. J. Roberts, Guisersbury Park Gardens, and Mr. May, gardener to the Marquis of Bute, had a similarly large and attractive group of Chrysanthemums. The prizes offered by F. G. Tautz, Esq., for a single specimen stove or greenhouse plant in flower brought several competitors, Mr. A. Wright taking the first prize for a good specimen of *Cypripedium* insigne with fourteen flowers.

Fruit comprised some good Apples and Pears from Messrs. Hudson, Chadwick, and Waite and Coombs. Mr. Hudson also had the best black and white Grapes, Alicante and Muscat of Alexandria respectively. Messrs. Davis, Chadwick, and Wright followed. Messrs. Sutton & Sons, Reading, offered prizes for a collection of vegetables, which were won by Messrs. Waite, Coombs, and Chadwick amongst six exhibitors. Mr. J. Smith, 29, Montgomery Road, Acton Green, was first with a bouquet of Chrysanthemums composed of bronze, yellow, and white blooms. Mr. Gardener, Queen's Road, Bayswater, had some tasteful wreaths and crosses, and Messrs. Hooper & Co. a group of Carnations in pots.

LUTON.—NOVEMBER 17TH.

THE third annual Chrysanthemum Show of the above Society was held in the Plat Hall, Luton, a fine building, most suitable for exhibitions of this description. This Society is anxious to increase the taste of horticulture, and a good response was made to the liberal prizes they offer, especially in the plants, cut flower, and vegetable classes. Great praise is due to the Secretary and the Committee for the able manner in which they manage the affairs of the Society.

Plants were shown in quantity, the groups being the principal feature of the Show. So evenly matched were the two best groups, that the Judges awarded them equal firsts, Mr. E. Couper and Mr. Kershaw. Both of these groups contained some first-rate flowers. Second, W. Phillips, Esq., The Laurels. Third C. Mies, Esq. The specimen plants were from the first being awarded to Mr. Kershaw.

Cut flowers, especially the incurved, were considerably below par; the Japanese were far better. For twelve incurved, Mr. Jarvis, gardener to Baron Dimsdale, was first, Mr. Kershaw second. For twelve Japanese these two exhibitors were again to the fore, but the order was the reverse. For twenty-four large flowering blooms, any sort, Messrs. Hogg and Gibbin were to the front.

Fruit on the whole was poor, the Grapes especially so, and there was only one entry for the collection, and that was only awarded the second prize. Apples and Pears were fairly represented, the first in both for collections of each Mr. Garrard obtained, gardener to G. Tilbury, Esq.

Vegetables were shown in great quantity and made a good show, such as Potatoes, Onions, Parsnips, Carrots, Cauliflowers, Celery, &c., were fairly represented. The first for collection of vegetables, Mr. Jones of Harpenden secured, while that for a collection of Potatoes Mr. Eling of Luton took. The amateurs' and cottagers' classes were well filled, the competition being very close in many classes. An interesting feature was the competition for collections of wild fruit and berries, for which there were five entries. The first prize was secured by Master J. Bloomfield, who showed over four dozen varieties, legibly named. The entries for baskets and bouquets of Chrysanthemums were numerous, and made a good display. The special prize offered for the best *epergne* was also well contested.

BRADFORD-ON-AVON.—NOVEMBER 18TH.

THIS busy little Wiltshire town now has its annual Exhibition of Chrysanthemums, fruit, and vegetables, and considering the difficulties the Committee have to contend with, they are to be congratulated upon the successful termination of their labours. The Honorary Secretaries, Messrs. C. J. Jones and W. E. Taylor, with whom are associated a number of enthusiastic gentlemen in the neighbourhood, all worked hard to collect and arrange a good show, and on the whole the result must have proved satisfactory to them. Very few trained plants were shown, and in comparatively small shows they can be very well dispensed with. There were a few classes open to all comers, and in these Mr. G. Tucker, gardener to Major Tucker, Trowbridge, was most successful, his cut blooms of incurved, Japanese, and Anemone-flowered sorts being most praiseworthy. Mr. B. Hopkins, gardener to John Baily, Esq., Frome, also showed good cut blooms, and was awarded two prizes. Special prizes were offered by Messrs. Cooling & Son, Bath, for a group of miscellaneous plants from which Chrysanthemums were excluded, and for these there were two entries. The first prize was rightly awarded to Mr. John Baily, who had a very tastefully arranged group, composed largely of *Dracenas*, *Arums*, *Calanthes*, and *Poinsettias*. Mr. J. Gay, gardener to M. Palmer, Esq., took the second, his more formal arrangement of choice plants including several good *Crotons* and *Poinsettias*.

Among the local exhibitors of plants the most successful were Messrs. J. Weston, gardener to the Rev. C. C. Layard, J. Gay, J. Gibbs, gardener to Mr. F. Applegate, W. Rawlings, gardener to Lady Swinburne, W. Mattock, gardener to Mr. J. G. Foley, C. J. Jones, and A. Gishford. Several of the same names occurred in the list of prizewinners with cut flowers, fruit, and vegetables, of which there were a creditable lot in competition; and in addition, Mr. J. Morgan, gardener to Mr. J. F. Hayward, Miss E. Gibbs, Mrs. G. Farrington, Mr. E. Burbidge, and Miss Wassell were also successful. Amateurs not employing a regular gardener exhibited surprisingly well in the various classes set apart for them, and the exhibits of Messrs. C. J. Jones, W. E. Taylor, H. Wilkins, and Dr. Highmore were worthy of special mention. In addition to the capital vegetables and fruit shown by amateurs, there were also considerable quantities of vegetables shown by cottagers, including some of the best Schoolmaster Potato we have seen this season.

HAWKHURST.—NOVEMBER 16TH AND 17TH.

NOT a large but a very good display was the general verdict passed upon the fourth annual Exhibition of this Kentish Society. It was held as usual in the Lecture Hall, and to Messrs. Cook, G. M. Newman, and Arnold belongs most of the credit for originating and maintaining the Society in a flourishing state.

The best three specimen plants of incurved varieties were staged by Mr. J. Gilmour, gardener to the Right Hon. G. J. Goschen, these consisting of Mrs. Rundle, Mrs. Dixon, and Venus in excellent condition. Mr. J. Knapp, gardener to H. Maynard, Esq., was second, and Mr. L. Barnes, gardener to Lieut.-Col. Herschell, third, both having very creditable exhibits. In the class for three Japanese varieties Mr. Knapp staged very finely flowered specimens of *The Cossack*, *Hiver Fleuri*, and *La Frisure*, and was rightly awarded the first prize, Mr. Barnes being a good second, and Mr. Gilmour third. With reflexed varieties Mr. Gilmour was well first, staging good specimens of *Cullingfordi*, *Dr. Sharp*, and *Emperor of China*. Mr. Gilmour was also first for both Anemone-flowered and Pompon varieties, the second prize in each instance being awarded to Mr. Knapp. Three highly creditable groups of plants were arranged, Mr. Knapp taking the first prize, Mr. Gilmour the second, and Mr. H. Bailey, gardener to Mrs. Springett, the third. Amateurs and cottagers also made a good show in the classes provided for their products, the exhibits of Mr. J. Fuller and Mr. A. Corps being most noteworthy.

Cut blooms were not so numerous as anticipated, especially seeing what a number of well-kept private gardens there are in the neighbourhood. Mr. Gilmour was the only exhibitor in the classes for twenty-four incurved and twenty-four Japanese varieties, and was deservedly awarded the first prize in both instances. His best incurved were *Lord Alcester*, *Empress of India*, *Mrs. W. Shipman*, *Barbara*, and *Golden Empress of India*; while among the Japanese were good blooms of *Comte de Germiny*, *Thunberg*, *Golden Dragon*, *Madame C. Audiguier*, and *Curiosity*. With twelve incurved varieties Mr. Hickmott of Cranbrook was a good first, his best being *Golden Empress of India*, *George Glenny*, *Guernsey Nugget*, and *Lord Alcester*. Mr. Barnes was second, the positions being reversed in the class for twelve Japanese varieties. In Mr. Barnes's first-prize stand were good blooms of *Madame C. Andiguier*, *Source d'Or*, *Bouquet Fait*, and *Fair Maid of Guernsey*. The best large Anemone-flowered were staged by Mr. Gilmour. Mr. Knapp taking the second prize.

Apples and Pears are usually abundant and good at the Hawkhurst Shows, and on this occasion the local gardeners fully maintained their reputation. Mr. Gilmour had the best six dishes of dessert Apples, the second prize being awarded to Mr. H. Curtis, gardener to the Hon. J. S. Gathorne Hardy, and the third to Mr. Lewis Barnes. Messrs. Gilmour and Curtis were also respectively second and third for one variety of dessert Apples. In the class for six varieties of kitchen Apples Mr. Gilmour staged very fine dishes of *Warner's King*, *Lord Derby*, *Blenheim Orange*, *Waltham Abbey Seedling*, *Striped Beafin*, and *Rymer*, and was awarded the first prize. Mr. R. Titley, gardener to J. Thomson, Esq., was a good second, and Mr. L. Barnes third. With four varieties of Pears Mr. Curtis was first, having capital dishes of *Beurré d'Anjou*, *Doyenné du Comice*, *Duchesse d'Angoulême*, and *Beurré Diel*. Mr. J. Iggulden, gardener to the Rev. Canon Jeffreys, was second, and Mr. Barnes third, both having clean handsome fruit of good varieties. Mr. Curtis was first and Mr. J. Iggulden second for a single dish, and Messrs. Gilmour and Iggulden were the prizewinners with stewing Pears. Mr. Curtis was awarded the first prize for good bunches of *Muscat of Alexandria* Grape, and Mr. Barnes was a creditable second.

Several ladies and gentlemen, as well as gardeners, contributed various interesting exhibits not for competition, and everything that could be thought of was done to make the Show a great success. Probably if rather more liberal prizes were offered exhibitors from a distance might be tempted to compete; this experiment wherever tried invariably improving the attractions as well as the position of the Society.

GRAVESEND AND NORTH KENT.—NOVEMBER 16TH AND 17TH.

The thirteenth annual Exhibition of this flourishing Society was held in the Drill Hall, Gravesend, on Tuesday and Wednesday, November 16th and 17th. The exhibits were both numerous and good, and the arrangements were very creditable to the Secretary, Mr. Faire and the able Committee that assisted him. The competition in the classes for cut blooms was very close. In Class 29, for twenty-four incurved blooms, Mr. Phillips, gardener to Dr. Barber, Meopham, was first with grand blooms of Brouze Queen of England, Alfred Salter, Golden Queen, Lord Alcester, Golden Empress, Jeanne d'Arc, Empress of India, Lord Wolseley, Prince Alfred, Mrs. W. Shipman, White Venus, &c. Mr. Stephens, gardener to A. Tolhurst, Esq., Northfleet, second. In Class 30, for twelve incurved, Mr. Richardson, gardener to Sir James Ferguson, Singlewell, was first with good blooms of Prince of Wales, Duchess of Teck, Lord Alcester, Golden Empress, Eve, Jeanne d'Arc, Queen of England, Lord Wolseley, &c. In Class 33, for twenty-four Japanese, Mr. Phillips was first with extra fine blooms of Belle Paule, Val d'Andorre, Carmen, Fair Maid of Guernsey, Jupiter, M. C. Audiguier, Meg Merrilies, Mdle. Lacroix, and Coquette de Castille. Mr. Stephens being a good second. In the class for twelve large Anemone Mr. Phillips was again first with fine blooms. For twelve reflexed, Mr. Stevens was first with fine blooms of Cloth of Gold, King of Crimson, Beauté du Nord, Cullingfordi, Dr. Sharp, Mrs. Forsyth, &c.

In the classes for trained plants, for which this Show is famous, about eighty plants were staged. In Class 1, for four dwarf-trained plants, Mr. J. Hollman was first. In Class 3, for four trained standards, Mr. Pope, gardener to John Russell, Esq., was first, and in other classes the prizetakers were Messrs. Kitchingham, Nicholson, and Pope. With a single pyramid Mr. Kitchingham was also first with Caliope, a grand plant that has been shown for the last eight years, and has carried off seven first prizes. Mr. Carpenter was first in the class for trained Pompons, his plants being the best in the Show.

In Class 52, collection of vegetables, twelve varieties, Mr. Phillips was first, Mr. Stevens, second. In the classes for Grapes Mr. Phillips was first, Mr. Kitchingham, second.

The miscellaneous exhibits included a splendid collection of cut blooms from Mr. W. Etherington, Swanscombe, which included fine examples of Belle Paule, Japonaise, Val d'Andorre, Mdle. Lacroix, Mr. J. H. Laing, Jupiter, Fair Maid of Guernsey, Carmen, &c.; and among the new varieties imported this year were Lady Mathieson, Anna Clark, William Clark, Mdle. Paul Dutour, M. le Marquis de Munn, Madame Maria Clop, Paul and Son, M. Meuke, fils, Mr. H. Elliott, J. D. Hillier, Madame Charlotte de Montcabrier. Altogether thirty-six new varieties were staged. This collection proved a great attraction, and many of them will make splendid exhibition flowers.

The Exhibition was opened by the Mayor of Gravesend, R. Fletcher, Esq., and there was a crowded attendance on both days.

COLNBROOK AND DISTRICT.—NOVEMBER 17TH AND 18TH.

The fourth Show of this enterprising Society was held in the Public Rooms of the old-fashioned little town of Colnbrook, some four miles from Slough, on the Great Bath Road, on the above date, and in all respects proved a successful one, although the first day was very wet. Much interest is evinced by the local gentry, Dr. Meadows of Poyle Manor and Mrs. Meeking of Richings Park contributing largely to the success of the Show. Trained plants were a strong feature, comparing most favourably with those seen at metropolitan exhibitions, especially those exhibited by Mr. Gates, gardener to Dr. Meadows, who took all the first prizes. In class 2, for three large-flowered (not Japanese) Mr. Gates' best plant was a finely flowered Lord Derby; second Mr. Aitken, Richings Park. For a similar number of Japanese, first Mr. Gates; his Mons. C. Hubert and William Robinson were grandly flowered plants. Second Mr. Aitken; third Mr. Francis. For a single specimen Mr. Gates was again first with a large and fine plant of Hiver Fleuri. The best group of plants came from Mr. Aitken, although closely pressed by Mr. Gates; third Mr. Francis.

Cut blooms in eighteen distinct varieties (not Japanese).—First Mr. Aitken with good Mr. Brunlees, Lord Alcester, Empress Eugenie, &c. Mr. Gates was a very close second; Mr. Fletcher third. For twelve Japanese (distinct) Mr. Gates was a good first, his stand including very fine blooms of Boule d'Or, Triomphe de la Rue des Chalets, Soleil Levant, Madame J. Laing, and Thunberg. Second Mr. Aitken; third Mr. Hancock. With six of any variety Mr. Gates scored another first with a fine stand of Soleil Levant. Classes were also provided for amateurs, the chief prizetaker being Mr. Stribling of Colnbrook, who showed a very pretty group, also nicely trained plants. The same exhibitor secured the principal prizes for cut blooms in this division with highly creditable examples. Classes for Grapes, Apples, Pears, and miscellaneous plants brought good competition, and helped to make a very interesting Show.

DEVIZES.—NOVEMBER 16TH.

This fixture bids fair to soon become one of the most popular in the neighbourhood, and every year a marked improvement in every respect is very apparent. Mr. Thomas King, the experienced gardener at Devizes Castle, superintends all the arrangements, and otherwise affords much assistance to the Honorary Secretary, Mr. C. N. May. Good prizes are offered for both plants and cut flowers, and in addition a valuable challenge cup is adjudged to the winner of the greatest number of points in the various classes. This was well won by Mr. Hale, gardener to C. May, Esq., Devizes, who was very successful in the plant classes. Mr. Tucker, gardener to Major W. P. Clarke, Trowbridge, W. Stancombe, Esq., Potterne, the Rev. C. E. B. Barnwell, Devizes, and Major Colston, also exhibited well and successfully in the different plant classes.

The silver cup, value five guineas, offered for the best twenty-four blooms, half to be incurved and half Japanese, was well won by Mr. W. Wildsmith, gardener to Lord Eversley, Heckfield, who had really fine examples of well known sorts. Mr. Tucker was second, his Japanese varieties being much inferior to those in the third prize lot staged by Mr. E. S. Cole, gardener to W. Pethick, Esq., Sneyd Park, Bristol, but he had slightly the advantage with incurved varieties. Mr. Hale and also Mr. Miller, gardener to F. Tagart, Esq., Old Sneyd Park, Bristol, were commended for their exhibits in this class. Messrs. Wildsmith, E. S. Cole, G. Tucker, and

E. Miller were the principal prizewinners in the other classes for cut blooms, and Mr. Walter King was the most successful competitor with a vase of cut flowers and also a basket of autumn foliage and berries. The Exhibition was very well attended.

YORK.

The Ancient Society of York Florists held their sixth annual Show of Chrysanthemums and other flowers in the large and central halls of the Yorkshire Fine Art and Industrial Exhibition, and it would be difficult to imagine a better place for the purpose. The Show was, upon the whole, the best the Society has had, and year by year a marked improvement is noticeable in the quality of the exhibits.

Prizes were offered for groups of miscellaneous plants, groups of Chrysanthemums interspersed with foliage plants, and groups of Chrysanthemums only, and in these the competition was very keen, and the same may be said of the classes of Chrysanthemums, some very fine plants being exhibited, but the York growers have not hitherto trained and staged their plants to the best advantage, and another year we hope to see an improvement in this respect.

Cut flowers were shown in great quantities and of very fair quality. The principal prizetakers in the plant and cut flower department were J. T. Hingston, Esq. (gardener, Mr. Macintosh), Mrs. Gutch (gardener, Mr. Everard), Dr. Baker (gardener, Mr. Dawe), Mr. T. Smith, Miss Steward (gardener, Mr. Vear), T. S. Brogden, Esq. (gardener, Mr. Lister), Messrs. A. Simpson & Son, W. B. Richardson, Esq. (gardener, Mr. Folkard), Earl of Harrington (gardener, Mr. Goodacre), Rev. B. Hemsworth (gardener, Mr. Sun'ey), C. H. Simpson, Esq. (gardener, Mr. Kitchell), A. Pease, Esq. (gardener, Mr. Short), and others.

Grapes were splendid. In the class for six bunches in three varieties there were eight competitors. The first prize, a silver cup or £5, was deservedly awarded to Mr. Goodacre, Elvaston Castle, for superb examples of Gros Colman, Mrs. Pearson, and Muscat of Alexandria; Mr. McIndoe, gardener to Sir J. W. Pease, Bart., M.P., was a good second with good bunches of Gros Guillaume, Trebbiano, and Lady Downe's Seedling; the third and fourth prizes were awarded to the Rev. W. Sneyd, Keele Hall, Staffs (gardener, Mr. Wallis), and the Earl of Feversham (gardener, Mr. Riddell) in the order named. B. Cochrane, Esq., Durham (gardener, Mr. Jenkins), was first for two bunches of black Grapes, staging Alicante in faultless condition; Mr. Riddell was second, and Mr. Clayton, gardener to J. Fielden, Esq., Grimston Park, was third. Mr. Clayton was first for two bunches of white Grapes, the Hon. R. C. Parsons (gardener, Mr. Townsend) second, and Mr. Riddell third.

Apples and Pears were well shown, and the vegetables were excellent, mostly from local growers. Mr. A. Deverill, Banbury, exhibited some of his prize Onions, Brussels Sprouts, &c., and these were greatly admired.

LIVERPOOL.—NOVEMBER 23RD AND 24TH.

A MAGNIFICENT show, in a magnificent building. This is, in brief, the character of the Liverpool Chrysanthemum Show. So far as we have seen, no such exhibition has been held this year. The cut blooms of Chrysanthemums were simply splendid, the plants of Pompons models, and the fruit of a superior character.

CUT BLOOMS.—In the class for twenty-four incurved and the same number of Japanese (thirty-six distinct varieties, no more than two varieties of a kind) for a silver cup given by Messrs. J. Williams & Co., Mr. F. Roberts, gardener to W. D. Holt, Esq., West Derby, was well to the front with excellent blooms. The collection took the lead, not only in the incurved but was slightly ahead in the Japanese. The back row comprised two blooms of Queen of England, two of Golden Empress, two of Empress of India, Alfred Salter, Emily Dale. Second row: John Salter, Mr. Bunn, Jeanne d'Arc, Lord Alcester, Lord Wolseley, Princess of Wales, and John Salter. Front row: Mrs. Heale, Mrs. W. Shipman, Hero of Stoke Newington, Princess of Wales, Jardin des Plantes, and Princess of Teck. The Japanese were particularly fine, including grand flowers of Belle Paule, Marguerite Marrouch, Japonaise, M. Astorg, Soleil Levant, Belmoreau, Triomphe de la Rue des Chalets, Meg Merrilies, M. C. Audiguier, Sarnia, R. Balantine, Fair Maid of Guernsey, Golden Dragon, H. Jacotot, Comte de Germiny, F. A. Davies, Mdle. Lacroix. Mr. J. Jellico, gardener to F. H. Gossage, Esq., Camp Hill, Woolton, was a very good second, and third Mr. T. Leadbetter, gardener to R. N. Dale, Esq., Bromborough Hall, Cheshire, who also showed well, being rather weaker in the incurved than the other two competitors. In the class for twenty-four incurved there were only two entries. Mr. Jellico took the lead with a capital collection of fresh, well-developed flowers. Mr. Playfair, gardener to H. Nicholson, Esq., Spital, second with smaller and flatter blooms.

For eight incurved Mr. John Wilson, gardener to J. E. Reynolds, Esq., West Derby, was well to the fore with very fresh highly coloured flowers, most of the blooms in the first and second row from the front being particularly fine. Mr. A. R. Cox, gardener to W. H. Watts, Esq., Elm Hall, Wavertree, second with fresh but smaller intermediate flowers. Third Mr. A. Eaton, gardener to H. J. Robinson, Esq., Woolton. In the class for six blooms of incurved and six Japanese, offered for those who had never won a prize, brought out no less than fourteen competitors, and the blooms throughout were of wonderful quality. Perhaps this proved the most interesting class at this or any other exhibition held this year, for the blooms staged were amongst the finest in the Exhibition. Mr. J. McArthur, gardener to R. R. Heap, Esq., West Derby, was placed first with grand blooms. Mr. T. D. Heavy, gardener to H. G. Schintz, Esq., Mossley Hall, second, and Mr. J. Harrison, gardener to W. G. Bateson, Esq., New Hays, Allerton, third.

In the class for eighteen Japanese, first Mr. A. Eaton, gardener to H. J. Robinson, Esq., Woolton, with Meg Merrilies, Marguerite Marrouch, Belle Paule, Sultan, Apollo, Fair Maid of Guernsey, Triomphe de Chalets, Soleil Levant, J. Delaux, Criterion, M. Astorg, Baronne de Prailly, Mdle. Lacroix, Madame C. Audiguier, Comte de Germiny, Madame Laing, Belmoreau, and Boule d'Or. Second, Mr. W. Wilson, gardener to H. Cunningham, Esq., Gateacre; third, Mr. R. Cox, gardener to W. H. Watts, Esq., Wavertree; all with splendid stands. Twelve Japanese, first Mr. J. Wilson, with magnificent examples; second, Mr. F. Roberts, also splendid. In another class for twelve Japanese Mr. A. Eaton was first; Mr. W. Wilson second; third, Mr. G. Bowden, gardener to G. Cockburn, Esq., Oxtou, with truly magni-

ificent examples. In these classes the competition was so close that only one point decided the relative merits of the collections.

We regret very much that time and pressure upon our pages this week prevent us giving a more detailed report of such a beautiful show. We hope, however, to be able to refer to the fruit and other portions of the Exhibition more fully in our next issue.

EASTBOURNE.—NOVEMBER 22ND AND 23RD.

CHIEFLY through the energetic action of Mr. Jupp, Hon. Sec. to the Eastbourne Gardeners' Society, a very good display, considering the late date and the time they had to prepare for it, was made in the Town Hall recently opened. Most of the classes were well filled, and in some the competition was keen; both the cut blooms and the plants were surprisingly fresh for the late date. In the open class for a group of Chrysanthemums arranged for effect Mr. Helmsley, gardener to J. Dore, Esq., Arundel Terrace, was first with a very bright and effective arrangement. Mr. Morley, gardener to Miss Brodie, The Gore, second; and Mr. Wise, gardener to Major-General Holroyd, The Meads, third. For the group of Chrysanthemums and any other plants Mr. Fuller, gardener to — Whatmore, Esq., was first, and Mr. Morley second, both showing very good groups. Mr. Helmsley was again first for group in the class limited to members of the Society; Mr. Phillips, gardener to Dr. Jeffrey, being second, and Mr. Eden, gardener to C. D. Gilbert, Esq., Manor House, third. Mr. Helmsley and Mr. Fuller were also prizetakers for foliage plants and Ferns. Cut blooms were well shown. In the open class for twenty-four incurved Mr. Gore, gardener to Capt. Taylor, Glenleigh, was first with good fresh blooms, the best being Lord Alcester, Empress of India, Cherub, Mabel Ward, Golden Queen, and Queen of England. Mr. Russell, gardener to Dr. Lewis, Henfield, being second, and Mr. Simmons, gardener to the Rev. H. Hales, Henfield, third. For twelve incurved Mr. Winchester, gardener to W. A. Taylor Esq., Hailsham, was first, Mrs. Heale, and Lord Alcester, being very good. Mr. Russell and Mr. Simmons following very closely. For twenty-four Japanese Mr. Gore was first, Thunberg, Sarnia, and Madame Audiguier being good. Mr. Russell was second, and Mr. Jupp, gardener to G. Boulton, Esq., Torfield, third. Mr. Winchester was first for twelve Japanese, followed by Mr. Russell and Mr. Jupp. Anemones and reflexed were very good, Mr. Gore being first in both classes, also in the two classes of Pompons. Messrs. Jupp and Russell taking the seconds and thirds in the reflexed and Anemones. In the Society classes Mr. Emery, gardener to R. W. Tweedie, Esq., Avoca, was very successful, taking first for twelve incurved, twelve Japanese, and twelve of any sort, followed in each class by Rev. H. Shortlands, Upperton. Fruit was very good, Mr. Clarke, Polegate, being first for Grapes. Mr. Gilmour, Hawkhurst, and Miss Brodie taking the chief prizes for Apples and Pears.



HARDY FRUIT GARDEN.

VERY favourable has the weather been for the planting, and where the work was well done either late in October or early in the present month the trees are now settled in the soil, and root-action has begun. Let us take care that tender young rootlets, which the warm moist soil has induced the roots to put forth during the last two or three weeks, do not suffer from exposure to the severities of hard frost when it sets in. To guard against this we apply a surface dressing to the soil about the trees as we plant them, and we never put off doing so. Each tree as it is planted has any portion of damaged root cut off, each branch is shortened to the bud which we wish to afford us a vigorous shoot next spring, the soil is packed carefully about the roots, and pressed gently but firmly upon them. A surface dressing of half-decayed stable manure is given, the tree made so fast to wall, fence, or stake that it cannot be swayed by wind, a label bearing its name put either upon or close to it—then, and not till then, should we proceed to the planting of another tree. Every detail must have full attention at once, the name of the tree should also be entered in the garden fruit book, and its position shown upon the garden plan. Take care also that no injury is done to the bark of the trees, and if string or wire is used to fasten the tree see that some soft substance is put between it and the bark. It is precisely by close attention to careful and early planting that we are able to ensure free robust growth next spring and summer. Our object in shortening the branches of trees as we plant them is to ensure growth next season, which will form the basis of a healthy well shaped tree. Each tree must be examined closely, and the pruning be specially adapted to its condition as it comes to our hands from the nursery. The fine flourishing young pyramids which we perhaps selected ourselves at the nursery last August may, when they are sent to us, have a stem 5 or 6 feet in height bristling with lateral growth from the top downwards to within about a couple of feet of the bottom. If so much of the bottom of the stem is bare we never hesitate to sacrifice the upper part, but cut it clean off right down to the bare part of the stem. It requires some courage to do this, but then we know from experience that from those bare stumps will spring a plentiful crop of stout shoots, one of them to form a new leading shoot, and the others to afford us a choice of basal branches, which will thus have so good a start that they will not eventually be robbed of vigour by the upper ones.

FRUIT FORCING.

PEACHES AND NECTARINES.—*Earliest-forced Trees*—The trees in the earliest house having been started, they must have sufficient water at

the roots, and if, after examination, it is doubtful whether the soil be moist enough, give a thorough supply slightly in advance of the temperature of the house, and if the trees are weakly employ tepid liquid manure. A bed of fermenting materials formed on the borders will give off an invigorating heat, whilst the moisture will be more regular and conducive to the buds swelling than frequently syringing the trees. Fire heat should only be employed at night to exclude frost, and by day to insure a temperature of 50°, above which ventilate freely. Avoid as much as possible a close vitiated atmosphere after the buds begin swelling, syringe the trees and house in the morning and early afternoon of bright days until the buds or blossoms begin showing colour; then discontinue the syringing, but maintain a suitable moisture in the air by damping the paths, &c., on bright days in the morning and early afternoon, and ventilate constantly. The object should be to bring the trees on gradually, to secure large, well expanded blossoms, and to have the stamens strong, with anthers well laden with pollen, and the pistils stout and perfect.

Second Early-forced Trees.—The trees to be started early in the year for affording fruit in May must now be kept as cool as possible. The lights having been removed may be left off until the weather sets in very rainy or the snow falls, when, if there is danger of the soil becoming too wet and reduced in temperature by the cold, snow, or frost, replace them after they have been thoroughly cleaned, repaired, and, if necessary, painted. The trees may be dressed with an insecticide, the woodwork having been cleansed with soapy water and the glass with clear water, both inside and outside, and the walls washed with hot lime. The trees will have to be pruned—a very trifling affair if the proper attention has been given to disbudbing, reserving only the wood needful for extension and next year's crops, and cutting out that on which fruit has been borne this year. This will leave very little work for the knife at this season, and the less the better, only it must be used to cut out wood not required, to rectify anything that has been overlooked during the summer. The trees having been infested with scale, nothing clears them so well as syringing with water at a temperature between 140° and 160°, but it must not be used by a careless person; indeed, extreme measures must never be taken except under the eye of the chief. Frost has a very decided effect on scale, but its removal is best effected by washing with a soapy solution, 8 ozs. soft soap to a gallon of water, and being careful not to disturb the buds. The solution properly applied is fatal to all insects or eggs. In bad cases it is well to go over the trees a second time before they are tied to the trellis. Plenty of space must be left in the ties for the swelling of the branches. Mulch the border and remove any loose inert surface soil, supplying fresh loam 2 or 3 inches deep at most, and to which has been added about a quart of bonemeal to every bushel, and a similar proportion of wood ashes, the loam chopped moderately small if turfy, and the whole well incorporated. Mulching with short manure may be deferred until the trees are somewhat in growth. Keep the house as cool as possible, ventilating to the fullest extent except when the weather is frosty.

Third House.—The trees in this will be started early in February to ripen the fruit late in June or early in July, and they should now be subjected to the same treatment as advised for the trees in the second early house. It is a bad practice to leave houses and trees unattended after the leaves fall until the necessity arises for closing the houses. The trees can never be handled so safely, either for the needful cleaning, pruning, &c., as when the buds are least active, which is as soon as the leaves have fallen, and the insects (if any) are best caught before they are obliged by cold to make their retreat to safe quarters. It is a common practice to use houses of this kind for plants, especially Chrysanthemums. It is a practice that would be much better discarded, as it is fatal to that rest so essential to the success of the Peach trees, and a primary cause of the buds subsequently falling.

Fourth House.—This can hardly be called a forcing house, yet there should be means of affording a genial heat when the trees are in blossom, and for accelerating the ripening as may be necessary; also for ripening the wood in cool districts. The house being closed early in March, the trees will ripen their fruit early in August and September if kept cool. It may be analogous to a Peach-case or covered wall planted with midseason varieties—the choicest Peaches and Nectarines. The trees in this house are leafless. They should undergo the process advised for the early house in every particular, only the hot-water pipes must be emptied and the house never closed, but be thrown open to the fullest extent in all but when frost prevails. It will not hurt the trees in the least to remove the lights and leave them off until the blossom begins showing colour.

Late House.—No attempt should be made to force the leaves off the trees. Cut out all the wood that has borne fruit if not otherwise required. The soil must not be allowed to become very dry, but if necessary give a thorough soaking of water. If the wood does not ripen well turn on the heat by day with moderate ventilation, and turn it off in the afternoon, so as to have the pipes cool before night, and then open all the ventilators. When trees do not ripen the wood up to the point of the shoots it is a good plan to make a trench at some distance from the stem and have the roots cut, which will check the tendency to growth and induce ripening. After remaining open ten days or a fortnight the trenches may be closed, the soil being well firmed and a good watering given. The house must otherwise be kept cool by free ventilation, and the leaves cleared away as they fall. If any of the trees grow too luxuriantly root-pruning and lifting must be attended to whilst the leaves are on the trees. The value of late Peaches is not so much recognised as they deserve. They are noble in appearance, and when well done good in quality.

Unheated Houses.—The leaves in these are off in all except where

the trees are unsatisfactory, and such should be lifted and the roots laid in fresh compost nearer the surface. With careful lifting the crop for next year will not be prejudiced—in fact, trees carefully lifted usually set well, stone satisfactorily, and furnish good crops of fruit. Care is, of course, necessary in lifting the trees, so as not to give a severe check by too great manipulation of the roots, and not to practise it before the wood becomes firm, otherwise the soft parts of the wood will shrivel. If the drainage is defective it should be rectified, and soil of an unsuitable nature removed. Instead of patching up bad borders it would often be much more satisfactory to make new ones. A 3-inch tile drain should be at the base, with proper fall and outlet to carry off superfluous water. There must be a foot of drainage above the drain—brickbats or rubble, and if covered with a layer of old mortar rubbish it will be an advantage. Twenty-four inches of soil is ample, but it should be 30 inches deep in the first instance to allow for settling, and be placed together rather firmly; the top 3 to 6 inches of a pasture where the soil is of a medium loam, inclined to be heavy rather than light, and where the subsoil is limestone is the most suitable. Add to this a sixth part of manure which has been dried and chopped small, and a similar proportion of old mortar rubbish, incorporating well together. This soil usually induces a stout short-jointed growth. The border need not be wider than a foot beyond the extension of the roots in the first instance, adding to it as the roots extend; but a narrow border is in many respects superior to a wide one. The only difference is that the narrow border requires more frequent supplies of water and liquid manure with surface mulching, and then the results are better than in the wide, as the trees are more under control. The sooner lifting and the replanting of Peach trees under glass is effected the more likely are they to return good fruit another season. The house should be kept as cool as possible; in fact, the lights are best off the trees until the buds show colour. In a Peach case fruit can be had over a very extended period by a proper selection of varieties, Alexander and Waterloo ripen early in July, followed by Hale's Early, Early Alfred, Dr. Hogg, Crimson Galande, Royal George or Stirling Castle, Grosse Mignonne, Alexandra Noblesse, Goshawk, Bellegarde, Barrington, Late Admirable, Princess of Wales, and Sea Eagle, a dozen varieties of first-class quality, continuing the succession into October. Suitable Nectarines are Advance, Lord Napier, Rivers' White, Elruge, Improved Downton, Pine Apple, and Victoria.

THE BEE-KEEPER.

FEEDING BEES AND COVERING HIVES.

ALTHOUGH November commenced with her "surlly blasts," they did not continue long, and up till the 20th we experienced exceedingly mild weather, spring-like, with bright sunshine and a temperature sometimes during the day of 55°, the lowest temperature during the night being 50°, consequently bees were often on the wing and carried pollen freely up till the 16th. The temperature being lower than it was during October, the bees were quieter, and probably consumed less, the extra mildness of the month enabling them to fly must be conducive to their well-being during the next two months, when winter will be likely to come in earnest—at least we hope so. Although I advise bees not to be interfered with nor fed after September, still I am not apprehensive of much danger from feeding during winter if necessity for that should arise. Some time since "Felix" stated that he had maintained and kept bees alive and healthy by feeding them the whole winter. This is what I have often done, and what I am doing with several hives I did not intend keeping, and I am hopeful of success. The hives are constructed and covered so that damp will not remain inside them—the whole secret of successful bee-keeping, provided that all the young are hatched and have flown before winter sets in, and that breeding does not commence sooner than the end of December or the beginning of January.

Scarcely a week passes but someone writes me in praise of the ventilating floor, which doubtless guards from many evils, but covering hives is also important. During mild winters it is of less importance to have them covered thoroughly, but it is better to be fully prepared for the worst. Covering hives with a proper porous material at all times acts beneficially, and never otherwise unless when the covering and the surroundings affect the interior of the hive so as to induce the bees out into a temperature they cannot bear. Thus if a hive is placed near a flue or other artificial heat, or if the coverings are of a nature that produces heat, the same effects will follow, and the bees are sure to suffer. When

hives are covered on the sides with about 2 inches of straw and from 3 to 5 inches of meadow hay on the top, and kept dry, having a current of air all round, the hive so arranged is perfection, and cannot be made better to withstand the severest winter and keep the bees healthy during the whole year. This preparation applies to hives whether in the open or under cases or in bee-houses. It is a mistake to suppose that hives located in cases or bee-houses require no external covering. When hives are not cared for with proper coverings on the outside, the vitiated air, instead of being carried off from the hive, becomes condensed on the inside, the combs and the bees, and as damp destroys bees quickly during winter the moment they come in contact with it, every means should be employed by the bee-keeper to guard against it.

The house I live in was a thatched one until lately, and bees have been kept in this place by the proprietors for a century past, and from that time up till some thirty years ago the hives were lifted from their outside stands and placed in the loft underneath the thatch and close to it at the bottom of the roof. The air played round the hives freely in a tempered form had a beneficial effect on the bees, apparently because they remained quiet during the two months of their confinement, and when taken out the first fine day after the storm were always healthy and flew briskly. Under the thatch was but a similar treatment to that I advise in the foregoing lines, and bee-keepers should, if looking to their interests, follow the example. Your readers have already been favoured with the "Dumfriesshire Bee-keeper's" account of employing dried peat underneath the ventilating floor. It is an idea in the right direction in bee-husbandry, and I am confident that covering hives with "benty turves," as are often employed by some bee-keepers in certain districts (and to great advantage, too, so far as the bees are concerned), is also a plan that might be adopted with advantage by bee-keepers in general. Certainly it is a losing concern to keep hives in an uncovered state during the temperate part of the year, and it is a great deal more so if entirely neglected during winter.—A LANARKSHIRE BEE-KEEPER.

TO CORRESPONDENTS

* * All correspondence should be directed either to "THE EDITOR" or to "THE PUBLISHER." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Books (Columbia).—The two treatises published at this office—Wright's "Mushrooms for the Million" and Iggulden's "Tomatoes" will suit you as regards those subjects, and you will find full information on the others in Thomson's "Fruit Culture Under Glass" (Blackwood & Sons), and Barron's "Vines and Vine Culture," published at this office.

Chrysanthemums (J. C., Selkirk).—The information you require shall be given next week. Many thanks for your good wishes.

Bellicide (R. D.).—We shall be glad to test the qualities of the substance named if samples are sent to us.

Selling Grapes (Black Hambro).—Grapes ought to fetch more towards Christmas than they do in autumn, both on account of the greater consumption at that season and of the additional expense required to keep them in good condition. At the same time we would not advise you to send yours to any of the London markets. Half-pound bunches stand little chance against the large handsome bunches that are to be met with there.

Early Peach for Cool House (W. Dwy).—The largest and best early Peach for a cold house is Alexander, but some prefer Waterloo on account of its slightly higher colour. They are the largest of the early Peaches, and ripen in a cool house early in July, or about the same time as Early Beatrice, which is much smaller, though an excellent Peach. Alexander is fully three weeks in advance of Hale's Early, and the next best Peach to succeed

is Dr. Hogg. Our choice is Alexander, as we have proved it longest, finding it juicy and brisk in flavour. Waterloo is a clingstone, but a fine Peach, large, and very bright in colour.

Propagating Leucophyton Browni (C. Turner).—Cuttings strike freely at almost any time, but preferably in August, the cuttings, after trimming off the lower leaves, being laid aside for a few hours to allow the wounds to dry. They should be inserted in sandy soil, the pots surfaced with sand, and care taken not to give too much water, keeping the soil moist, and placing them in a cold frame. Spring is also a good time to insert the cuttings, and at that time of year they are the better for a gentle heat, in which they root more quickly and sooner make plants of a size suitable for placing out. The chief thing is to guard against damp. The cuttings should be firm, as when soft they are more liable to suffer from damp.

Begonia Corms Eaten by Grubs (P. L.).—The grubs are likely to prove troublesome to the Tulips. The only thing we can suggest is to make holes with a blunt dibber to about the same depth as the Tulips, and in these insert some baits of Carrots with a pointed stick thrust into them, and long enough to reach outside the ground after the holes are closed, as they should with loose soil. The Carrots will most likely attract the grubs, and withdrawing the baits each morning the pests will be easily destroyed. The baits are to be replaced when necessary. Persistence in this course is a certain remedy, there being few grubs that can resist a bait of sweet succulent Carrot. Potato baits are good, but not equal to the Carrot.

Lily of the Valley not Flowering (J. F. W., Deal).—Your previous question did not reach us. The plants have become too crowded and so enfeebled as not to form well-developed flower buds. The only remedy is to thin the plants well, filling the holes with rich soil, and giving a surface-dressing of thoroughly decayed manure about an inch deep. This should be done now, and the plants removed may be formed into fresh beds, the soil having been well manured and as deeply dug or trenched as the good soil allows. They may be planted in rows 3 inches apart and the crowns 1 inch asunder in the rows, and so deeply that the top of the crown is level with the surface of the soil. The roots should be spread out carefully, and the soil made rather firm about them. Mulch the beds with well-decayed manure or leaf soil. During growth copious supplies of water should be given, or liquid manure in dry weather, as the stronger the plants the finer will be the flowers.

Gardeners' Examinations (F. G.).—The Royal Horticultural Society and the Society of Arts at one time held examinations in horticulture, but these have been discontinued. The Science and Art Department at South Kensington have examinations in botany, and you can obtain all particulars on application to the Secretary addressed as above.

Potatoes Eaten by Slugs (Old Subscriber).—The tubers you sent are in bad condition, and nothing would do your land so much good as a dressing of quicklime. We should give it now at the rate of 6 tons per acre, and before digging the ground. The best agent, however, to use against slugs is nitrate of soda, but it should not be used until spring, or in late March or early April before putting in the crops, and at the rate of 1 lb. per rod (30½ square yards). The quantity of lime per square rod is a little more than a bushel, but that quantity is a fair dressing. As the quality of the Potatoes is bad we should not give any manure. The nitrate of soda is beneficial to most vegetable crops. We should certainly not think the slugs would be more likely to appear again if the old sets—i.e., sets of the slug-eaten crops, are used, but often much good results from a change of seed.

Training Vines Down Back Wall (F. J.).—If you train the canes down the back wall and allow them to fruit it is certain you would gain some bunches of Grapes next year, but would also have very much weaker leads than if the canes were cut back to the curve, and a strong shoot taken from each in the ensuing season. The growth should not be taken down the wall but along the back and well up to the light, so as to insure a thoroughly solidified growth, and sufficiently long to reach down the wall and admit of being layered in the border to the extent of a foot or 18 inches, being secured with pegs a couple or not more than 3 inches beneath the surface. The eyes should be removed from the part layered, and the layering must not be done until the wood is ripe. By this plan you will have the Vines with two sets of roots, and they can be fruited their whole length the following year, the objectionable Vines being cut out.

Pruning Hydrangea paniculata (X. Y.).—It is best to thin out the weak wood, and then cut back the strong shoots to firm ripe wood, so as to form a symmetrical or compact plant. We have cut back to a couple of joints of the base, but base buds do not always give such large heads of bloom as the terminal ones. Irregularities are best pinched during growth, and the weak growth should be removed early, resorting to disbudding. If the wood is strong and well ripened you are sure to have plenty of flowers.

Distance of Trellis from Hot-water Pipes in Cucumber House (Idem).—The pipes ought to be at least a foot from the trellis or plants, and are better more, as the pipes dry the atmosphere in their immediate locality and increase the evaporation from the foliage, causing attacks of red spider. If you mean the hot-water pipes are for bottom heat, then they surely are more than 4 inches from the trellis. You will need the pipes surrounded with and covered by 6 inches of rubble, over this a layer of turves grass side downwards, and then 10 inches or a foot of soil, and the plants ought to have some stem. The trellises are, we think, intended for horder or bed support, and if 4 inches below those they are not far wrong. Manure is a good material, but is better mixed with leaves. Three parts Oak or Beech leaves with one part stable litter make a suitable bed and give a mild and durable bottom heat. They foster no fungi that is injurious to Cucumbers. Tan is unquestionably the best of all materials for bottom heat, but it is far more subject to fungi than manure.

Fairy Rings on Lawn (An Old Subscriber).—The cause of fairy rings is the spread of fungus spawn or mycelium, which results in the production of Toadstools. They are for the most part nitrogenous, and their decay gives the deep green colour to the grass. It is a clear indication of poverty, as the fairy rings never appear on healthy vigorous plots of grass. We only know of one remedy, and that is manure of a nitrogenous character. Potash is also useful. We should make holes with a crowbar where the

rings are, and into these drop some wood ashes, the holes being about 3 inches deep and about 6 inches apart. They may have a pinch between the finger and thumb put in each, and afterwards be filled with fine soil. If this be objected to rake the ground well and apply wood ashes at the rate of a peck per rod (30½ square yards). This may be lightly raked in. If the ground is poor—i.e., the grass thin and growing weakly—give a dressing of well decayed manure now, and in February or March give a surface dressing of soil mixed with a fourth of quicklime in autumn, and turned over twice. Two bushels of compost per square rod is not too much. Rake well in and sow with fine grass seeds during moist weather in April, and roll well. This will insure a good growth of grass, and the fairy rings will disappear. If the grass grows freely omit the manure. Avoid artificial manures containing superphosphate of lime and sulphates of soda and magnesia. Soot and wood ashes mixed together in equal proportions is good for lawns. A surface-dressing in moist weather in spring before the grass grows effects wonders, and is good against moss. A peck per rod is a proper dressing.

Names of Fruits.—The names and addresses of senders of fruit to be named must in all cases be enclosed with the specimens, whether letters referring to the fruit are sent by post or not. The names are not necessarily required for publication, initials sufficing for that. Only six specimens can be named at once, and surplus fruits beyond that number cannot be preserved. (Brentford).—Somersetshire Pomeroy. (W. H. Divers).—1, Thompson's. 2, Zephirin Grégoire. 3, Besi Goubault. Apples 1, Golden Noble. 2, Not known.

Names of Plants.—We only undertake to name species of plants, not varieties that have originated from seed and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in firm boxes. Slightly damp moss or soft green leaves form the best packing, dry cotton wool the worst. Not more than six specimens can be named at once. (C. B.).—We do not undertake to name varieties of florists' flowers.

COVENT GARDEN MARKET.—NOVEMBER 24TH.

PRICES remain the same. Grapes firmer. Trade quiet.

FRUIT.

					s.	d.	s.	d.						s.	d.	s.	d.			
Apples	..	..	..	1 sieve	1	6	to	4	0	Melon	..	..	..	..	each	0	0	to	0	0
"	Nova	Scotia	and							Oranges	..	..	..	..	100	6	0	12	0	
	Canada,	per	barrel		12	0	21	0		Peaches	..	..	..	per doz.	0	0	0	0	0	
Cherries	..	..	..	1 sieve	0	0	0	0		Pears	..	..	..	dozen	1	0	2	0	0	
Cobs	..	..	..	100 lb.	60	0	70	0		Pine Apples	English	..	..	lb.	1	6	2	0	0	
Figs	..	..	..	dozen	0	6	0	9		Plums	..	..	..	1 sieve	1	0	2	0	0	
Grapes	..	..	..	lb.	0	6	3	2		St. Michael	Pines	..	..	each	4	0	6	0	0	
Lemons	..	..	..	case	10	0	15	0		Strawberries	..	..	..	per lb.	0	0	0	0	0	

VEGETABLES.

		s.	d.		s.	d.			s.	d.		s.	d.		
Artichokes	.. ..	dozen	1	0	to	0	0	Lettuce	.. ..	dozen	1	0	to	1	6
Asparagus	.. ..	bundle	0	0		0	0	Musbrooms	.. ..	punnet	0	6		1	0
Beans, Kidney	.. ..	per lb	0	6		0	0	Mustard and Cress	.. ..	punnet	0	2		0	0
Beet, Red	.. ..	dozen	1	0		2	0	Oufons	.. ..	bunch	0	3		0	0
Broccoli	.. ..	bundle	0	0		0	0	Parsley	.. ..	dozen bunches	2	0		3	0
Brussels Sprouts	.. ..	1 sieve	1	6		2	0	Parsnips	.. ..	dozen	1	0		2	0
Cabbage	.. ..	dozen	1	6		0	0	Potatoes	.. ..	cwt.	4	0		5	0
Capsicums	.. ..	100	1	6		2	0	„ Kidney	.. ..	cwt.	4	0		5	0
Carrots	.. ..	bunch	0	4		0	0	Rhubarb	.. ..	bundle	0	2		0	6
Canliffowers	.. ..	dozen	3	0		4	0	Salsafy	.. ..	bundle	1	0		1	0
Celery	.. ..	bundle	1	6		2	0	Scorzoner	.. ..	bundle	1	6		0	0
Coleworts	dcz.	bunches	2	0		4	0	Seakale	.. ..	per basket	1	6		2	0
Cucumbers	.. ..	each	0	3		0	4	Shallots	.. ..	.. .. lb.	0	3		0	6
Endive	.. ..	dozen	1	0		2	0	Spinach	.. ..	bushel	8	0		4	4
Heros	.. ..	bunch	0	2		0	0	Tomatoes	.. ..	.. .. lb.	0	6		1	0
Leeks	.. ..	bunch	0	3		0	4	Turnips	.. ..	bunch	0	4		0	0

PLANTS IN POTS.

		s.	d.	s.	d.			s.	d.	s.	d.
Aralia Sieboldi ..	dozen	9	0	to	18	Ficus elastica ..	each	1	6	to	7
Arbor vitæ (golden)	dozen	6	0		9	Fuchsia ..	per dozen	0	0		0
„ (common) ..	dozen	6	0		12	Foliage Plants, var.	each	2	0		10
Asters	per dozen	0	0		0	Heliotrope ..	por dozen	0	9		0
Bedding Plants, var.	doz.	0	0		0	Hydrangea ..	per dozen	0	0		0
Begonias	dozen	4	0		9	Ivy Geraniums	per dozen	0	0		0
Chrysanthemum ..	dozen	6	0		12	Lilium anratum	per doz.	0	0		0
Cockscombs	per dozen	0	0		0	Lobelia	per dozen	0	0		0
Cyperus	dozen	4	0		12	Margnerite Daisy	dozen	6	0		9
Dracæna terminalis,	dozen	30	0		60	Mignonette ..	per dozen	3	0		6
„ viridis ..	dozen	13	0		24	Mnsk	per dozen	0	0		0
Erica, various ..	dozen	9	0		12	Myrtles	dozen	6	0		12
„ hyemalis	per dozen	12	0		24	Palms, in var. ..	each	2	6		21
„ gracilis	per dozen	9	0		12	Pelargoniums, scarlet,	doz.	6	0		9
Euonymus, in var.	dozen	6	0		18	Pelargoniums	per dozen	0	0		0
Evergreens, in var.	dozen	6	0		24	Primula sisensis	per doz.	4	0		6
Ferns, in variety ..	dozen	4	0		18	Solanums	per doz.	9	0		12

CUT FLOWERS.

		s.	d.		s.	d.			s.	d.		s.	d.
Abutilons ..	12 bunches	2	0	to	4	0	Lily of the Valley, 12	sprays	0	0	to	0	0
Arum Lilies ..	12 blooms	4	0		6	0	Marguerites ..	12 bunches	2	0		6	0
Asters	12 bunches	0	0		0	0	Mignonette ..	12 bunches	1	0		3	0
Azalea	12 sprays	1	0		1	6	Narciss, Paper-white, bunch	0	4	0		6	0
Bouvardias ..	per bunch	0	6		1	0	" White, English, bunch	1	3			1	6
Camellias ..	12 blooms	2	0		4	0	Pelargoniums, per 12 trusses	0	9			1	6
Carnations ..	12 blooms	1	0		3	0	" scarlet, 12 trusses	0	4	0		6	0
"	12 bunches	0	0		0	0	Roses ..	12 bunches	0	0		0	0
Chrysanthemums	12 bebes.	2	0		6	0	" (Indoor), per dozen	0	6			2	0
"	12 blooms	0	6		2	0	" Tea.. dozen	0	9			3	0
Cornflower ..	12 bunches	0	0		0	0	" Red dozen	1	0			2	0
Dahlias	12 bunches	0	0		0	0	Parma Violets (French)	4	0			5	9
Epiphyllum ..	doz. blooms	0	6		0	0	Primula (single) per bunch	0	6			0	0
Eucharis	per dozen	4	0		8	0	" (double) per bunch	0	9			1	0
Gardenias ..	12 blooms	4	0		6	0	Pyrethrum ..	12 bunches	0	0		0	0
Gladioli	12 bunches	0	0		0	0	Stephanotis ..	12 sprays	6	0		8	0
Hyacinths, Roman, 12	sprays	1	0		1	6	Stocks, various	12 bunches	0	0		0	0
Lapageria, white, 12	blooms	2	0		4	0	Tropeolum ..	12 bunches	1	6		2	0
Lapageria, red ..	12 blooms	1	0		2	0	Tuberose	12 blooms	1	0		1	6
" longiflorum, 12	blms.	6	0		8	0	Violets	12 bunches	1	0		1	6
Lilac (white), French, bunch		6	0		8	0	" Czar, French, per bunch	1	3			1	9



THE STOCK HERD.

At many home farms the difference between the dairy herd and stock herd is clearly defined by distinct breeds of cows being kept for each herd, the first being solely for dairy produce, the other for rearing beasts for the butcher. If home farmers in the enjoyment of such advantages only turn them to full account, the stock herd can be made to answer, or, in other words, pay its way, and afford something more than the stock yard manure for profit. If, however, the margin of profit is wide enough to cover the entire expense of making and applying the manure to the land, the process may be regarded as entirely satisfactory, and farmyard manure may certainly be used under such conditions advantageously. In order to bring about so desirable a result we must have a herd specially selected for the purpose. Early maturity before all things is required in such cattle; to ensure this they must not only be well bred, but well fed and cared for from the birth till sale. Each calf should run with its mother and have the whole of the milk. Shelter and cleanliness are also indispensable. Dry, comfortable sheds, with sound roofs, well enclosed, with small open yards on the south side, afford excellent shelter for cows and calves, and when the cows are withdrawn no better place can be found for the young stock, which are not turned out upon pasture at all during the first year, but are kept in altogether, and so saved from the annoyance of flies. For a beast to realise such a handsome sum as £28 in twenty months from the birth, it cannot have been let out to "cut its own green meat," but must have been kept warm, clean, quiet, and upon a full dietary of wholesome nourishing food throughout the short period of its existence. No interregnum of semi-starvation has been suffered to mar the progress of such an animal, its "calf-lyre" is never lost, but its lusty full-fleshed condition keeps pace with growth always.

No special method of treatment can be laid down for every farm, for on many, or rather on most farms, grazing is found to answer well, especially in the second year, the average animal being finished for the butcher at from twenty-two to twenty-four months. Grazing upon rich pasture with a moderate allowance of cake and crushed corn in the second summer generally answers, if the beasts are withdrawn to the yards early in autumn. The quantity of cake is then increased; untrimmed Turnips in moderate quantity at first, with a plentiful supply of Oat or Barley straw answers best, and as they get settled in yard or stall they have more roots with a mixture of crushed cake, Beans, with Oats or Barley, and as much straw as they can consume.

There is a feeling of certainty as to results in the treatment of home-bred beasts, which is altogether wanting with the rough Irish cattle which continue to pour into our markets and fairs in such large numbers. Occasionally a few animals of promise may be met with among them, but most of them are of the ordinary type, in poor condition, stunted in growth, and the reverse of profitable to purchase, even at the low price at which they may now be had. That such cattle should continue to fill the greater portion of our stock markets is a standing reproach to the British farmer. These are the animals that cost so much to fatten, that one of our tenants declared his beasts cost him from 1s. 6d. to 2s. per lb. to fatten last winter, and another tenant assures us that he lost full £200 upon his beasts last year. We can accord them no sympathy, for we have repeatedly shown how under such conditions the manufacture of farmyard manure is a most costly and extravagant process. We cannot but wonder at the reckless infatuation with which farmers con-

tinue wasting their means upon that which involves so certain a loss. Precious are the lessons of adversity, if only we receive them aright. To the teachable intelligent mind the lesson here is not hard to learn, and we doubt not that eventually it will be grasped by farmers generally.

Again, we may usefully explain that a ton of farmyard manure contains 9 to 15 lbs. of nitrogen, the same quantity of potash, and 4 to 9 lbs. of phosphoric acid. The difference in quantity arises from the difference in the age of the animals and of the quality of the food given them. We know, therefore, with sufficient certainty the actual quantity of each manurial constituent so applied to the soil. We know also the important fact that we can obtain the whole of such fertilisers separately in a portable form, easy to mix, easy of application, certain in effect, at a cost infinitely less than that of farmyard manure. Knowing all this, and yet not turning such knowledge to account, how can we reasonably expect help in our need when we do not help ourselves? Frequently do we hear of meetings to pass resolutions for protection, free trade in money, and other forms of State aid, but how seldom do we hear anything about the possibility of relief from within by means of improved practice in farming.

WORK ON THE HOME FARM.

Much good work is now being done in draining land upon several farms. Without close supervision we can hardly hope to have such work really well done, and to avoid risk of faulty work the trenches are opened and the whole of the pipes laid before any of them are covered. If, upon careful inspection, the work proves faultless, then, and not till then, should the trenches be filled. To allow men who are draining land by the rod to cover pipes without inspection, involves much risk of faulty work—so faulty that the drains may prove useless. We came recently upon a glaring example of downright dishonesty which strongly confirmed our views of this matter. Upon a farm which came recently upon our hands, two small fields had been thrown into one by the common process of grubbing and filling an intersecting hedge and ditch. Pipes had been supplied by the landlord to make a drain along the bottom of the ditch, but the drain seemed to have a stoppage, as very little water ran from it. Upon opening a trench about midway in the drain the pipes were found to have been thrown into the trench and covered without any attempt at connection, some lying across the trench and some standing on end. We had previously met with instances of pipes having been badly laid, but nothing like this piece of rascality in drain work had we ever seen before. We are having special pains taken with some heavy land which we intend laying down in permanent pasture next spring, the drains in some parts being only 15 feet apart. Such close drainage is only applied where the soil is very adhesive in texture, other drains being from 20 to 30 feet apart, according to the condition of the soil. If possible before laying clay land down we like to turn enough of it to afford a sufficient dressing to plough in and insure porosity, and thus render the pasture sound and dry. While cutting down expenses as much as we can, we are still liberal in our expenditure upon drains, for we are quite sure the investment will afford a handsome per-centage of interest next year. Once get the land well drained, and then apply manure freely at the proper season. Such practice is sound and is to be regarded as the basis of all good farming. Without drainage, either natural or artificial, manure cannot have its due effect upon the soil, the crops will languish, growth will be stunted, the final results will be unsatisfactory, no matter how genial the weather may prove.

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude, 111 feet.

DATE.	9 A.M.				IN THE DAY.					
	Barometer at sea level	Hygrometer.		Direction of Wind.	Temp. of Soil at 1 foot.	Shade Temperature.		Radiation Temperature.		Rain.
		Dry.	Wet.			Max.	Min.	In sun.	On grass.	
1886.	Inches.	deg.	deg.		deg.	deg.	deg.	deg.	deg.	In.
November.										
Sunday 14	29.547	45.5	44.0	W.	45.6	53.0	42.7	82.1	36.8	—
Monday 15	29.582	48.7	47.6	S.	41.0	54.8	45.2	61.4	36.1	0.130
Tuesday 16	29.75	46.4	44.2	N.W.	47.2	50.7	46.3	81.6	43.9	0.310
Wednesday .. 17	29.390	47.0	45.7	S.	43.9	54.7	39.4	77.8	29.4	0.042
Thursday ... 18	29.342	41.4	39.5	W.	43.3	48.0	37.5	61.6	24.8	—
Friday 19	30.245	35.6	35.6	N.	43.8	52.7	31.3	61.6	24.8	—
Saturday 20	30.353	50.1	49.6	S.E.	44.6	53.2	35.1	58.4	31.2	—
	29.805	45.0	43.9		45.5	52.6	39.4	71.3	33.0	0.482

REMARKS.

14th.—Fair throughout, but not bright.
 15th.—Generally cloudy, but with glimpses of sun, shower at 5 P.M.
 16th.—Rain early, fine bright day, clear cold night.
 17th.—Wet and foggy from 6 to 10 A.M., then fine and generally bright, showers in afternoon, night fine.
 18th.—Bright fine day, clear cold night.
 19th.—Foggy till 11 A.M., otherwise fine bright morning, fair afternoon.
 20th.—Cloudy with slight fog early, clear at night.
 Rather warmer and finer than the previous week—on the whole, fair average weather or the season.—G. J. SYMONS.



COMING EVENTS

2	TH	Potato Exhibition at Westminster Aquarium (three days).
3	F	
4	S	
5	SUN	2ND SUNDAY IN ADVENT.
6	M	
7	TU	Royal Hort. Society, Fruit and Floral Committees at 11 A.M.
8	W	National Chrysanthemum Society, Floral Meeting at 3 P.M.

WATERING PLANTS IN WINTER.

PROBABLY the art of watering plants will never be learned by a vast number of persons who are engaged or interested in their culture. The subject has been written about time after time, and rules of guidance laid down as explicitly as the somewhat complex matter permits; but the instructions given appear to be misapprehended by some and soon forgotten by others, so that the necessity for further teaching is always with us; and the more surely is this so from the fact that young gardeners and new amateurs are ever joining the ranks of the great community of cultivators. We welcome all of them, because the more active personal interest that is taken in the work which it is our duty and pleasure to foster the better will it be for the horticultural industry, and for those who take delight in the healthy and agreeable pursuit of gardening, and who educate themselves to practise successfully in whatever branch they may engage as a source of pleasure or as a means of livelihood. Nothing is so encouraging to amateurs as steady progressive improvement, and nothing so conducive to the future well-being of gardeners as the acquirement of sound knowledge on the various details that have to be mastered before competence can be assured. One of these is the apparently simple, yet highly important and not easily learned, duty of watering plants both in summer and winter.

It has never been the policy of the conductors of this Journal to neglect what may be termed the simplicities of the calling in which its readers are engaged, nor to ignore the wants of the most inexperienced who desire assistance on any point on which they lack information. We exist to aid those who need assistance, and should regret if any searcher for knowledge should hesitate to appeal to us from a lurking fear that he is thereby betraying his incapacity. Everyone must be incapable at some time, and we have the greatest hope of those who do not hesitate to ask what they wish to know, however rudimentary the matter of their inquiries may be.

We have been led into these remarks from the manner in which requests for information have reached us this week, three of which are on the same subject, namely—watering plants in winter so as to avoid damping, a subject that cannot be considered apart from that of ventilation. One of our friends is in trouble about his Primulas, which he says will “go off leaf by leaf till there are only a few flower spikes gauntly rising from a potful of soil, and the less water he gives them the more quickly they appear to decay.” Another gave himself the trouble to call at our office, because, as he said, he “did not like to trouble us with a letter on such a plain matter as to how often he ought to water some continental Camellias he had obtained in 5-inch pots, the plants well set with buds which he was fearful would fall as heretofore.” This sensitive gentleman thought he could get the information from one of the clerks over the counter without the Editors becoming aware of his personalty. But

as clerks are not Camellia growers, the appeal had to be made to higher quarters. Such pride is pardonable, and not the slightest reproach is applied to our subscriber under the circumstances.

A third request is from a gentleman, the employer, to quote his words, of “a most careful gardener, but so afraid of damp that he waters his plants every day, only giving just a little.” The owner thinks there is some danger of the soil, while moist on the surface, being too dry below, and requests advice on the subject. This letter is marked “private” or it would have been published, with comments thereon, that might possibly have been of service to the writer of it, and suggestive to others. The diffidence of our friends is respected, and such help as can be given to them, and others similarly situated, is readily accorded.

Our first observation on the question of plants “damping” in frames and greenhouses in the winter will possibly take some persons by surprise, but its truth will be admitted by others of wider experience. It is this. Numbers of plants are ruined by the decay of their stems and the base of their leafstalks in winter through being kept too dry at the roots. The very fear of giving water, and the manner and time of giving it, create the evil that it is desired to avert. Applying just sufficient water to moisten the surface of the soil daily, and no more, is the worst practice that can be adopted, and the evil is aggravated if the water is given towards the close of the day.

To begin with, the whole of the plants in a collection never require water at the same time, and to give it to those that do not need it is to do them distinct and decided injury. This is an old story, but it is true, and it is better and more useful to tell it once again, and with emphasis, than to search for some novelty to express and record nonsense. Again, to give an uniform quantity of water to all plants, regardless of their differing conditions, can no more be defended than could the unheard of practice of making a weak and helpless child drink as much as a strong man engaged in exhaustive work. This method of giving support to plants and individuals is alike unreasonable, yet while it is often adopted in the case of the former, common sense rises in rebellion at the very suggestion of its application to the latter. Let the same common sense be exercised in giving support to plants, increasing or diminishing it according to the measure of their activity and exertions, and very different results will follow than from those accruing from an indulgence in the free and easy policy of treating all alike; for by this plan most or all must suffer sooner or later, some through being overgorged, others from starvation.

But to the question of damping from drought at the roots. It is in this wise. Give light daily sprinklings, and what is the result? The soil is wet where there are few or no roots to imbibe the moisture, while down below, where the most active roots are established, there is no moisture to imbibe. What follows? Simply this, the plants will not die without a struggle, hence attempt to absorb through the stems what is denied them at the roots, and perish in their effort to prolong life, damping off through the decay of the cuticle. This occurs the more quickly if water is given towards evening and the night temperature is very low, for dry roots and a cold moist atmosphere is a fatal combination. There are numbers of Primulas, Cinerarias, Pelargoniums, and other succulent-stemmed plants in jeopardy of destruction at this moment through the conditions indicated. The remedy is obviously to reverse those conditions.

Plants in a growing state, no matter what they are, should no more be allowed to suffer from drought at the roots in winter than in summer. In nature plants and trees are not as dry as dust in winter, yet they do not damp off in well-drained soil from which water passes freely; but they enjoy the counteracting influences of a free circulation of air that periodically conveys the moisture from the surface, leaving the earth moist below. Moisture there does no harm

provided it is not stagnant; nor will moisture in the soil in flower pots. Let the roots have what they need and not more than they need, while the surface is comparatively dry, and with a buoyant atmosphere and genial temperature there will be little or no danger of the decay of the stems or leaves near the surface of the soil.

"Yes," the puzzled novice may observe, "that sounds right enough, but how can we give water to plants without making the soil wet on the surface in our desire to keep the roots moist below?" It is not a question of momentary wetness of the surface, for that does no harm if water is given when plants need it, and only then, on the morning of a prospectively fine day, or when the air can be warmed artificially and the top ventilators slightly opened for the dispersion of moisture. Sharp currents of air should be avoided through the front sashes, these causing a chill to the plants by arresting the transit of sap. Anyone may have a conclusive example of this who may happen to have Vines in full leaf in frosty weather in March, the roots being in an outside border and the stems encased in haybands, for he has only to remove a portion of the covering and expose a few inches of the stem of one of them to the frost and the leaves will speedily flag, no matter what the temperature of the house may be. Permit, then, no sharp wind to drive through the ventilators directly against plants in greenhouses in the winter. The air in a plant structure can be speedily changed through the top ventilators alone, the cold outside air sinking by its weight into the house and displacing the lighter, because warmer, air inside. Admitting air without a draught or sensible inrush of cold is the secret of successful ventilation.

To return to watering plants in greenhouses in winter. They should be examined every morning, and water as warm as the house given to those that are more or less dry on the surface, and those alone, passing all others, even if they remain wet for a week. But in this matter thought must be exercised, always remembering that a great mass of soil containing few roots may get drier with impunity, and even with benefit to the plant, than can a lesser bulk of soil containing many roots; or in other words, a large plant well rooted in a small pot will take, and must have, more water than should be given to a small plant not well rooted in a large pot. If water is applied to plants when the soil is in a state to require it, crumbling more or less when rubbed, it is very soon drier on the surface than it is below, provided sufficient be given to pass to the drainage; and it must be given to that extent or the work will not be well done. It is well if not more than that is applied, especially in damp houses, for a stream passing through the soil indicates excess, rendering the air of the house moister than is desirable under the circumstances. Water should be used, not wasted. It should be given sufficiently, but not in excess, to plants that need it, and withheld entirely from those that do not require any. There must be no half waterings, no dabbings or dribblings, no spilling on stages or floors, and any that accidentally falls where it can do no good, but may do harm, should be promptly dried up. That is, so far as our experience goes, the way to water plants in greenhouses in the winter. They must not suffer through drought then any more than at any other periods, but at the same time there is great danger in forcing water on them when the soil already contains sufficient for their support during the twenty-four hours next ensuing.

A word on imported Camellias. Healthy-looking plants, set with buds, in small pots, have generally been grown in damp frames or moist pits, and the pots are usually filled with roots. If these plants are arranged on dry open stages in dry houses there is great danger in letting the soil get too dry before giving water. As a rule they are best stood on a close base, and damp rather than otherwise, for if dry air rises upwards, such as from hot-water pipes, and acts directly on the under sides of the leaves, the moisture is extracted from them too rapidly, the leaves curl and the

buds fall. It is better to syringe them occasionally on dry days than to permit extreme transpiration; and on no account must the soil get so dry at any time as to shrink, even slightly, from the sides of the pots, or there will be no flowers. It is safer to err in slightly overwatering instead of underwatering these root-bound Camellias, but an opposite course will be safer in the case of plants with a limited extent of active roots in large pots.

We trust these plain remarks on a plain yet not unimportant subject, will be of some service to inexperienced readers other than those who have sought the information we have endeavoured to impart.

HARDY SHRUBS AND PLANTS FOR FORCING.

THE species and varieties of these that are useful for forcing form some of the most charming plants for yielding flowers during the winter and early spring months. Many of them being sweetly scented are all the more acceptable on that account. Another point in their favour is that they do not occupy valuable space under glass for many weeks in the year, because after they have flowered they can be gradually hardened till the weather permits of their being planted in the open air, where they should be allowed to remain throughout the following winter, and be lifted during the next autumn. This gives them time to make good growth, and be in the healthy vigorous condition necessary to enable them to withstand the weakening influence of forcing, and by having a good stock of plants and lifting half each season this can be easily done. Where not already done, those that are intended for this season's forcing should be lifted at once, and after being potted those that are not wanted for placing under glass at once can be plunged over the rim of the pots in the open air, and be taken into heat as required to keep up a succession of flowers. We always like to see the deciduous plants subjected to a few sharp frosts before being taken under glass, as they do not appear to force well till the leaves have fallen.

Deutzia gracilis is perhaps the first in point of merit to claim our attention, the pure whiteness of its pretty bell-shaped flowers, and, as its name implies, their graceful appearance, renders them general favourites. To have them in flower in November and December it is necessary to keep a stock of plants in pots, because when planted out they do not ripen their wood early enough to flower satisfactorily till after Christmas, the flowers often coming small and refusing to open properly. After flowering those that are to be kept in pots should be allowed to complete their growth in some structure that is kept at a moderately warm temperature. An early vinery suits them admirably. When they have made growth about an inch long, some of the shoots should be taken off with a heel, inserted in pots, and placed under a handlight, where they will quickly root, and can then be shifted on as required, eventually planting them in the open air, as it is a good plan to always have young plants coming on which can be used in 5 and 6-inch pots. The plants from which the cuttings have been taken should, when they have completed their growth, be gradually hardened and plunged in ashes during the summer months, when they can have the full benefit of bright sunshine and be well attended to in the matter of watering. In this way the growth becomes thoroughly ripened, and by the middle of October will be in capital condition for forcing, and may be had in flower from five to six weeks after they are taken into heat. *D. scabra* and the variety *flore pleno* will also succeed under similar treatment, but are very much taller growers than *gracilis*.

Staphylea co'chica is also a useful shrub for flowering in pots, but it must not be subjected to hard forcing. It is not so much grown as *Deutzias* although it is superior to them in one respect, as it possesses a delicious perfume. The Gue'der Rose (*Viburnum Opulus*) are also much prized by some, and most effective they look with their white globular flower heads. Lilacs are very useful when scented flowers are in demand, but before lifting see that they have a fair number of flower buds, or disappointment will be the result. The old double *Prunus* is pretty on account of the pure whiteness of its flowers, but one great drawback is they are so short-lived, but for making wreaths and crowns, which are often not required to stand so more than a day, they are excellent.

American Azaleas, which include the numerous varieties of *A. mollis*, bear forcing remarkably well, and if grown in sufficient quantities make quite an exhibition in themselves, which for the great variety of those soft and pleasing shades of colour which are now so much sought after, cannot be surpassed by any

other class of plants during the winter months. A few plants should be taken into a house with a temperature ranging between 60° and 70° as soon as the leaves have fallen in the autumn, and at regular intervals be supplemented by others to keep up a succession. When they have flowered they should be kept under glass till they have completed their growth, after which they can be planted in the open air. It is generally necessary to prepare soil consisting principally of peat to plant them in, for although I have seen them flourish wonderfully well in a stiff clay, so capricious are they in regard to soil that it is never safe to plant them in ordinary garden soil till it has been clearly ascertained that they will thrive in it.

Rhododendrons in variety and *Kalmia rosea* and *cuneata* are two of the best hardy evergreen shrubs for forcing purposes, and succeed well under similar treatment to that given to the Azaleas, with the exception that they should not be forced quite so early. *Weigela rosea*, when grown into nice bushy plants, lifted and brought on gradually, are beautiful objects when in flower, and I have seen some lovely wreaths made with its delicate flowers and a green ground of Maidenhair Fern. Lastly, but by no means least, that good old border plant *Dielytra spectabilis* is one of the very best of all hardy plants for pots, but it will not bear hard forcing. Pot early and bring on gradually, and those who have not given it a trial before will be both surprised and delighted with its sterling qualities for arranging with other plants when in flower. I have not included the well-known *Spiraea japonica* in this selection, as I intend offering a few remarks concerning their treatment on some future occasion.—H. DUNKIN.

FORCING RHUBARB.

I AM surprised your correspondent, "A Working Gardener," has not found a better method of forcing Rhubarb than that described at page 471. Here is a plan that will not take up a tithe of the labour, and prove more reliable. If instead of conveying cartloads of fermenting material to the Rhubarb ground, take up the required number of roots and place them on a bed of fermenting material in the manure yard or framing ground, and cover them with tubs or pots. The bed may be composed of dung and leaves, or the latter only, with sufficient litter to support them to a height of about 2 feet in severe weather and for early work; at other times half that height will do. The width of the bed need not exceed the diameter of the tubs more than a foot, and after the roots are placed on it they may be covered with soil, decayed manure, or spent Mushroom dung, and to support this round the roots the sides of the bed must be continued until they are as high, if not higher, than the crowns, in order to allow as much head space as possible in the tubs or pots. Forcing is done by placing the fermenting material as a lining round up to the level of the crowns at first, to be afterwards increased if necessary. When I have adopted this plan there was no time spent in preparing the fermenting material by turning it sundry times, but it was wheeled direct from the stables, and placed, a barrowload thick, round the bed without any further arrangement; and, as we selected the manure yard for our operations, most of the labour was done by the stablemen, and we had only to watch the trial sticks inside the tubs, and if too warm draw the material from the sides. In cold weather the longest litter was also thrown over the tubs to confine the heat and protect the tender sticks.

On several occasions we have levelled a part of the manure heap and placed the roots on that, which reduced the labour of Rhubarb-forcing to that of taking up the roots and planting the same number of fresh ones. There is no preparation of fermenting material, no wheeling it to some distant part of the garden to the Rhubarb beds, and probably back again after forcing is over, and there will be no scalded crowns nor disappointment at the produce not being ready at the right time, as the heat can be regulated with the same precision as if in a structure heated by hot water. I have found the crowns very obstinate in starting at this time of the year, even in well-heated places, but they readily respond if supplied with slight bottom heat. Stools of Rhubarb lifted in the spring, and placed on the ground level and packed round with half-decayed manure or litter, will be a fortnight in advance of those left in the ground, simply because their roots are acted upon by the heat of the sun, or, in other words, they are in a warmer medium than those in the ground.—W. P. R.

CARNIVOROUS PLANTS.

(Mr. Latham's Lecture.—Continued from page 474.)

IN an interesting paper read by Dr. James Macbride before the Linnæan Society in 1815, remarked upon some observations made by him in 1810 and 1811 in America on some species of *Sarracenias*, from which the following is an extract—"In the month of May, June, or July, when the leaves of these plants perform their extraordinary functions in the greatest perfection, if some of them be removed to a house and fixed in an erect position, it will soon be perceived that flies are attracted to them. These insects approach the pitchers, and leaning over their

edges appear to sip with eagerness something from their internal surfaces, and in this position they linger; but allured seemingly by the pleasure of taste, they enter the tubes, and the fly which has thus changed its position will be seen to stand unsteady, totters for a few seconds, then slips and falls to the bottom of the tube, when it is either drowned or attempts in vain to ascend against the points of the hairs. In a house much infested with flies this entrapment goes on so rapidly that a tube is filled in a few hours. The inability of insects to crawl over the points of the hairs I have often tested in the most satisfactory manner, while spiders descend into these tubes to prey on the entrapped insects, and ascend with impunity, but this is performed by the assistance of their threads."

I have quoted these interesting experiments rather fully, firstly as showing that insectivorous plants had attracted the attention of scientific men as early as the latter part of the last century and commencement of the present. Secondly, because it explains the peculiar properties of the secretion in some of these plants, and the stupefying power it has upon insects, and the power must indeed be a strong one when such a powerful insect as the cockroach is often found a victim in the pitchers. In speaking of *Sarracenias* at Belfast, Dr. Hooker remarked—"The tissues of the internal surfaces of the pitchers are singularly beautiful. They have been described in one species only, *S. purpurea*, by Dr. A. Vogl, but from this all other species which I have examined differ materially. Beginning from the upper part of the pitcher there are four surfaces characterised by different tissues, which I shall name and define as follows—1, An attractive surface, occupying the inner surface of the lid, which is covered with an epidermis stomata, and, in common with the mouth of the pitcher, with minute honey-secreting glands. It is often more highly coloured than any other part of the pitcher in order to attract insects to the honey. 2, A conducting surface, which is opaque, formed of glassy cells, which are produced into deflexed short conical spinous processes, overlapping like the tiles on the roof of a house, and forms a surface down which the insect slips, affording no foothold to any insect attempting to crawl up again. 3, A glandular surface, as seen in *Sarracenia purpurea*, which occupies a considerable portion of the cavity of the pitcher below the conducting surface, and is formed of a layer of epidermis with sinuous cells, and studded with glands, and, being smooth and polished, these also afford a foothold for escaping insects. 4, A detentive surface, which occupies the lower portion of the pitcher in some cases for nearly its whole length. It possesses no cuticle, and is studded with deflexed rigid glass like needle-formed hairs, which further converge towards the axis of the diminishing cavity, so that an insect once amongst them, is effectually detained, and its struggles have no other result than to wedge it lower and more firmly in the pitcher."

As will be seen by my remarks, Dr. Hooker speaks of the insect getting wedged into the pitcher, Dr. Mellichamp of the house spider falling a victim to the fluid, Dr. Macbride of the spider descending into the tube to prey on the entrapped insect, and ascending with impunity by the assistance of their threads. These statements at first sight appear to be contradictory, but in reality they are not so, each investigator having experimented on different species of *Sarracenias*. In *S. purpurea* its trap is formed so as to fill with rain, and always contains liquid, and insects are thereby rendered helpless.

The white *Sarracenia Drummondii*, *S. flava*, and *Darlingtonia californica* have a most perfect hood-like protection against rain, and their tubes or pitchers contain no liquid, and are always dry, and insects are in these species entrapped by the process of wedging as described by Dr. Hooker, and it is almost impossible to imagine more complete insect traps than these. Dr. Hooker observes further that "The fact that insects normally decompose in the fluid of all would suggest the probability that they all feed on the products of decomposition, but as yet we are absolutely ignorant whether the glands within the pitchers are secretive or absorptive, or both; if secretive whether they secrete water or a solvent; and if absorptive whether they absorb animal matter or the products of decomposition." That insects are attractive in large numbers is very evident, and it is only necessary to examine some of the tubes of *Sarracenias*, the pitchers of *Nepenthes*, the traps of *Dionæa*, or the leaves of *Droseras* to find them in large quantities. I have often found in these traps a quantity of the remains of such insects as cockroaches, flies, ants, &c., when these insects have been somewhat plentiful, and all in a state of decomposition. The colouring matter previously referred to found in the pitchers of some of the plants I have named, as well as in the traps of the *Dionæa* and the leaves of *Droseras*, is very beautiful when the plants are in vigorous growth and good condition. The colour in most of

these is very similar, a rich purple, excepting the *Darlingtonia*, in which the colour is of a rich crimson when the plant is in active growth.

The *Drosera* is the most widely distributed of all the Fly-catchers. Species are found in every quarter of the globe, Australia and the Cape of Good Hope being their head-quarters. Some of the exotic species are very beautiful, but most difficult to obtain, and are therefore seldom seen in cultivation, and seeds do not germinate after they have been kept any length of time. We have some good representatives of the genus in our British Flora, and where is there a more lovely little plant than *Drosera rotundifolia* found in nearly all our boggy districts? I well remember the delight I experienced one sunny morning when first seeing this plant growing in its native habitat. Some of the Australian and Cape species are very beautiful plants, having those singular red-coloured glandulous hairs as in our own native species, and discharging from the ends globules of viscid acrid juice. These hairs are said by some to be irritable and contract when touched. There is no doubt about their catching insects, for hundreds of gnats may be found in any of the species during the growing season. These hair-like glands of *Drosera* contain spiral vessels, and are admirably adapted to the work these glands have to perform, and cause the irritability of these hairs. An insect when it gets entangled amongst these viscid glands struggles to obtain its liberty, and in doing so draws the glands in close contact to it, and is in fact caught very much like a fly in a spider's web, without the least chance of escape. The *Drosera rotundifolia* will catch a common house fly in its trap and close on it in the same way as the *Dionaea*, and after securing its prey will turn over its leaf or trap, the underside portion thus becoming the uppermost, evidently for the purpose of a thorough cleansing from insect matter by rain. The late Mr. Charles Darwin, in his book on insectivorous plants, published in 1875, after devoting 261 pages to his investigations of *Drosera rotundifolia* and twenty-two pages to his "Recapitulation of the Chief Observations of *Drosera rotundifolia*," in speaking of the capture of insects, writes:—"This is effected by drops of extremely viscid fluid surrounding the glands and by the inward movement of the tentacles. As the plants gain most of their nutriment by this means their roots are very poorly developed, and they often grow in places where hardly any other plants but Mosses can exist."

(To be continued.)

ON MUSCAT GRAPES SHRIVELLING.

In reference to Mr. Williamson's communication at page 470 of your Journal, I should much like to ascertain the true cause of shanking and shrivelling. The successful treatment in one locality does not answer in another. I have Muscat of Alexandria, Madresfield Court (the prince of Grapes), Lady Downe's, Gros Colman, and Foster's Seedling in one house, which faces south, for about seven seasons. The Muscat only shanks or shrivels, the others never. This year only a few bunches have been affected. I attribute my improvement to giving more water, air at the top and in front, heat always on. I allow the shoots to grow from four to six leaves beyond the bunch before stopping, like Mr. Hunter of Lambton Castle used to do. My wood is always well ripened. I cut the last of my Muscats February 1st, 1885. I never gather leaves to expose fruit to the sun. Madresfield Court are truly delicious, never crack, but do not colour as I could wish; why or wherefore I cannot make out.—LANE HILLS, Winchester.

THE NON-VENTILATING SYSTEM.

PERHAPS I am wrong in too often alluding to the nature of the soil we have to deal with, but I may reasonably retort on Mr. Bardney that he, like myself, is not famous for brevity, however practical he may be. I hold that in all cases and in all practices so much does or should depend upon circumstances, and the more I travel in other districts the more convinced am I that it is impossible to lay down any hard and fast lines, such, for instance, as Mr. Bardney is trying to do in the matter of non-ventilation for Cucumber and fruit culture. Speaking of the relative quality of the Cucumbers grown without air and those grown with, may I ask what is the difference in their respective growing periods, say from the time the flowers are open? and also if the gain in favour of the former has such a marked effect upon the quality? I made no "admissions" in favour of the "express system," and re-assert that those grown quickly with a little air are fully equal in quality to those grown without, and it is very certain the plants will much longer remain in full bearing when not subjected to such very high temperatures. Has Mr. Bardney tried the non-ventilating system for Cucumbers one whole season? and will other private growers who have succeeded or failed give their experience? Mere generalisations are not admitted as arguments (I have tried them, but they will not do when our "thinking" friends take the matter up), and we want all the facts of the case even down to the nature of the soil. What "A Constant Reader" (page 405) states is only very slightly corroborative of Mr. Bardney's theories, and what I ask for are *bona fide*

cases of private growers having kept Cucumbers in healthy growth and full bearing from April till late in September, no air being admitted at any time during that period. If these are forthcoming, with details, brief or otherwise, they will do more to convince me I am wrong than all Mr. Bardney's pages of argument.

Mr. Bardney laboriously demonstrates that non-ventilated houses are naturally most highly charged with moisture, a state of affairs conducive to vigour and fertility in Cucumbers, but altogether unsuited to the proper development of various flowering plants. The chink of air "arrests growth," "prevents a soft growth," and in various other ways benefits the flowering and other decorative plants. Here he is on firm ground, and he appears equally anxious to recover himself with regard to the chink of air for fruit trees. He defies all the "authorities" in very good style, but after all it is only during February, March, and April that he appears to think it advisable to dispense with ventilation. None of the "authorities" will take the trouble to argue upon the matter, for the very simple reason that none of them open their houses to any material extent much before Mr. Bardney does. I shall not yet admit that we have to thank him for a practical suggestion in the matter of saving fuel.

Mr. Bardney at the outset proves too much. If he had stopped short at Cucumber culture it would have been more difficult to controvert his arguments, but according to his own showing it is necessary to admit air to check softness of growth, and the merest tyro in Grape culture must know that soft or pithy badly ripened growth in Vines or any other fruit tree is altogether a misfortune. Every experienced fruit grower prides himself on having stout healthy foliage and wood as "hard as Oak," and I ask how in how many instances would this most desirable result be achieved without a good circulation of air from the time the leaves commence to fulfil their proper functions? Mr. Bardney may colour his Grapes sufficiently for market purposes if it were necessary in his case to sell them; but appearance is everything with market produce, whereas for a private table good quality is also usually essential. Air, not necessarily in large quantities, is necessary both to ripen the growth and the fruit, and unless the wood is firm in its earlier stages and well ripened at the finish it will not be long that the Vines will last in a profitable state. The exclusion of cold air may have prevented mildew, but it is not to this but rather to the annual lifting and generally good treatment of the trees I attribute Mr. Bardney's comparative immunity from that sometimes very troublesome pest.

With regard to the shading we employ, I should term it extremely light in comparison with the shading of wood strips Mr. Bardney is in love with. According to his description "practically only half the roof is shaded, the shadow from each piece of wood proving sufficient for the space between each space." Exactly so, and with a vengeance, or I am no judge either of Mr. Bardney's logic or of a heavy shading when I pass under it. Does he mean to infer that any thing in the shape of clear light or sunshine passes through to the house beneath? and if not what becomes of his arguments in favour of admitting plenty of light? I maintain that those wood blinds afford a more dense shade, and no other construction can be put upon his description of them. We are perfectly satisfied with the result of our summer treatment of various stove plants, but must let that portion of my subject alone at present.—W. IGGULDEN.

BOILERS v. WATER—PRACTICAL, NOT THEORETICAL.

UNDER the head of "Boilers v. Water" I detailed in your pages of September 29th, 1881, my experience of a boiler here as to cleansing, patching, &c. This gave rise to a certain amount of discussion in the following numbers, also comment by the Editors. Among the critics was one who came forward under the *nom de plume*, "Practical, not Theoretical" (see November 10th, 1881). This correspondent ventured to say, "We had better not just now say much about Mr. Ollerhead's boiler with the patch upon its side. Let the invalid work through the winter, and then—but we must not anticipate, but be—Practical, not Theoretical."

Now, Mr. Editor, will you kindly allow me the opportunity of informing that individual in particular and your readers in general that the invalid has been daily at work ever since and never shed a tear until this autumn, when I considered it wise to remove the old patches and refix them, and it is now again doing duty as well as ever. I think I may say with all fairness the test of five years' work ought to convince the greatest sceptic of the wisdom of cleansing and patching a boiler in a common-sense way. Were this a small boiler doing a little work there would be every reason to question the wisdom of patching it, but as it and the other alongside of it heats over two miles of piping whenever called upon, I think your readers will agree with me it has now stood a good test. I should be exceedingly pleased if Mr. "Practical" will honour us with a visit, so that he may see for himself, but I hope he will not bring Mr. "Theoretical" with him, as I do not believe in him. He is a kid-gloved man, and does not like work.—J. OLLERHEAD, *The Gardens, Wimbledon House, S.W.*

TRENCHED v. UNTRENCHED SOIL.

HAVING under another heading occupied considerable space in expressing my views upon the subject of the necessity for much judgment being required in the matter of trenching, I ought to be content. As a favour, however, I must ask to make a few brief replies to my friendly opponent, "A Kentish Gardener." He is really altogether premature in the conclusion he has arrived at—viz., that I have "worked myself into a corner." I am far from being cornered, but, on the contrary, am daily gaining ground—trenched and otherwise—or in other words, am receiving

valuable support in my theories. A "Kentish Gardener's" imagination "runs riot." He sets up views, presumably mine, and knocks them down again as only Kentish men can do it. Our stokehole drain, to which he alludes on page 411, is certainly 10 feet deep at the stokehole, but he was not supposed to know that we are on a sharp declivity, and before our drain has travelled 20 yards it was only 2 feet from the surface. It was a fair test of both the value of trenching and subsoil drainage, and as such I was justified in quoting it. If "A Kentish Gardener" can open a drain quickly without some of the subsoil mixing with the surface, he is a clever man. In our case, what appears to be a solid wall of clay dissolves, and assumes more the consistency of birdlime in a very short time after it is exposed to the atmosphere. The sides of a deep drain collapse in a surprising manner, and such wretched stuff near the surface is simply unmanageable.

Our friend writes—"If I mistake not, Mr. William Taylor had, when in charge of the gardens at Longleat, almost, if not nearly, the same soil to contend with as Mr. Iggulden, yet he did not practise the surface-tickling system, but deep cultivation by trenching and burning of the subsoil, and all to excellent effect." Luckily he adds he is open to correction, or he would feel rather small in the matter. Whatever Mr. Taylor might have done at the commencement of his honourable career at Longleat, I have his authority for asserting he did nothing so foolish after he had some experience with the garden. Nor does his practical successor, Mr. W. Pratt, go in for trenching, yet there is no mistaking the excellent effects of their good surface culture. Some of the best crops of vegetables I have yet seen were raised at Wilton House, near Salisbury, and probably there are few, if any, more intelligent gardeners than Mr. Challis. On the same day I asked Mr. Taylor about his Longleat experiences, I also incidentally questioned Mr. Challis as to his system of culture, and was delighted to find that he, too, found it would not pay to meddle with the chalk subsoil at Wilton. With such important testimony before me, am I so very unreasonable in again questioning the wisdom of deep culture in all and every case?—W. IGGULDEN.

MR. IGGULDEN, at page 448, concludes from a remark I had made in an article published a few weeks previously, that I do not appear to believe in trenching. I am afraid he has based that conclusion on too slight a foundation, though I may perhaps have to take some blame for not employing a more definite expression than I used. "The poorest and shallowest part of the garden" is a comparative statement, and at this moment does not bear, to my mind, the same idea, when applied to the ground in question, that it would have done a dozen years ago. But in that time, in addition to two heavy dressings of manure, there has been at least 9 to 12 inches in depth of material incorporated with the soil, and in fact the paragraph from which the above expression was taken clearly shows that it was the recommendation of a particular material too commonly wasted as a valuable agent in securing fruitfulness that was in the writer's mind, and no question as to deep or shallow cultivation, though the tone of the article showed to which side he leaned; most certainly not to that of Mr. Iggulden.

I have not followed closely the discussion on trenching, and cannot therefore enter on it here. However, I would desire to say that, to my mind, the whole matter may be summed up in a very small compass. On one side the practical bearing is, that the deeper the body of fertile soil, so much the more valuable is a particular space of ground; on the other side, given a minimum depth of soil, and whatever goes beyond that depth is not only unnecessary, but may become detrimental to good culture, and therefore lessens the value of the ground.—B.

MUSCAT GRAPES AT MOUNT MELVILLE.

MR. W. WILLIAMSON, on page 471, observes "Your correspondent (meaning myself) has made a slight mistake regarding the award for Grapes at the Show referred to, which I conclude was the last international in Edinburgh." It is Mr. Williamson who is wrong in his conclusions. It is some few years since I saw the beautiful Muscats at Mount Melville with paper shades over them. Though I doubt not your correspondent is correct in his statement respecting Mr. Dickson's object in using those shades, yet there was at least one exception to their being used on "hot days only," for the day on which I had the pleasure of inspecting the Grapes was cold, dull, and showery. Still it is possible that a sudden outburst of sun might have been expected, and it is these sudden gleams at midday that are often injuries. However that may be, the Grapes were shaded, and this did not impair their colour and finish, nor prevent their winning the high honour indicated at the show, at which I was not surprised to see them awarded the "first prize."—EXPERIENTIA DOCET.

CUT-BACK DWARF H.P. ROSES.

I QUITE agree with "J. H. W." that good blooms can be cut from dwarf H.P.'s that have been grown in one position without transplanting longer than four years, as we cut and exhibited successfully last season blooms from a bed planted more than twelve years ago. We have lifted the plants this autumn, though not without certain doubts whether they will not be missed next season, but it was a case of necessity, there being so many varieties that twelve years ago were in the first twenty-four, but will hardly rank in a seventy-two now, so great has the improvement been of the "queen of flowers." We have plants in another bed just commencing their ninth year, and showing no signs of age at present. I think, writing from my experience, that an eight-years average for beds is

preferable to four, but much depends on the way the ground is prepared. I think deeply planted dwarfs throw up stronger wood and so better blooms than those shallow planted. I have often noticed we have better blooms when they have rooted well above the collar than otherwise.

Standards require transplanting more frequently, as from mulchings and digging they are apt to be buried too deeply, and so will not thrive. This is an interesting subject, and I should like to read the opinion of more able and experienced Rose-growers than—H. E. M.

STERNBERGIA LUTEA.

A HARDY bulbous plant that has long been a favourite in many gardens is *Sternbergia lutea* (fig. 69), or, as it is sometimes named, *Amaryllis* or *Oporanthus luteus*. In warm, well-drained soils this plant



Fig. 69.—*Sternbergia lutea*.

and several other closely related species are very pleasing in the autumn, producing their flowers freely, something like *Crocuses* or *Colchicums*. *Sternbergia lutea* is a native of Southern Europe, and has been in cultivation for nearly 300 years, yet it is seldom grown in pots for the greenhouse or conservatory. Beautiful as it is in the borders, its bright golden flowers are much clearer and finer under glass, and a few potfuls are most welcome for late autumn or early winter in any cool house. A light compost of sandy loam and leaf soil is all that it requires, and it is not difficult to obtain a succession of flowers during several weeks by potting the bulbs at different times.

A form of the above, named *angustifolia*, also has fine flowers, though the leaves, as indicated in the title, are more narrow. *S. colchiciflora* is

a dwarf species, with smaller flowers, very abundant in "the fields of the Crimea about the Bosphorus," where it is said the fragrant Jasmine-scented flowers are produced in such numbers during September and October as to perfume the air for a great distance.



THE annual general meeting of the NATIONAL AURICULA AND NATIONAL CARNATION AND PICOTEE SOCIETIES will be held, by permission of the Council of the Royal Horticultural Society, in the East Crush Room of the Royal Albert Hall, South Kensington, as soon after 12 o'clock as possible, on Tuesday, December 7th, 1886. The business of the meeting will be the election of officers and Committee, receiving the Secretary's and Treasurer's report, the election of Judges for the ensuing year, and any other necessary business that may pertain to the annual general meeting.

— IN reference to the GOSHAWK PEACH, Mr. T. Francis Rivers writes: "Mr. Ward in his 'Notes on Peaches and Nectarines,' ascribes an American origin to this Peach. As it is a captive of my own bow and spear, I must ask you to correct this statement. I raised it from an American Peach, the Coolidge's Favourite, impregnated with the pollen of the Stanwick Nectarine, of which it possesses the flavour in a slight degree. I have always considered that this Peach, when known, would supersede some of the older midseason sorts, and the character given of it by Mr. Ward justifies my selection."

— MR. WILLIAM LITTLE, Moncrieffe Gardens, Perth, N.B., sends us good fresh samples of PEAS VEITCH'S PERFECTION AND BRUCE FINDLAY, remarking that "Relative to the mildness of the season in this locality I may say we gathered Peas in the open garden on the 20th November. Although a little hard they are wonderfully good Peas for this season."

— IT has been decided by the Committee appointed for the purpose that the TESTIMONIAL TO MR. WILLIAM HOLMES, Honorary Secretary of the National Chrysanthemum Society, shall take the form of an illustrated address and a silver centrepiece, and two side tazzas for the table. The presentation will probably be made at the annual dinner of the Society.

— THREE lectures on the DISEASES OF PLANTS in special reference to agriculture and forestry will be delivered by T. L. W. Thudichum, M.D., before the Society of Arts on January 24th and 31st, and February 7th.

— THE date of the next Exhibition of the KINGSTON AND SURBITON CHRYSANTHEMUM SOCIETY is fixed for Tuesday and Wednesday, November 8th and 9th, 1887. The annual dinner of this Society was held last week in the Sun Hotel, the company present numbering about fifty. The Mayor, who is President of the Society, occupied the chair, and amongst those present were: Ald. J. Mursh, J.P., Councillors Hide and Gray, Mr. Jno. Drewett (Treasurer of the Society), Mr. T. Jackson (Hon. Sec.), Messrs. T. Jones, Piper, Walker, Minett, Benson, Slade, Howard, Orchard, Gulliver, sen., Woodgate, King, Woolnough, Hardy, Buss, Smith, Gibson, Bates, Lyne, Puttock, Child, Shephard, E. J. and C. H. Parham, W. A. Drewett, Combs, Davis, Cornhill, Neave, Stevens, Gordon, Alderman, Clarke, and others.

— ONE of the best known Ghent horticulturists, M. AUGUSTE VAN GEERT, died rather suddenly on November 24th, aged sixty-eight. M. Van Geert commenced his horticultural career very early, by serving in Messrs. Knight & Perry's nursery in Chelsea, and during his stay in England became acquainted with the leading English nurserymen and other horticulturists. Returning to Belgium, he has until recently been engaged as a nurseryman, but a few years ago resigned his business to his son, M. Auguste Van Geert, who has since conducted it, and will continue to do so. The deceased gentleman had a good private collection of Orchids, to which he had given much attention in late years. His remains were interred on Friday, the 26th ult., in the parish cemetery

at Ghent, in the presence of large numbers of people. The Horticultural Societies to which the deceased gentleman belonged were represented by deputations. Many beautiful wreaths of natural flowers were deposited on the coffin. M.M. Auguste Van Geert, fils, and Pynaert Van Geert were the chief mourners. A troop of infantry rendered military honours on the occasion, M. Van Geert being a Chevalier of the Order of Leopold. A funeral oration was pronounced by M. le Comte de Kerchove de Denterghem, President of the Royal Botanical and Agricultural Society of Ghent.

— MR. CHARLES TOOPE of Stepney brought for our inspection last week the most beautiful small CONSERVATORY HEATER we have seen. It was specially made for a gentleman in the west end of London, who desired it to occupy a prominent position in the conservatory attached to his mansion. The design is the same as the Champion Heater, but the whole, including the hot-water pipes, made of brass and highly polished. It is named the Royal Kensington, and while effecting its purpose it will prove an ornament to the building in which it is placed.

— A FUNGOLOGIST of considerable reputation, Mr. C. E. Broome died in London on November 15th, at the age of seventy-four. Mr. Broome was associated with the Rev. M. J. Berkeley in some studies on Fungi over thirty years ago, and has since then, until quite recently, continued his researches, having paid especial attention to underground Fungi.

— WE learn with regret the death of a well known horticulturist, MR. CHARLES GREEN, formerly gardener to Sir George Macleay, Bart., at Pendell Court, Bletchingley. Mr. Green was previously in charge of Mr. Wilson Saunders' garden at Reigate, and had a good knowledge of plants, excelling in the culture of many difficult rarities.

— MR. JOHN R. BOX, until recently partner with Mr. John Laing at Forest Hill, has taken a business at Croydon, known as the East Surrey Seed Warehouse, formerly carried on by the late Mr. Archibald Henderson, also the Balham Hill and Tooting Park Nurseries, for many years occupied by Mr. Charles Young.

— "B." finds "TOM WELSH PINK a most floriferous variety. It is in the way of Newmarket, but in all respects an improvement on that variety, the flowers being larger and more freely produced, while the habit of growth is sturdier."

— "HAS anyone," writes a correspondent, "tried grouping colonies in masses when ARRANGING CHRYSANTHEMUMS FOR EFFECT?" Nothing perhaps is finer than a large houseful of white or white and yellow intermixed; but in mixed collections, by massing lilacs, browns, reds, yellows, whites, &c., the effect is very good."

— ROSES IN TASMANIA.—Mr. D. Gilmour, jun., writes: "A Tasmanian correspondent sends me the following:—'The Cloth of Gold Rose is the Gloire de Dijon of Tasmania, just as rampant and just as full of flowers everywhere. It is an exquisite Rose, paler than Maréchal Niel.' I well remember this lovely Rose when in Tasmania. There was an old tree hung over a wall near Hobart. We used to often pass by it. It was weighed down with hundreds of beautiful blooms. What struck me even more than the Cloth of Gold were the Banksian Roses, white and yellow. An old building by the roadside, a deserted stable apparently, was entirely hidden from view, and on every side hung down long slender branches loaded with thousands of the most bewitching blossoms, the whole forming a sight I shall not soon forget."

— GARDENING APPOINTMENTS.—Mr. C. Haycock, who has been for some years gardener at Barham Court, Maidstone, has been appointed gardener to R. Smith, Esq., Goldings, Hertford, and is succeeded at Barham Court by Mr. Woodward.

— THE WEATHER.—The first snowstorm of the season burst over North Wales last Tuesday, the weather having undergone a severe change for some weeks past. The weather has been abnormally fine and mild, Primroses and other wild flowers and fruits being gathered in the Welsh valleys. To-day extreme cold prevails, and the sky is overcast, indicating a further downfall. The lofty peaks are all capped with snow. In the neighbourhood of London the weather has become much colder, 7° of frost being registered on Wednesday morning.

— THE annual dinner of members and friends of the NATIONAL CHRYSANTHEMUM SOCIETY will be held at the "Old Four Swans," 84, Bishopsgate Street Within, on Monday evening, December 13th. Chair

will be taken by the President, E. Sander, Esq., at six o'clock precisely. Tickets 3s. each. The prizes awarded at the recent Exhibition at the Royal Aquarium, Westminster, will be distributed on the occasion.

— WE are requested to publish the following note:—"The general annual meeting of the LEEK ROSE SOCIETY was held at the "Swan Hotel" on Monday evening, the 29th November, Mr. A. Holden in the chair. The annual report and balance-sheet, which was submitted to the members, showed that the Society was in a very flourishing condition, that many lovers of the queen of flowers had commenced to grow them, and others had increased their collection considerably, and the Committee congratulated the subscribers upon being able last year to pay the prize money in full two days after the Show was held. This will give a direct contradiction to the statement made some few months ago by "D., Deal," in the columns of the *Journal of Horticulture*, "That the Leek Rose Society had died out through inanition," and that he had no authority from its members for making the assertion. The following were then elected upon the Committee for the ensuing year:—Messrs. W. Capewell, J. Garner, A. Holden; C. Kemp, M. Mellor, J. Shallcross, J. Broster, J. Gilman, and J. Knowles. Mr. H. W. Nixon was again elected Hon. Sec. and Treasurer. After the usual vote of thanks to the officers the meeting then terminated."

— MR. THOS. H. SYKES, Cringle House, Cheadle, Cheshire, sends a list of PLANTS IN FLOWER OUT OF DOORS, and remarks:—"It may be interesting *apropos* of the mildness of the season to tell you that in this humid climate of Cheshire I counted last Sunday, 21st November, more than sixty different kinds of flowers in my herbaceous garden in the open. I enclose a list. There were several others, the names of which I could not remember. Fuchsia, Japanese Anemone, Ericas, Phloxes, Geum coccineum, blue Cornflowers, single and double Dahlias, Viola, Gladiolus, Sweet Pea, double and miniature Sunflowers, Iberis, Pansy, Sweet William, Dianthus (various), Common and French Marigolds, Carnations, Lupin, Feverfew, Violet, Erigeron, Michaelmas Daisy, Hollyhock, Myosotis, Saponaria, Tropæolum, Campanulas, Periwinkle, Lobelia, Coreopsis lanceolata, Chrysanthemum, Hydrangea, Lilium auratum, yellow Marguerite, single and double red Daisies, Ox-eye, Polyanthus, Corn Marigold, Scabious, Pentstemon, Papaver orientale, Gaillardia, Strawberry, Onopordum acanthium, Clematis, Primrose, Stock, Rudbeckia, Saxifraga, Roses, Dromicum hybridum, Agrostemma, Catananche, cerulea, Anhrictia purpurea, and Rhododendrons."

— A CORRESPONDENT, "J. A.," desires to know what plant is referred to in the following lines:—

"Only one little sight, one plant,
Woods have in May, that starts up green,
Save a sole streak which, so to speak,
Is spring's blood, spilt its leaves between."

ORCHIDS AT CHELSEA.

SCARCELY are the Chrysanthemums past their best when Orchids again begin to attract attention, and though the numbers of those in flower at this time of year are not very great, it is surprising what a profusion of blooms can be maintained from now onwards to the new year. In the neighbourhood of London the dense fogs recently experienced have seriously affected all the more delicate Orchids in flower, such as the *Phalænopsis*, which invariably suffer severely in the typical November weather, but there are some that apparently defy even sulphurous fogs, and amongst these happily constituted plants the *Cypripediums* have a prominent place. Messrs. J. Veitch & Sons have in their Chelsea Nursery an excellent representative display of these Orchids just now, and with novelties, varieties, and select varieties in other genera there is much to interest an orchidist.

First to be noticed is the useful and pretty *Cypripedium Sedeni*, which has taken a position amongst the best of garden Orchids owing to its good habit, floriferousness, and pleasing delicate colour. For general utility it would stand at the head of the hybrid *Cypripediums* with the more recent less well-known *C. calurum*. In some respects, perhaps, the latter is preferable; the flowers are larger, holdier in appearance, and rather richer in colour, the plant being of stronger habit. They are equally free and easily grown, and both show a peculiar character in regard to the action of light on the colours of the flowers. It has been observed that in dull dark weather the rose or crimson tints become much deeper and richer, while in bright sunny weather they fade again, often becoming very pale, quite the reverse of what takes place in many other Orchids, notably in the *Calanthes*. The same change is noticed in all the forms of the *C. Sedeni* type, and it points to the necessity for a shaded position if the colours are to be fully developed. *C. Sedeni candidulum* is a charming member of the same family, with beautifully formed flowers of a most delicate tint, the palest rose fading to white, a pretty companion for its darker and older relatives.

Scattered through the numerous houses are many other *Cypripediums*, but one of the divisions is specially reserved for them, and there we find a capital display of flowers of about twenty species and hybrids. Very remarkable amongst these is *C. Arthurianum*, a distinct and beautiful hybrid that when first flowered was not appreciated so highly as it deserved, but has since developed characters that entitle it to attention. It resulted from a cross made between *C. Fairrieum* and *C. insigne* in a private garden, but the seeds so obtained were sent to Messrs. Veitch and Sons and germinated in their nursery. It partakes greatly of the *Fairrieum* character in the shape of the flowers, the curiously deflexed petals imparting a very distinct appearance. The long dorsal sepal and purplish tint is so evenly disposed in spots or streaks that the blooms are extremely neat and symmetrical. *C. oenanthum* and the greatly superior *C. oenanthum superbum*, the latter having a very dark flower with a shining surface as though it had been varnished. Near these is one of the parents of both hybrids, a good well-constituted plant—namely, *C. Harrisianum*, and an intensely dark variety, appropriately termed *nigrum*, is also flowering. *C. Haynaldianum* is remarkable for its long and clearly spotted petals; *C. Veitchi* (*superbiens*) for its large dorsal sepal, with beautifully regular greenish streaks; *C. Crossianum*, one of the Melchet Court hybrids (*venustum* × *insigne*) has neat pretty flowers, the lip and petals purplish and the dorsal sepal veined with green. *C. Dauthieri*, from *C. villosum* and *C. barbatum*, has large bold flowers, the dorsal sepal broad and of a dark crimson shade. *C. conchiferum*, of the *C. caricinum* and *C. Roezli* type, though not imposing is pleasing, having long petals; *C. marmorophyllum* has a deep purplish lip; the well-known *C. Dominii*, with its remarkably long drooping petals is flowering; *C. Barteti*, a cross between *barbatum* and *Chantini*; the small pink-flowered *C. Schlummi*; a host of the useful *C. Spicerianum* and the handsome *C. Leeanum superbum*; the white *C. niveum*, *C. Warneri*, with *C. Chantini*, and several other forms of *C. insigne*. It may be interesting to note that one of the Chelsea hybrids which has gained much favour on the Continent is *C. tessellatum porphyreum* (*barbatum* × *concolor*), and under the bright skies of Belgium and France it has assumed such a bright colour that a very experienced orchidist has not hesitated to term it "the best hybrid *Cypripedium* yet raised."

The cool house contains some handsome varieties of *Odontoglossum crispum* and *O. Rossi*. *Oncidium incurvum*, which has been in flower for three months, has numerous graceful panicles of small purplish flowers. Plants of *O. macranthum* are also showing well, their strong spikes being of surprising length. In the porch *Odontoglossum grande* is now nearly past its best, but has been very handsome for many weeks. *O. Insleayi* is still attractive, the pure white *Lycaste Skinneri alba* has some beautiful massive blooms, brightly coloured varieties of *Sophranitis grandiflora* are included with the others, *Oncidium Forhesi* and *Jonesianum* flowering freely. In the warmer houses *Odontoglossum Roezli* is noteworthy, *Cecylogyne Massangeana* has numerous long drooping racemes, *Vanda Sanderiana* is represented by a healthy plant and fine variety. There is a group of *Dendrobium bigibbum* in one of the houses, comprising a number of healthy plants flowering admirably; the white *D. Deari* has three good racemes, *Vanda cerulea*, and *Dendrobium formosum giganteum*, with the yellowish *D. luteolum* flowering abundantly. A very interesting hybrid that was certificated recently merits notice, though it is now out of flower. This was named *Zygopetalum leopardinum*, and was raised from a cross between *Colax jugosus* and *Zygopetalum maxillare*, being very strangely intermediate between the two species, thus forming another instance of *higeneric* crossing.

CHRYSANTHEMUM NOTES.

CHRYSANTHEMUMS AT LEEDS.—That the inhabitants of this great and busy town are lovers of flowers is apparent on passing through the fine covered market on a Saturday night and seeing the enormous provision of bouquets, especially of dainty arrangements for coat and dress decoration. Thousands of these are tastefully and temptingly disposed by Messrs. Shaw, now Walker Brothers, and other floral caterers; and plants of various sizes are also in great demand. Chrysanthemums are evidently great favourites, probably because they combine beauty with cheapness. Several establishments are necessary for maintaining the supply of flowers for the town and district, and one of those visited was St. Ann's Nursery, Kirkstall. Mr. Featherstone has made great progress here, and his resources are rapidly growing. Five extensive span-roof houses have just been added to the other five structures. The new erections are portable, the sides, ends, and sashes being of pitch pine, and some of them contain the finest collection of late Chrysanthemums we have yet seen. The plants were simply planted in beds, the growths kept in position by a few pea sticks affixed amongst them here and there, and the houses have been erected over the beds. Hot-water pipes are arranged round them, one next the roof at the foot of the lights, the other a little lower, this arrangement being better for dissipating damp than the ordinary plan of having the pipes on or near the ground. The varieties mainly grown for producing blooms from Christmas onwards are *Princess of Teck*, *Meg Merri-lies*, *Miss Marechaux*, and *Snowdrop*. It is a remarkable sight to see thousands of flowering stems, quite a forest of them, in the condition that Chrysanthemums are usually seen towards the end of September or early in October—that is, with buds ranging in size from small peas to large Marrowfats, fresh, plump, and with every prospect of opening kindly just when the blooms will be particularly acceptable. The plants appear to be flowering in quite a natural way, no special treatment having been accorded to retard them. The north would appear to possess advantages for producing Chrysanthemums at Christmas by and for the million, an

Mr. Featherstone has already turned them to account in an excellent manner. His display of plants now flowering is very extensive and imposing, huge naturally grown bushes being laden with a profusion of blooms that produce a magnificent effect. The Camellia houses are also something to be proud of, great luxuriant trees studded with thousands of buds just showing the purity of their petals. One large house is entirely filled with white varieties from the ground to the roof, and the flowers must be a little fortune to the possessor. Other houses are filled with splendid Palms and other plants employed in public and private decorations, in the carrying out of which Mr. Featherstone is extensively successfully engaged.

CHRYSANTHEMUMS AT CHILWELL.—One of the most extensive, varied, and imposing displays of Chrysanthemums to be seen in any public or private establishment may be inspected in the nurseries of Messrs. J. R. Pearson & Sons at Chilwell, Notts. The nurseries, which contain some of the finest glass structures to be found in trade establishments, are within a mile from Beeston station, this being about five or six minutes by rail from Nottingham. The chief display is in a light, lofty, span-roofed house 100 feet by 30 feet, the plants being arranged in gardenesque style, a twisting path being formed through the centre, and another right around the house. The plants are grown in pots ranging in size from 8 to 18 inches, the latter containing three plants, and as they have been generously grown such huge floral bushes are produced that are not usually seen. Some of the plants have been disbudded and developed handsome blooms, but the majority are flowered in the natural style, and as tastefully arranged produced a splendid effect. A ten-minutes visit did not permit an enumeration of varieties, but two or three stamped themselves on the memory by their freedom of flowering, richness, or other quality that arrested attention. The bloom of the show at the time of inspection was a Japanese with the very familiar, homely, English name of Grandpapa, a fine full flower, with drooping florets of the brightest orange red imaginable. Mr. Pearson did not appear to have a clear idea of the origin of the variety, which was distinct from others in the collection, and the nearest approach to a true scarlet of any. It should be tried in many gardens for testing its constancy. Very bright also and excellent for conservatory decoration, and affording armfuls of flowers for cutting, was Source d'Or. It is one of the freest and brightest, showing to a great advantage under artificial light. A number of plants not disbudded were bearing thousands of flowers. Similarly profuse was Alex. Dufour, purplish magenta, and the most useful of its colour for general decoration. William Clark was bearing soft chestnut-coloured blooms of immense size, and ought to prove good for exhibition. Two other nearly equally large houses are also filled with Chrysanthemums, one containing all the best of the single varieties; indeed, the collection of all types appears very complete, and the great display is attracting crowds of visitors. Chilwell, it will be remembered, is the home of the best Zonal Pelargoniums in cultivation, and these are now in fine condition.—J. W.

NATIONAL CHRYSANTHEMUM SOCIETY.—A meeting of the Floral Committee of this Society took place at the Royal Aquarium on Wednesday, the 24th inst., E. Sanderson, Esq., President, in the chair, and a good attendance of the members being present. A very large number of flowers were staged, the sitting of the Committee being a protracted one. The following awards were made:—First-class certificate of merit to Mr. Wirksworth, Childwall Hall Gardens, Liverpool, for Sir R. Brocklebank, a very fine yellow sport from the Japanese Meg Merrilies, regarded as one of the very best sports of the year. To Mr. M. Sullivan, The Gardens, Downshire House, Roehampton, for Japanese D. B. Chapman, magenta rose, large, full, and handsome flower, an extra fine late variety. To Mr. W. E. Boyce, nurseryman, Highgate Archway, for Pompon Rubra perfecta, rich bright chestnut, like a small Cullingfordi, regarded as intermediate between Cullingfordi and Boh, singularly bright in colour. To Mr. E. Mizen, Mitcham, for incurved Mr. Norman Davis, a very fine broad-petalled and handsomely incurved flower, a yellow sport from Princess Teck, and like that a late variety. To Mr. Robert Owen, nurseryman, Maidenhead, for Pompon Osiris, dark amber flushed with rose towards the base, a charming flower of excellent form. To Messrs. Henry Cannell & Sons, nurserymen, Swanley, for single Japanese Marigold, bright red with slight flakes of white and golden centre, fine and distinct, for Japanese L'Or du Japon, rosy crimson base with deep gold and paler centre, a fine flower of great substance and distinct character; and for large Anemone-flowered Mrs. William Holmes, a very pretty blush variety of excellent form and good size, in the way of but paler in colour than Prince of Anemones. To Mr. Kendall, The Gardens, Templeton House, Roehampton, for Japanese Moonlight, a pure white variety of the form and build of Madame C. Audiguier, and an excellent addition to the exhibition flowers.

The following were commended:—Japanese Syringe, an incurved pale pink variety, large, full, and promising from Mr. Martin, Deptford. Charles Hall, a hybrid, large-flowered variety, clear pink in colour, tubular florets, likely to prove a good decorative Chrysanthemum; and Iona, an incurved large-flowering type, a little rough as shown, the petals handsomely fimbriated, and commended on this account, both from Mr. T. S. Ware, Tottenham. Chrysanthemum coronarium Cloth of Gold, with well formed deep yellow single flowers, from Mr. E. Owen, Maidenhead.

OCTOBER CHRYSANTHEMUMS.—Mr. A. Young will find William Holmes, Roi des Précoces, and Simon Delaux capital crimson varieties of October flowering Chrysanthemums, and make good companions to

Madame Desgranges and G. Wermig. It may be serviceable to many readers if I give a list of those varieties that I consider would make a good collection for blooming from the middle of September to the end of October. It must be understood that I am writing upon free-flowering decorative varieties, and do not touch upon the numerous list of Japanese Chrysanthemums that are forced into bloom in October merely by being strongly grown in exhibition style; nor does the list include varieties that naturally bloom earlier than the dates mentioned. It must also be borne in mind that I speak from my experience as a southern grower, but at the same time think that the list might be suitable for more northern parts if the cuttings are struck in November or December, instead of in February, which time I find the best for all ordinary decorative Chrysanthemums.

In the following list those marked with † are for pot culture only, those with an * are best suited for the open ground, but all can be grown in pots:—*Alexandre Dufour (Japanese), purple; *Alice Butcher (Pompon), orange red; †A. Villatte des Prunes (Japanese), rosy pink; †Blanc Précocé (Japanese), white; *Blushing Bride (Pompon), lilac blush; †Bouquet Estival (Japanese), light purple; †Dame Blanche (Japanese), white; †E. G. Henderson et Son (Japanese), orange; Elaine (Japanese), white; Eté Fleuri (Japanese), light amaranth; Fleur d'Été (Japanese), light purple; *Flora (Pompon), yellow; *G. Wermig (Japanese), yellow; Isidore Feral (Japanese), rose lilac; †Lady Selborne (Japanese), white; Lakmé (Japanese), orange; *La Vierge (Reflexed), white; *Lyon (Pompon), purple; Margot (Japanese), salmon rose; †Mandarin (Japanese), rose and cream; †Martha Harding (Japanese), orange; *Madame C. Desgrange (Japanese), white; Mrs. Cullingford (Pompon), white; Mdlle. Elise Durdans (Pompon), rose pink; †Mdlle. Lacroix (Japanese), white; Mons. E. Pynaert Van Geert (Japanese), orange; Mons. H. Jacotot (Japanese), crimson; *Précocité (Delaux) (Pompon), crimson; *Roi des Précoces (Japanese), crimson; †Rosa Mundi (Japanese), rose purple; Simon Delaux (Japanese), crimson; Sœur Melanie (Pompon), white; †Vierge Japonaise (Japanese), white.—N. DAVIS, *Camberwell*.

CHRYSANTHEMUMS AT OLD WARDEN PARK.—Chrysanthemums are now becoming very popular, and deservedly so, for what plants give more pleasure at this dull season of the year? It was my good fortune to call at Old Warden Park this week, and it was a great pleasure to me to see a fine display of plants in full beauty. There were upwards of 500 pot plants arranged for effect. They were arranged in the early viney and Peach house, forming a bank upwards of 70 feet long by 10 feet wide, with plants from 6 to 7 feet high at the back, and sloping down to from 2 to 3 feet at the front, and edged with the red-berried Solanum, which made a fine finish. It was at once patent to the practised eye that considerable pains had been taken in arranging the colours, which were exceedingly bright and well blended. The individual blooms were not what may be termed exhibition blooms, because they had not been grown for that purpose, but simply for decoration; but we noticed some very fine blooms of some of the popular varieties which would have been no disgrace to an exhibition. I am in the habit of visiting some of the best Chrysanthemum shows in the kingdom, but I must confess that I have not seen such a bright and well arranged display in any private establishment or in any public exhibition this season, and they do great credit to Mr. Allis and his able foreman, Mr. Charles Turner.—VISITOR.

LAWN PLANTS.

EVERGREEN trees and shrubs play an important part in the embellishment of grass plots. A very fine effect indeed may be produced by a judicious selection and arrangement of the varieties with a view to affording by varied hues of foliage that interest so essential to enjoyment.

In ornamental gardening no evergreen is at all comparable to the Holly. It has a peculiar fitness for geometrical arrangements from its submitting to be cut and kept to almost any form and size required. Hollies like good soil, preferably light, but will grow in any soils free from stagnant water. They do well in towns and on mountain slopes, and are suitable for growing in sunshine or in shade. Those characteristics are as marked in the varieties as in the species. The best gold varieties are Regina (Golden Queen) and Waterer's; in silver, argentea (Silver Queen) and argentea variegata, which have bold foliage, and to which must be added latifolia aurea marginata. Of the small-leaved variegated angustifolia aurea is the best. In curious sorts Milkmaid (album plenum) and variegated Hedgehog (ferox foliis argenteis) are singular and beautiful. The erect-growing elegantissima stricta is also very fine, especially so for geometrical gardens. Of the broad-leaved Hodginsi, madeirensis, latifolia are the best. There are many both green and variegated forms which are more suitable for shrubberies than lawns.

The Strawberry Trees (Arbutus) are very effective, but they are not to be recommended except for sheltered situations, and except in such are best omitted. Similar remarks apply to Laurustinus, they not being hardy except in sheltered situations. Aucubas may be named as useful, especially for towns, in which they succeed admirably. There is none finer than A. japonica, and in neat bushes of 3 or 4 feet in height is very beautiful, especially when covered with berries.

Box forms close symmetrical heads, best as pyramids, in which form they are useful in formal arrangements, but are not recommended for lawns. The best are Buxus sempervirens and Handsworth broad-leaved, and (variegated) Variegated Tree and elegantissima. Box likes light soils. Double Gorse, as a lawn plant allowed to have its own way and

ent its figure on the grass, none is more beautiful. It does best on light soils and on peaty formations, but is not at all fastidious. Laurels may be passed over, only the Colchic Laurel makes a noble pyramid, and the Portugal is suitable for forming into a bush, half hails not being despicable, pyramids being truly handsome, and standards are not bad substitutes for Orange trees. They in any form are best adapted for formal gardens.

Of Evergreen Oaks the best is *Quercus austriaca sempervirens*, and it does best in a deep loam, but well drained. It is, of course, a large tree. Yuccas are decidedly bold and highly ornamental. Of these, *Y. recurva* is far the best. *Y. gloriosa* is certainly noble, and its variety *pendula* has grace as well as nobleness. The Yuccas fit in with any style of gardening, but are more suited to the formal. They like a deep light soil. In sheltered spots few plants are finer than *Aralia Sieboldi*, with large Fig-like leaves. A rich, light, and rather moist soil is most suitable, but it must not have the moisture stagnant. In cold localities it should be afforded protection in severe weather.

Rhododendrons, whether as bushes or standards, are suitable. They thrive in nearly all soils, except hot siliceous soil and those thin soils over gravel. They do not as a rule thrive on the oolite and limestone formations. They require a cool and moisture-holding soil. Peat is necessary to their successful culture in soil of an adverse nature, and then they are very beautiful from their flowers in early summer, and the deep green foliage at other seasons. The seed vessels should be removed as soon as the flowering is over.

DECIDUOUS TREES AND SHRUBS.

These are almost excluded from lawns conceived upon modern ideas. True, we see them in shrubberies where they have no chance to attain their characteristics, or show themselves in the beauty of foliage and flowers which constitute their charms in contrast with evergreens.

Ball Acacia (*Acacia inermis*).—The fine globular heads of this are very effective, but it is more suited to formal gardening than anything else. It has a peculiar fitness for striking the angles of walks and for screening the windows, &c., in town gardens. It likes a light soil, and is very beautiful and very accommodating, as its head can be kept very compact by pruning during the spring.

Beech.—Of all coloured-leaved trees there is none that can equal the Purple Beech. It is only, of course, suitable for a large lawn. The Fern-leaved makes a fine tree, and is very beautiful. Beeches do best in light soil, sandy or chalky.

Tulip Tree (*Liriodendron Tulipifera*).—Very beautiful, forming a large tree, the foliage being large and distinct, flowers not very conspicuous.

Maple.—The Acers are more suited to parks than pleasure grounds, but the Eagle's Claw (*A. laciniatum*) is remarkable, and *A. Negundo* variegatum is the most beautiful of all variegated trees. In contrast with a dark green background it is simply unique. Unfortunately it is not very hardy. It thrives best on well drained soils, and then ripens the wood well, and is considerably hardier on that account, being hardy as far north as York.

Horse Chestnut (*Æsculus*).—Relegating the large trees to the park ground, we have the beautiful scarlet *Whitleyi*, the yellow (*glabra pallida*) and the golden netted-leaved *Memmingeri*, and the dwarf forms, *macrostachya* and *rubicunda nana*. The Fern-leaved (*heterophylla laciniata*) is very distinct and graceful.

Cherry (*Cerasus*).—The double-blossomed are simply superb in spring, especially the double Weeping. Cherries like a light or calcareous soil.

Birch.—Lovely, whether it be the Silver Weeping, Fern-leaved Weeping, or new Weeping. They like moist soil, and have a peculiar fitness for association with water. The Purple-leaved is as beautiful in its way as the Purple Beech.

Elms.—These are mentioned mainly through their standing smoke well. *Berardi* is a cut-leaved sort of upright growth. *Ulmus campestris anrea* has golden foliage, elegantissima weeps and has silver-edged foliage; but the best of the weeping Elms is the Camperdown. Elms like damp ground.

Laburnums are fine for town and suburban gardens, *Parksi* being probably the best, but Scotch is superb. There is not a finer pictorial small tree than the Golden Laburnum, its foliage being very telling. Light soil is most suitable, but the Laburnums do well in any free soil.

Snowy Mespilus (*Amelanchier Botryapium*).—I doubt if any white-flowering tree can compare with this in spring for effective beauty, and it will grow anywhere.

Thorns (*Cratægnæ*).—The Thorns are town trees. They thrive in smoke, and their blossoms are beautiful, especially the Double Scarlet, Double Pink, and Double White. *Crus-galli*, *coccinea*, and *splendens grandiflora* with its large white flowers, *altaica*, *Royal* variegated, *nigra*, *Douglasi*, *tenacitifolia*, *glandulosa*, and others are superb.

All the deciduous sorts named so far are standards. They in that form, except weeping trees, admit of being mown under. We have only to add Willows for planting on the margin of ponds, than which none are finer than *Salix babylonica*, but *Kilmarnock*, *Salomon*, and *Wolseyana* are hardier and very fine. The stiff formal American is good, but does not accord with water so well as the whip-like sprays of the others.

Magnolia acuminata is very beautiful, forming a large pyramidal tree, and is the noblest tree of the family. Trees 45 feet high in May or June in flower are not soon forgotten. *M. auriculata pyramidalis* is dwarfier more pyramidal, and flowers earlier. *M. conspicua* and its vars., the very fine *Soulangeana* amongst them, are unrivalled for their white

blossoms in spring. They must, however, have warm or sheltered situations. *M. tripetala* flowering later needs not protection, nor indeed do the others, only they are better so as to save the flowers from frost, and on that account are given shelter.

Liquidamber styraciflua forms a compact tree with miniature Plane-like leaves, and the leaves change to a beautiful purple in autumn. It likes a light or well drained land.

Parrotia persica is another of the small trees or shrubs that is very beautiful in autumn from the rich leaf-markings, and requires a light soil and shelter.

Tree Pæonies do splendidly as lawn shrubs in sheltered positions, their large flowers having a noble and most effective appearance. They are truly grand, and amply repay any encouragement and protection in spring.

Sumach.—If there is anything finer in late summer than a good bush of *Rhus cotinus* I should like to know it. It seems to do best in light soil.

The list might be considerably extended, and those finding a tree or shrub doing well in a border forming a good specimen may safely give it place on grass with a certainty that it will do much better with light from all points than in a cramped border.

HERBACEOUS PLANTS.

Bocconia cordata.—The fine bold foliage, and its terminal panicles of peculiar brownish flowers render this very suitable where a plant growing 6 feet or more high is desired. Its foliage is light or glaucous.

Cimicifuga racemosa is very showy, its large biternate leaves deeply cut into segments being graceful, and garnished with its drooping racemes of feathery white flowers is very effective.

Eryngium pandanifolium is a very striking plant, after the style of a *Pandanus*, having long spiny leaves, the plant attaining to a height of about 3 feet, from which the flower stem rises to a height of 6 to 10 feet, and is a striking object in late summer. It does best in a rich light soil, and in such is quite hardy.

Fuchsias.—On a light soil the Fuchsias form lovely objects, their flowers being simply charming in their emerald setting. *Riccortoni*, *carolina*, *gracilis*, and *virginialis* are superb varieties. They like a light soil, or any well drained soil and deep will grow them perfectly; only in dry weather they like copious supplies of water or liquid manure, and in winter should have some leaf soil or other protective material over the stools.

Gunnera scabra.—Very noble in appearance when it does well, as it only appears to do in moist rich soil, and then is one very effective. Its large leaves 4 feet in diameter, borne on stout petioles, are very beautiful in bold feature. It is most suitable for planting near water; indeed, a moist soil seems indispensable, and does best when near running water. It is best with protection over the crown and some distance around in severe weather similar to *Rhubarb*. Mentioning *Rhubarb* reminds me of the stateliness of *Rheum officinale*, it also doing grandly in rich deep moist soil, but is hardly suitable for a dressed lawn.

Symphytum officinale variegatum is very attractive from its large foliage, variegated with yellow. It requires a deep rich moist soil, but will grow in almost any kind of land.

Tritomas are superb for sheltered situations, as they really do not stand wind well. Their grass-like leaves and long spikes of scarlet and yellow flowers are very effective. *T. nobilis* is the finest of the genus, and flowers early and continuously. *T. Uvaria glaucescens* is of dwarf habit.

Arundinaria Falconeri is of free and very graceful growth, and attains to large proportions. There are few plants more ornamental, and it does well on almost any soil, but best on damp or where its roots are moist in hot weather. It is particularly beautiful in a sheltered position near water. *A. spathulata* is also very graceful, but it does not seem to be quite so hardy. That, however, may be due to its having been coddled, as new plants mostly are.

Arundo conspicua forms dense tufts far more compact and rigid than *Pampas Grass*, the foliage being broader, the spikes of inflorescence being smaller, earlier, and not silvery.

Gynerium argenteum is well known and deservedly popular. *S. argenteum pumilum* is dwarfier, and on that account is suitable for small lawns.

In planting specimens on lawns the thing is to make proper provision, not being afraid of making a hole, stirring the soil well and as deep as the good soil allows, loosening that at the bottom of the hole, and if shallow taking out some of the bad soil, and refill with fresh. The turf should be replaced to within a short distance of the plant all round, lawn plants always appearing best in this way, and are preferably slightly raised above the surrounding level.—G. ABBEY.

STORING TUBEROUS PLANTS IN WINTER.

THE successful wintering of plants often gives garden managers, especially those in a small way, much concern, as where glass is limited it is a hard matter to find accommodation for all the plants which are liable to suffer from frost and damp during the winter; but tubers possess a great advantage over plants in this respect, as the foliage of the majority of them die in winter, and the roots can be stored away and preserved in a very small space. In fact, many of them can be wintered without any glass, and while a fine display of flowers or foliage is secured from them in summer, the expense of keeping them in winter is reduced almost to nothing, and they are not one-quarter the trouble and expense of common

Pelargoniums. As a rule tubers are rather liable to suffer from damp in winter, and this is the first thing to guard against. Some are in the habit of watering them after the foliage is quite gone, but this is a mistake, as the roots are not at work then, and moisture causes them to decay. As soon as the foliage is dead watering must cease in all cases, and a dry atmosphere and a dry soil should be their surroundings then and afterwards.

Gloxinias when in full leaf and bloom appear as if any drying off would kill them, but few plants enjoy complete rest in winter more, and they should always be dried off. They need not be kept in the pots in which they have been growing unless there is plenty of space for them, and then do not allow them to stand up in the usual way, but lay them on their sides under a stage or in a shed, and keep them in this position without water until February or March. So long as frost and damp is kept from them there is no danger of failure, but the most economical way of treating them is to turn them all out of the pots and pack them in shallow boxes for the winter. Any kind of box will do. A few leaves may be spread on the bottom, then a layer of sand, after which the tubers should be laid in as close as they can to each other, and then cover with more sand. Two or three dozen pots may be placed into one or two boxes in this way, and the tubers will keep well in them. It does not matter very much where they are placed so long as they are not frosted or excited into growth prematurely by heat.

Few plants are more showy in summer than *Caladiums*. A dozen or two of them will fill the glass houses or embellish the rooms in a very pleasing manner from May until October, and yet they might all be kept in a hat box from November until March; but *Caladium* tubers are very apt to perish in winter, and we have known many failures with them at this season, but that was mainly caused by the soil in which they were growing being watered too freely after the leaves had died. Watering should decrease as the leaves fade, and by the time the last of them have died the soil should be dust dry, then there is little danger of failure. It will never do, however, to allow the plants the chance of their being watered by accident or in any way during the winter months, and as soon as the foliage is gone they should be laid on their sides, not to be lifted again until it is time to restart them into growth. They will not keep well in a low temperature, and it is not safe to put them anywhere where the heat is less than 55° or 60°. Some may think this would soon induce them to grow again, but it will not so long as they are kept dry at the root. We have kept them frequently all winter in the pots, and to economise space we have often turned them out of the pots, shaken every particle of soil from the tubers, and stored in sand, and they all remained plump and healthy until the following spring. There is not any better way of treating them than this, and we recommend it above all others. They may be put one on the top of another, but this is not such a good way as placing them in a single layer with the crowns facing up, and covered with about 2 inches of sand.

Tuberous Begonias now form an extensive collection in many gardens, and it would be a difficult matter to find room for them all in winter if they were in pots, but they succeed admirably plunged in sand. Choice named varieties may be put in a single layer in a shallow box, but those which have been growing in the flower beds may be stored in casks like *American Apples*, only they must have some dry sand between them, and care must be taken that damp does not reach them when stored in quantity in this way.

Achimenes have curious little roots, and never fail to keep well plunged in dry sand.

The *Calanthes* may also be included amongst these plants, and when the flower spikes have been cut from these the pseudo-bulbs should be kept perfectly dry until March. They may be kept in the pots by laying them down on their sides in a dry place, or the pseudo-bulbs may be drawn up, the soil shaken from the roots, and placed together in a box or basket without any covering over. They may then be kept like *Onions* or *Apples*, and a case of perishing amongst them will be very rare. The *Gesneras* may be treated like the *Gloxinias*, and they are benefited by a long and complete rest.—J. MUIR, *Margam*.

FLOWERS IN WINTER.

THERE are two methods of treating winter-flowering plants, one of which may be said to be good and the other better. In addition to these there is also a bad system too much in vogue during the duller months of the year. I shall have something to say as to each of these, and will take first the good method. It may be called the system of conservation—the conservation of winter gardening. Thus we find a group of *Richardias* standing in some cool structure in waiting to be forced into flower at some particular date, under the mistaken idea that a few spathes at one set time is all the plants are capable of producing in the course of the twelvemonth. Then there are cultivators who turn out winter *Pelargoniums* when these have produced one set of trusses, the sole treatment of the plant while in bloom being one of conservation. As they bring on *Bouvardias* and *Carnations* in batches pinch the trusses out of double *Primulas* till a given time arrives when they are allowed to throw up their flowers. And in respect of temperatures, keep these at the lowest possible degree, while watering is pursued on the plan of giving just as much as will keep the plants in good condition.

The second and better method may be called that of progression. Instead of keeping to the minimum heat, sufficient is allowed, not only to conserve flowers, but also to keep the plants in vigorous growth, so that a continued succession of flowers is to be had from the same plants. This treatment necessitates the further difference of allowing the plants sufficient water in order to produce a continued succession of healthy roots to meet the demands made by new growth and flowers. Then it will be further found that a regular supply of manurial dressings will be an absolute necessity to keep the plants in vigorous health. Possibly those who see clearly the necessity of increasing the supply of water, and occasional doses of manure, will demur to that part of the treatment which renders these necessary—viz., a higher temperature than the plants will keep healthy under. But it may be pointed out that plants grown under glass, especially when it is impossible to give them fresh air, require somewhat greater average of heat artificially in order to produce such results as are here stated. Of course very much depends on the kind of structure in which plants are grown. Those which are light will do with less artificial heat; but even under the best conditions there is a great drawback in the matter of deflected light. As bearing on this point, most people who have to do with these matters must have noticed how well plants grown out of doors succeed as compared with those under glass. As instances of what is here meant it may be said that we repeatedly have *Pelargoniums* producing trusses out of doors in November, when at the same time a semi-stove treatment is required for the same class of plants flowering in pots. *Chrysanthemums*, as another instance, will be found to come on more rapidly out of doors than they will under glass, referring to late-flowering plants here. The same remark applies to *Richardias*, *Eupatoriums*, &c., which so long as they are kept from frost will come on as well out of doors as they will under greenhouse treatment. But in carrying out a progressive system, so that a continued supply of fresh flowers is produced on softwooded plants, it is necessary to cut the flowers as they become fully open. This is an absolute necessity. Proof of the flower-producing tendency induced by cutting all newly developed flowers may be found in the case of hardy herbaceous plants, many of which if left to themselves bear only one crop of bloom, whereas if cut they continue right on as long as the weather permits, throwing up fresh crops of flowers.

The bad system consists of extremes. Too much artificial heat in relation to light will induce growth alone without flower, and that is a wasteful method. On the other hand, it too often occurs, owing to a policy of shortsighted money-saving, that plants are treated to the very lowest temperature they will stand during the winter months. Thus we find bedding *Pelargoniums* and other plants which stand the treatment even worse kept in a condition of absolute stagnation. *Primulas*, decorative *Pelargoniums*, young *Chrysanthemums*, *Mignonette*, &c., are kept much too cool. It is only possible to do justice to all of these by keeping them in a suitable temperature. The difference in the temperature need not be much, nor is the expense perhaps of any great account, while the result is all in favour of a growing condition.

A word of caution may be added as to wintering hardy plants, for in the case of these it occurs that much mischief may be done by keeping them too closely shut up in weather when they would be much better in the open air. Thus *Violas*, *Carnations*, *Auriculas*, &c., should be grown entirely in the open, using the sashes merely to keep out frost and wet. *Calceolarias* which may be rooted should have the same treatment, but if not rooted they are much better kept close until roots are formed in early spring.—B.

ÆSCHYNANTHUSES.

GESNERIACEOUS plants are some of the most brilliant ornaments of our stoves, the majority of them producing very gaily coloured flowers in abundance, and these seem even more attractive in comparison with the rich diversity of foliage which *Palms*, *Crotons*, *Dracænas*, *Alocasias*, and innumerable others present. *Gesnerias*, *Tydas*, *Gloxinias*, *Achimenes*, and *Streptocarpus* include many handsome plants of great value not only for the stove but for cooler houses also, though the majority are more at home in a rather high temperature.

The genus *Æschynanthus*, to which especial attention is now called, similarly comprises several species of much beauty, particularly as basket plants, for which their epiphytal and pendulous habit well fits them, and in gardens where they are carefully grown no better plants for that purpose could be desired. The rich scarlet and orangeshades distinguishing their flowers are unrivalled, and the blooms, being produced in large trusses or clustered closely along the stems, have a very imposing appearance when pendulous from elegant baskets near the path of a stove. They are not more difficult of management than many other epiphytal plants; but it is no use attempting their culture in any house where a high and

moist temperature cannot be maintained with regularity, and perhaps most failures that occur in the growth of these plants is due to a misapprehension of their requirements in this respect. The baskets should be prepared in the ordinary way with a layer of large potsherds and some pieces of charcoal, over which a layer of rough moss or peat can be placed, upon which the plant should rest, with good fibrous peat in lumps placed firmly round the roots. Water must be liberally but judiciously supplied; and if at any time the temperature becomes unduly reduced the amount of water given must be proportionately limited, or the plants will soon become extremely unhealthy, and when once they get into that state it is very difficult to insure their recovery.

A few of the species are adapted for culture in pots, the best of these being the one represented in the engraving, as it is of more erect and



Fig. 70.—*Aeschynanthus tricolor*.

sturdy growth than the majority, and the large trusses of flowers being borne at the apex of the stems in an erect manner, and are seen to much better advantage in that way than when in baskets. Some cultivators prefer peat alone for this species under pot culture, with thorough drainage, but a little turfy loam incorporated with the peat is beneficial. But in that case sand should be also used, unless the pot contains a large proportion. Both the baskets and pot plants must have a warm position in the stove, and then little difficulty will be experienced with them.

Æ. speciosus is one of the most handsome, its large scarlet and orange flowers being produced in trusses of sixteen to twenty, and with several of these on a plant of moderate size in a 48 or 32-size pot the effect is most striking. Another valuable quality it possesses is the remarkable durability of the flowers, which last in good condition for some weeks. Like several others of this genus, we are indebted to Messrs. Veitch and Sons for the introduction of this plant, which was found by Mr. Thomas Lobb growing upon trees in damp woods on Mount Asapan in Java at an elevation of 2000 feet. *Æ. fulgens* was also collected by Mr. T. Lobb in Monlmein. It approaches the above in habit, but is more drooping. The leaves are large and ovate, the flowers being 3 inches or more long, scarlet streaked with yellow in front, and are borne in large heads.

Æ. cordifolius, obtained by the same collector, is a native of Borneo, with leaves and flowers of moderate size, the latter about 2 inches long,

deep scarlet streaked with black in the throat, and produced in pairs or triplets in the axils of the leaves. This is well suited for a basket, as also is its near relative *Æ. tricolor* (fig. 70), both being of slender habit. The last-named is similarly a native of Borneo, whence it was obtained by Messrs. Low of Clapton. It has small ovate leaves, the flower being about 1½ inch or 2 inches long, scarlet streaked with orange and black.

Æ. javanicus is a showy form, with deep scarlet flowers streaked with yellow, and borne in the axils of the leaves near the point of the stems; while *Æ. Lobbianus* ought to be included in every collection, its rich scarlet corollas contrasting so well with the deep purple calyx. All these succeed best in baskets. This plant is especially useful owing to its free growth and flowering, requiring rather less care than the others, and the flowers last for a great time.—L. C.

CHRYSANTHEMUM SHOWS.

LIVERPOOL.

THE heavy pressure upon our pages last week prevented us giving a critical and detailed account of the best autumn exhibition ever seen in Liverpool, or perhaps in this country. Competent judges, who have visited all the leading shows for the past twenty years, declared the one under notice to be far in advance of any they had seen. Throughout nearly all the classes provided in the schedule the competition was keen, and the whole of the exhibits were of the highest quality, and, therefore, reflected the greatest credit upon the exhibitors. The losers have no cause to be ashamed of being beaten, for many worse stands of blooms and dishes of fruit have, throughout the country, been placed in leading positions. If there is one fault connected with this magnificent Exhibition it was that even St. George's Hall was inadequate for the products without crowding. Every available position was filled with exhibits, and fresh tables had to be provided for many of the cut blooms. Those who are familiar with the size of the Grand Hall will form some idea of the display and number of exhibits, when it is stated there were sufficient to have filled the hall if it had been half as large again.

CUT BLOOMS.—The schedule comprised fourteen classes for cut blooms, and no less than 1400 were staged for the forty-three prizes offered. Taking the blooms as a whole they were unquestionably the finest ever exhibited. The Japanese were large, fresh and highly coloured, while the incurved were generally of superior quality, and considerably above the average as seen this year. Everybody seemed particularly pleased that Mr. F. Roberts carried off the ten-guinea silver vase in addition to a money prize of £3. He well deserved it, for he has fought year after year for the chief position, and always received his defeat cheerfully with the determination to try again. Patience and perseverance have rewarded him with the premier position this year. Both his opponents have gained the cup on previous occasions. Mr. Roberts took the lead principally with his incurved, which were superb, being only two or three points ahead of Mr. Jellico with the Japanese. Mr. T. Leadbetter, the other competitor, was much behind the first stand, many of his incurved flowers being past their best. Other particulars and the varieties are given on page 484. The two classes for twelve incurved blooms, exhibitors in the one class being excluded from the other, deserves special notice. The competition was remarkably keen in both classes, some seven or eight stands in each case were staged. Mr. F. Roberts, gardener to W. D. Holt, Esq., took the lead with very fresh large blooms of Lord Alcester, Alfred Salter, Empress of India, Queen of England, John Salter, Princess of Wales, Emily Dale, Mr. Bunn, Princess of Teck, Jardin des Plantes, Mrs. Heale, and Jeanne d'Arc. Mr. G. Burden, gardener to G. Gockburn, Esq., Lingdale Lodge, Oxton, was placed second with grand flowers. Mr. W. Playfair, gardener to H. H. Nicholson, Esq., Spital Hall, was a capital third. In the corresponding class Mr. W. Wilson, gardener to H. Cunningham, Esq., Gorsey Cop, Gateacre, was deservedly first with very similar blooms to those named above. Mr. T. Foster, gardener to J. Branker, Esq., second; and Mr. J. Wilson, gardener to J. E. Reynolds, Esq., Sandsfield Park, third. For six blooms Mr. F. Tobin was placed first. For six Anemone-flowered varieties Mr. W. Wilson was to the front with a capital stand of blooms, while Mr. Jellico took the lead for six reflexed flowers. For twelve Pompons Mr. A. Collins, gardener to S. Smith, Esq., M.P., Princess Park, was placed first.

The prizes offered for the premier incurved and premier Japanese bloom of the Show were won by Mr. J. Wilson with grand examples of Lord Alcester and Boule d'Or.

FRUIT.—The display of fruit was an exhibition in itself, for never has fruit been staged in St. George's Hall in such quantity or in such admirable condition. For twelve dishes, distinct, Mr. J. H. Goodacre, gardener to the Earl of Harrington, Elvaston Castle, Derby, was well first with Gros Colman, Mrs. Pearson, Muscat of Alexandria, and Mrs. Pince Grapes. These were all in superb condition, being well coloured, large, and even in the berry, while the bunches were of good size. The large-sized berries of the first mentioned elicited the admiration of all; they were very even, and the majority nearly 1½ inch in diameter. King of the Pippins Apple highly coloured; Pears, Marie Louise and Pitmaston Duchess; a dish of Golden Drop Plums, one of Vicomtesse Hericart de Thury Strawberry, a good fruit of H. ro of Lockinge Melon, and two fine Pines were the other dishes in this collection. Mr. W. B. Upjohn, gardener to the Earl of Ellesmere, Worsley Hall, Manchester, was second, having very large Pears and a nice fruit of Gough's Melon. Third Mr. Hannagan, gardener to R. C. Naylor, Esq., Hooton Hall, who also staged very fine Pears and fair Alicante and Gros Colman Grapes. Five collections were entered in this class. In the corresponding class for six dishes no less than seven collections were contributed. The same exhibitor again took the lead, having Gros Colman in the same magnificent condition; the other dishes a Melon of the same variety as before; Coe's late Red Plums; Marie Louise Pears, large; Lord Lennox Apples, highly coloured; and a good bunch of Muscat of Alexandria Grapes. Mr. T. Elsworth, gardener to A. R. Gladstone, Esq., Court Hey, was a close second with capital Muscat of Alexandria and Alicante Grapes, and a fresh fruit of William Tillery Melon; Mr. W. Hannagan again taking the third position, Pears Doyenné du Comice and Duchesse d'Angoulême

were particularly fine. The display of Pears was large, and the fruit throughout of first quality. For eight dishes the Rev. L. Garnett, Christleton Rectory, Cheshire, staged grand examples, and was accorded the premier position; Mr. Goodacre and Mr. W. Hannagan followed, both showing well. For four dishes Mr. W. H. Jones, gardener to C. Bamford, Esq., was to the fore. For one dish Mr. R. Pennington, gardener to Edward Banner, Esq., was placed first. In the corresponding class Mr. McKenzie, gardener to F. S. W. Cornwallis, Esq. For six dishes of dessert Apples the last exhibitor was again first with excellent examples, and Rev. L. Garnett was successful for one dish. For eight dishes of culinary Apples Mr. McKenzie again took the lead, followed by the Rev. H. Arkwright, Mr. Goodacre, and Mr. Hannagan, the last named being awarded an extra prize. For four dishes Mr. R. Pennington obtained the premier position, and the Rev. H. Arkwright for one dish. The Apples were of large size and very highly coloured, and the competition in every instance was very keen. The names of the leading dishes of these and the Pears are not given because they were similar to what have been repeatedly enumerated this season in our pages.

GRAPES.—Six classes were provided, and 110 bunches were staged, being six, seven, eight, and ten collections in each class. In none of the classes was there less than six competitors. Throughout the fruit was large in the bunch and berry, and the colour may be said to be good in every instance. For two bunches of Muscats, Mr. D. Lindsay, gardener to Sir Edwardes-Moss, Bart., Otterspool, was well first with large bunches, highly coloured, with fine large even berries. Mr. J. Parker, gardener to J. T. Raynes, Esq., Rock Ferry, being a good second, and Mr. A. Crosbie, gardener to the Duke of Montrose, Buchanan Castle, Stirling, third with large bunches and large berries, well coloured, but the bunches were rather loose. For two bunches of white Grapes, any other variety, Mr. A. Collins was first with splendid clean examples of Golden Queen; Mr. Goodacre was second with good bunches, smaller in the berry, but not so well coloured; Mr. D. Lindsay was third. For two bunches of black Grapes (Alicantes), Mr. W. Wilson was first amongst ten competitors, with superb examples carrying a very dense bloom. Mr. T. Elsworth was a good second, but the bunches had not been thinned sufficiently. Mr. J. Downham, gardener to E. H. Harrison, Esq., third with grand examples. To the remaining seven competitors in this class the same description applies. For two bunches, black, with Muscat flavour, Mr. J. Hollingworth took the lead with good Mrs. Pince, the only fault being they were a little short of colour. Mr. J. Barker followed with good Madresfield Court, and Mr. J. Wallis, gardener to Rev. Walter Snayd, Keele Hall, Staffordshire, with Mrs. Pince. For two bunches any other variety, Mr. Goodacre was well first with Gros Colman in the same excellent condition as those previously described in the collection of fruit. Mr. T. Ferguson, gardener to Mrs. Patterson, Rock Ferry, was second with large bunches, highly coloured, of Gros Guillaume; Mr. A. Collins being third with larger bunches of the same variety, but slightly less in the berry, and not quite so well coloured. For four bunches, Mr. J. Hollingworth, gardener to J. T. Campbell, Esq., Woodseat, Uttoxeter, gained first honours with an excellent collection, consisting of Lady Downe's, Trebbiano, Alicante, and Golden Queen. Second Mr. W. Elphinstone, gardener to A. Munday, Esq., Shipley Hall, with Mrs. Pince, good; Gros Colman, very fine; a fair bunch of Muscat of Alexandria, and a rather weak Golden Queen. Mr. T. Elsworth was a good third.

ORCHIDS.—These were not shown in large numbers, but those staged were in first-rate condition. For three plants Mr. J. Edwards, gardener to H. Tate, Esq., Allerton, was first with *Oncidium Rogersi* with two large spikes, very fine; *Lælia elegans* with three flowers; and *Phalænopsis grandiflora aurea* with three flowers. Mr. T. North, gardener to Enoch Harvey, Esq., second. For one plant Mr. M. Clary, gardener to Rd. Hobson, Esq., Bromborough, with *Odontoglossum grande*, with eight or nine spikes of bloom; Mr. J. Edwards second with *Oncidium tigrinum*, and Mr. A. R. Cox third with *Cattleya superba splendens*. Mr. J. Hurst, gardener to W. B. Bowering, Esq., took the lead for one *Cypripedium*, and Mr. J. Wilson for *Calanthes*.

TABLE PLANTS.—These were in the same excellent condition as generally seen at the Liverpool Shows. Mr. T. Fleetwood, gardener to F. Harrison, Esq., was awarded the first position for six plants, consisting of *Croton alburthensis*, C. Chelsoni, *Dracæna gracilis*, *Aralia Chabrieri*, *Pandanus Veitchi*, and *Geonoma gracilis*. Mr. J. Agnew, gardener to Mrs. Watts, Aigburth, second with a neat collection of plants; and Mr. J. Hurst third.

FERNS, PALMS, AND OTHER PLANTS.—For four Ferns Mr. A. R. Cox was well first with splendid plants. Mr. T. Gowan second with smaller, but very healthy specimens. For three Palms the same exhibitor was again first, followed by Mr. A. Crosbie and Mr. T. Jones. Roman Hyacinths were good. Mr. C. Wearing, gardener to J. Aitkin, Esq., was successful, and Mr. W. H. Jones for Primulas, which were only fair. For four Poinsettias, Mr. J. McGrath, gardener to R. R. Heap, Esq., West Derby, was first, and Mr. T. Fleetwood for Cyclamens.

MISCELLANEOUS EXHIBITS.—The most telling group of plants in the Exhibition was contributed by Messrs R. P. Ker & Sons, and consisted of a groundwork of Roman Hyacinths, dark coloured Cyclamen, and *Adiantum cuneatum*, with *Cocos Weddelliana* rising above them, and *Adiantum farleyense* in very small pots stood on the top of the pots of *Cocos*. The arrangement was novel and highly attractive. The Horticultural Company (John Cowan) contributed a collection of stove and greenhouse flowering and foliage plants, also a collection of Chrysanthemums in 5-inch pots varying from 1 to 3 feet in height. These were well grown and highly interesting, and of a very useful size for decoration. Messrs. F. and A. Dickson & Sons contributed a collection of well-grown Carnation (tree) in bloom, and Messrs. W. Cutbush & Sons, Highgate, London, a collection of mixed plants, amongst them small Oranges laden with fruit and *Pernettyas* in 5-inch pots covered with berries. Some eight varieties were staged, *P. macrocarpa* being one of the best; *P. purpurea gigantea* is also very striking. *Bouvardia Dazzler* was also exhibited, and has very bright red flowers. The Horticultural Company contributed wreaths and bouquets, Messrs. Fishlock Bros. a very similar exhibit, which was highly praiseworthy. Mr. C. Ryland, Ormskirk, staged a large collection of dessert and kitchen Apples. Mr. H. Middlehurst, seedsman, Manchester Street, exhibited his "Filbert" Brussels Sprouts, which were very fine, being closely studded with hard, compact, moderate-sized sprouts. Mr. Kipps, Walton Lea Gardens, War-

ington, exhibited a pot of Strawberries lifted from the open ground on November 2nd, and since grown under glass; the specimen was very good, and showed unmistakably the mildness of the season. It was bearing upwards of a hundred fruit between twenty and thirty of them coloured and nearly ripe.

BIRMINGHAM.—NOVEMBER 24TH AND 25TH.

THE Town Hall was filled with the exhibits of the Society holding their twenty-sixth Show. It was considered to be in all respects the best of the series yet held, and reflected great credit on the executive. Cut blooms were staged in large numbers and generally of capital quality if we except a few of the incurved section, which were rather rough. Plants of Chrysanthemums were excellent, bouquets and Primulas were staged in large numbers. Miscellaneous non-competing groups of plants were a great attraction, Grapes and Apples were staged in large numbers and of the best quality. For nine large-flowering Chrysanthemums, Japanese excluded, Mr. Brasier, gardener to T. Martineau, Esq., was first with plants 4 feet across, evenly trained, freely flowered and fresh; the best was *Jardin des Plantes*, particularly rich in colour. Mr. H. Dyer, gardener to Mrs. Marigold, Edgbaston, also with good specimens, the best being *Lady Slade*. Mr. J. Crook, gardener to W. Millward, Esq., Edgbaston, was first for six plants with well trained plants of the leading varieties. Mr. E. Cooper, gardener to J. Chamberlain, Esq., M.P., staged the best single specimen incurved, a very fine plant of *White Venus*, 4 to 5 feet across, and having remarkably fine blooms; while Mr. Brasier occupied the same position in the Japanese class with a profusely flowered specimen of *Bouquet Fait*. Mr. Brasier also took leading honours for six specimens of Pompons, having large bushes not too stiffly trained, freely flowered *Mdlle. Marthe* and white *Cedo Nulli* being the best. Second in this class was Mr. Dyer, also with good plants not disbudded, loosely trained.

Cut blooms were staged in large numbers, as many as 1420 in all classes, and as may be supposed, made an imposing array in the gallery. In the great class for forty-eight blooms, twenty-four incurved and twenty-four Japanese, distinct varieties, there were eleven competitors. This class was remarkable for the successful debut of Mr. R. Parker, gardener to J. Corbett, Esq., Impney Hall, Droitwich, who was an easy first, staging magnificent blooms of Japanese and incurved varieties, solid and fresh, and of capital finish, *Triomphe de la Rue des Châlets*, *M. Astorg*, *Belle Paule*, *Flamme de Punch*, *Fair Maid of Guernsey*, *Baronne de Prailly*, *Thunberg*, *Madame C. Audignier*, *Madame Laing*, very fine; *Japonaise* being the best of the Japanese, while the most noteworthy in the incurved section were *Jeanne d'Arc*, *Queen of England*, *Prince Alfred*, *John Salter*, *Lord Alcester* very large, *Princess Teck*, *Empress of India*, *Princess of Wales*, and *Pink Venus*. Mr. W. Comfort, gardener to G. A. Everett, Esq., was second, staging fine Japanese, also large incurved, but these were rather old. He had good blooms of *J. Delaux*, *Boule d'Or*, *Comte de Germiny*, *Belle Paule*, *Thunberg*, and *Comtesse de Beauregard*. Mr. J. Lambert, gardener to Col. Wingfield, Shrewsbury, was third with smaller but neat blooms; Mr. C. Raffill, gardener to H. Lovatt, Esq., Wolverhampton, was fourth with fine Japanese, but the incurved were stale. For twenty-four blooms, twelve to be incurved, and the same number Japanese, all distinct, there were twelve competitors, the best coming from Mr. Barker, gardener to Lord Hindlip, Hindlip Hall, the Japanese being very fine, while the incurved were extra large, though rather wanting in finish. The best were *Alfred Salter*, *Golden Empress*, *Jeanne d'Arc*, *Princess of Wales*, *Empress Eugénie*, and *Barbara*, fine; *M. Burnet*, *Japonaise*, and *Thunberg* the best Japanese. Second Mr. R. Parker, with rather smaller, but otherwise good blooms. Third Mr. W. Comfort, smaller, but very neat specimens.

For eighteen incurved blooms, distinct varieties, there were ten competitors; the best stand was that from Mr. Barker, but he unfortunately staged duplicate a bloom of *Princess of Wales* under the name of Mrs. Heale, which led to his disqualification. Mr. W. Comfort was first with neat flowers of *Princess of Wales*, *Queen of England*, *Bendigo*, *Lord Alcester*, and *Pink Venus*. Mr. Dyer was second. Mr. Barker had the best stand of Japanese in twelve varieties amongst the same number of competitors with large even bright blooms, *Triomphe de la Rue des Châlets*, *M. Burnet*, *Criterion*, *Sarnia*, and *Japonaise* were the best. Mr. R. Parker was an exceedingly close second, losing only by a couple of points. Mr. F. Styles, gardener to Mr. A. Healing, Tewkesbury, was third, staging the best varieties; this was an excellent class all through. Mr. Barker was again to the front amongst seven others in the class for twelve *Anemone* blooms, not less than six varieties; very good were his *Mdlle. Cabrol*, *Fabian de Mediana*, and *Gluck*; very close came Mr. A. Johnson, gardener to R. Ramsden, Esq., Knowle, for second place: while Mr. Comfort was a good third, both exhibitors staging fine blooms. Mr. R. Johnson was first prizewinner in the class for twenty-four varieties distinct, half to be Japanese and the remainder to be incurved, to be grown within twelve miles of Stebbenson Place, and very handsome they were. Mr. H. Dyer was second with six blooms of reflexed varieties, the same conditions to apply as in the former class; Mr. Comfort was an easy first, followed by Mr. L. Fawkes, gardener to H. Weiss, Esq., Edgbaston.

For twelve Chinese Primulas, single varieties, any colour, Messrs. Thomson, Spark Hill Nurseries, Birmingham, was placed first for capital plants, dwarf in habit, fine foliage, and freely bloomed. Second, Messrs. Pope, nurserymen, King's Norton, with plants not so even in size, but having capital flowers. Cut blooms of Camellias were well shown by Messrs. Perkins & Sons, Coventry; while the best bouquet for the hand, confined to nurserymen only, the same firm won chief honours with a choice arrangement of the best flowers, each being freely and lightly disposed. Second, Hans Niemand, Royal Nurseries, Harborne Road, Edgbaston; third, Mr. G. H. Fawkes, Selby Oak. The best bouquet, open to gentlemen's gardeners only, Mr. H. James, gardener to W. C. B. Cave, Esq., Harborne, was first; second, Mr. L. Fawkes; third, Mr. G. Newell. The best miscellaneous collection of nine plants in or out of bloom, Chrysanthemums excluded, were staged by Mr. Brasier, consisting of *Croton Veitchi*, finely coloured; *Cycas revoluta*, healthy; *Eupatorium odoratum*, large bush; and *Callicarpa purpurea*, an effective berry-bearing plant. Second, Mr. H. Dyer, *Callicarpa purpurea*, fine, as his best plant. The best group of Chrysanthemums in pots was arranged by Mr. J. H. Horton, gardener to R. Chamberlain, Esq., M.P., Edgbaston, composed of capital plants having fine blooms of both Japanese and incurved, neatly arranged if we except

the front row, which was spoilt by using badly adapted plants of Pompons, otherwise this was a fine group.

Fruit, as before stated, was staged in large quantity, the Apples particularly being fine, as many as 450 dishes placed for competition. For a collection of fruit, six dishes distinct varieties, Mr. E. Gilman, gardener to the Earl of Shrewsbury and Talbot, Ingestre Hall, was first, having excellent Alicante and Muscat of Alexandria Grapes, good Charlotte Rothschild Pine Apple, Beurré d'Anjou Pears, and Hero of Lockinge Melon. Mr. Parker was second; he had the same kind of Grapes in good order and capital Beurré Diel Pears. Mr. W. H. Bannister, gardener to H. H. V. Ames, Esq., Bristol, was third. Mr. W. J. Thornton, gardener to W. Bassano, Esq., Old Hill, was placed first with Alicante, large in bunch, berry, and good in colour, in the three-bunch class for black Grapes. Second, A. J. Pass, Esq. Mr. Parker was third with Gros Guillaume, fine in bunch and berry, but slightly wanting in colour. An extra prize was awarded to Mr. W. Comfort for same variety. With very fine bunches of Trebbiano, Mr. Gilmour took leading honours in the two-bunch class, Muscats excluded. Second, Mr. Lambert; third, Mr. W. J. Thornton. Mr. J. Pass staged Alicante, very fine, for the leading prize for one bunch black Grapes. For the best twelve dishes of Apples, six dessert and six culinary, Mr. W. H. Bannister was first, staging very fine fruits of Yorkshire Greening, Peasgood's Nonesuch, Brabant Bellefleur, Ribston Pippin, and King of the Pippins. Second, Mr. H. Mason, gardener to J. Watkins, Esq., Hereford; third, Mr. Parker, both showing fine dishes; nine competitors.

Mr. Mason was also first prizewinner for six dishes, half culinary and remainder dessert, with produce similar to his in the larger class; second, Mr. H. Lyney, gardener to Col. Paulet, Warwick; third, Rev. J. A. Williams, Stratford-on-Avon. For twelve dishes of Pears, distinct varieties, Mr. Barker occupied the leading position; Mr. Parker second, and Mr. Bannister third. Very fine collections of Apples came from Messrs. R. Smith & Co., Worcester, and Mr. George Bunyard, Maidstone, Kent, consisting of about 100 dishes in each collection of the finest varieties, highly coloured; to these were awarded certificates of merit. Miscellaneous groups of plants, most effectively arranged one in each corner of the hall at the orchestra end, came from Mr. T. B. Thompson, consisting of Palms, Crotons, Dracenas, Heaths, and Tulips all in good condition; and Mr. Hans Niemand, Royal Nurseries, Harborne Road, Edgbaston, had a grotto arrangement of richly coloured Crotons, finely grown Palms, and Arum Lilies, on a groundwork of Ferns and Panicums, and other choice plants, along with Roman Hyacinths. These two groups evoked general admiration. A certificate of merit was also awarded to Messrs. Pope for a handsome bank of Pelargoniums, having large trusses of blooms, about 100 plants in 48-sized pots. The new semi-double variety Le Bruant was one of the most noteworthy. Choice wreaths and crosses from the same firm were much admired. Messrs. H. Cannell & Sons, Swanley, Kent, had a choice collection of cut Pelargonium blooms and Chrysanthemums arranged in their usual fine style. Certificates were awarded for Mons. Freeman, a fine lilac variety having twisted petals of the Japanese section, to Catherine Wheel, a pure white Anemone well adapted for decorative purposes, and to the single yellow variety Helianthus. Mr. T. Winkworth, gardener to Mr. Ralph Brockelbank, Childwall Hall, Liverpool, showed blooms of his golden sport from Meg Merrilies, which was certificated and much praised.

CUCKFIELD.—NOVEMBER 25TH AND 26TH.

THE third annual Show of Chrysanthemums was held at Cuckfield in the "Talbot Hotel" Assembly Rooms on the 25th and 26th inst. As on former occasions (the Committee not being in a position to guarantee a prize list), was dependent upon exhibits kindly sent by the neighbouring gentry. Their exertions were amply rewarded in the excellent display of Chrysanthemums, fruit, and vegetables brought together. Eight groups of Chrysanthemums were staged, and, considering the lateness of the date, they were a very fine lot of plants, some of them being remarkably fresh and bright. There was also placed on the tables 130 dishes of fruit, chiefly Apples and Pears, besides trays, and collections of vegetables of high class quality.

Some of the largest flowers were in the group sent by T. W. Best, Esq. (Mr. Lingly, gardener), but they were considerably past their best, some of them assuming a second beauty in "autumn tints." E. Huth, Esq., Hazledean (Mr. G. Newnham, gardener) sent large well bloomed plants, not well suited for grouping. T. W. Erle, Esq., Millhall (Mr. H. Scutt, gardener) a group of plants remarkable alike for their dwarfness and the freshness and quality of the flowers. These plants had evidently been cut down at the end of May, while others seemed to be July-struck plants, and they furnished a striking example of the superiority of such plants for grouping. The same gentleman also showed some good fruit and vegetables.

The group sent by F. M. Huth, Esq., Henmead (Mr. Frost, gardener), was composed of compact natural-grown plants, undisbudded, fresh, and profusely bloomed. M. Turner, Esq., Butler's Green (Mr. A. Scutt, gardener), also staged a good group, and the standards from the same gentleman were handsome well-grown plants, and would have stood well forward in a strong competition. C. L. Peel, Esq., Woodcroft (Mr. E. Tickle, gardener), sent a smaller group suitably surrounded with fine Maidenhair Fern and foliage Begonias. The next group was sent by R. A. Bevan, Esq. (Mr. G. Stringer, gardener), chiefly Japanese, and was edged with Fern, amongst which were mixed Poinsettias and Dracenas, which looked very bright. This gentleman also showed a large collection of Apples and Pears, amongst which were placed some beautiful plants of Cyclamen of an excellent strain. Mrs. Maberly Mytens (Mr. J. Mitchell, gardener) also contributed an excellent group, and a fine collection of fruit.

Mr. Manton, gardener to Mrs. Clifford Bo-rer, Pickwell Lodge, who is a local champion in vegetables, staged some fine specimens of his skill, and would have been well to the fore in a contest with his Apples, which were very fine. Mr. G. Warren, gardener to Mrs. Hankey, Belcome Place, showed twenty-four dishes of fruit, remarkable for the last week of November, were fine fresh samples of Coe's Late Red Plum. Miss Margesson (Mr. H. Parsons, gardener), Major Sergeson, Cuckfield Park, and the Rev. F. J. Mount, the Vicarage (Mr. C. Thompson, gardener), also contributed collections of fruit, the latter being artistically arranged on moss and leaves, with plants and cut flowers interspersed. Mr. J. Tugwell acted as Hon. Secretary. It is to be hoped the ladies and gentlemen of the neighbour-

hood will next year give these gardeners such an amount of support as to insure a prize list for 1887.

WELLS.—NOVEMBER 24TH.

THIS, the first Exhibition of the Wells Society, was highly successful in every respect, and must have been very encouraging to the body of gentlemen and gardeners who originated it. With the addition of a few open classes and prizes of increased value no difficulty will be experienced in attracting a still better show next autumn, and this has already been decided upon. The fixture was at least one week too late for any season, but in spite of this a considerable number of good plants and cut blooms were staged, and these were certainly as fresh in appearance as the majority of exhibits at earlier shows. The Hon. Secretary, Mr. A. G. Andrews, and the Hon. Treasurer, Mr. Robert Isgar, both worked very hard, and with the help of a good working Committee succeeded in arranging an attractive display in good style, and the judging was completed and the doors opened by the time advertised—an achievement not always attainable by much older societies.

Some of the best prizes were offered for groups composed principally of Chrysanthemums, and of these there were five in competition. Mr. W. A. McKenzie, gardener to W. Belgrave, Esq., took the first prize for a very effective arrangement of well-grown plants, among which Cullingfordi, Princess of Teck, Mrs. Dixon, Peter the Great, Hero of Stoke Newington, and Ethel were conspicuously good. Mr. J. B. Payne, gardener to the Bishop of Bath and Wells, was a creditable second, being closely followed by Mr. T. Wilkinson, gardener to C. C. Tudway, Esq.; and an extra prize was awarded to Mr. G. Humphries, all having abundance of well-bloomed plants. The best six specimens of incurved varieties were staged by Mr. W. Potter, gardener to A. Colston, Esq., who had neatly trained examples of Mrs. Rundle, Empress of India, Mrs. Dixon, and other popular varieties. Mr. J. B. Payne had the second prize for ordinarily staged plants, carrying very fine blooms, Princess of Teck, Lord Alcester, and Jardin des Plantes being very good. Mr. Potter was also first for six Japanese varieties, Peter the Great, Mons. Henri Jacotot, and Mons. C. Hubert being the best represented sorts. The second prize was awarded to Mr. G. Tatchell, gardener to A. G. Andrews, Esq., he also having several good freely bloomed plants. In a class for mixed varieties Mr. J. Payne was placed first, showing Mrs. Rundle, Mrs. Dixon, Mons. C. Hubert, Sœur Melanie, and Rose of Castille in very good condition, and he was closely followed by Mr. Tatchell, who took the second prize.

There were several exhibitors of two fine-foliaged plants, Mr. A. Moore, gardener to Sir R. Paget, Cranmore, leading with good specimens of Pandanus Veitchi and Alocasia metallica, the second prize going to Mr. T. Wilkinson, who had two Palms. Mr. Wilkinson was also first for two table plants, having pretty examples of Pandanus Veitchi and Dracena Cooperi. Mr. J. B. Payne was a good second. There were several lots of six Primulas in competition, Mr. Payne taking the first prize for rather small but well-formed and richly coloured varieties, Mr. Tatchell taking the second prize for freely bloomed plants. There were several non-competitive exhibits of plants, the most noteworthy being a very pretty group of Orchids sent by F. J. Clarke, Esq., Street, most of which were noticed in our report of the late Street Show.

Cut blooms staged in fairly large quantities proved most attractive, the greater portion of the visitors not having previously seen fully developed flowers. The premier prize for twenty-four blooms, to consist of equal numbers of incurved and Japanese varieties, was easily won by Mr. Payne, who had very fine examples of incurved Golden Empress of India, Princess of Wales, Princess of Teck, Lady Slade, Cherub; and Japanese Meg Merrilies, Japonaise, Balmoreau, Grandiflorum, Mdle. Lacroix, Ethel, and Roseum Superbum. Mr. W. A. McKenzie had smaller but well-set-up blooms, and was second, the third going to Mr. G. Tatchell. With twelve incurved varieties Mr. Payne was first, having good blooms of popular varieties, Mr. McKenzie being second, and Mr. Tatchell, third, similar positions being held by these exhibitors with twelve Japanese sorts. Both vases filled with Chrysanthemums and foliage, and hand bouquets similarly composed, were extensively and well shown. In the former class Mr. A. Moore took the lead with an imposing arrangement, the second going to Mr. Wilkinson for a very lightly filled epergne. The others were much too heavy in style, and the same may be said of the unplaced bouquets. The best bouquet was shown by Mr. Wilkinson, Mr. Moore being a good second, and Mr. J. Summerhayes third.

A creditable lot of Grapes were shown in the class for any black variety. Mr. Moore staged well-finished Alicante, and was easily first, the second prize going to Mr. Payne, and the third to Mr. Wilkinson, both having Alicante fresh and good. Mr. Moore was also first with a white variety, staging well-grown Muscat of Alexandria, and Mr. McKenzie was third with Syrian. Numerous dishes of Pears were shown, Mr. Moore leading with good Marie Louise; and Mr. Wilkinson was second with very fine fruit of Duchesse d'Angoulême. Mr. Hall had the best culinary Apples in three varieties, and Messrs. Payne, Wilkinson, and others also showed well in the Apple classes. Mr. Payne was first for Tomatoes, and Mr. McKenzie second; and with Mushrooms the prizewinners were Messrs. Moore, Wilkinson, and Tatchell.

Among the fruit exhibited, not for competition, the most noteworthy was an extensive collection of Apples and Pears staged by Messrs. W. E. Browne & Sons, nurserymen, &c., Wells, included being clean good examples of Pears Doyenné du Comice, Beurré Langelier, and Marie Louise; and Apples Lord Clyde, Peasgood's Nonesuch, Alexander, Warner's King, Tom Putt, Rymer, and Small's Admirable. Mr. Moore had a very interesting collection of Gourds, Medlars, Quinces, and Cape Gooseberries, and also a very fine dish of Vicomtesse Hericart de Thury Strawberry.

COLCHESTER.—NOVEMBER 25TH.

AS is well known, the ancient town of Colchester is famous for its Roses, the veteran grower, Mr. B. R. Cant, having won many a victory in the most formidable contests of the day; and Mr. Frank Cant has well sustained the reputation of the neighbourhood by the excellence of his blooms, which have occupied a foremost place at leading exhibitions. It is evident that Chrysanthemums are also favoured at Colchester. The old churchyard was

a veritable flower garden, these flowers growing apparently in wild profusion among the tombs, producing a mass and mixture of colour such as is seldom seen in such positions. The plants were chiefly Pompons, and it must be said that they exceeded in vigour, floriferousness, and size of blooms any of the same type in the Exhibition. But the churchyard blossoms were fading, not a few being far advanced in decay—conclusive proof that the date of the Show was fixed at the least ten days too late, and it was a matter of surprise how fresh the exhibitors had kept the plants and blooms that were placed in competition. They must, however, have lost many, and considering all the circumstances of the case they, on the whole, showed wonderfully well.

The Exhibition was held in the new Corn Exchange, a very large and well-lighted building admirably adapted for the purpose, and as the collections were effectively disposed under the superintendence of Mr. J. C. Quilter, the able Secretary of the Society, the hall had a well-furnished and remarkably bright appearance. The groups of Chrysanthemums formed the most striking feature of the Exhibition. These were not composed of an unlimited number of plants on single stems carrying from three to six very large blooms; but the stipulation was for thirty plants shown as grown arranged in a space not exceeding 50 square feet. In this class, which was open to all, there was great competition, the plants as a rule being such as are commonly grown for the embellishment of conservatories, several of them not having been disbudded, or very slightly, only a few being encouraged to develop individual blooms. In this class the premier prize was well won by Mr. F. Kettle, gardener to Mrs. Egerton Green, King's Ford, Stanway—a free, bold, fresh, and effective group; the plants carrying from twelve to fifty blooms each, not a few of them being very good. The second prize was awarded to Mr. C. Gall, gardener to F. A. Cole, Esq., Colchester, with a bright and not closely packed group, the plants bearing from twelve to twenty good blooms each. Mr. H. Spooner, gardener to Rev. F. Norman, Mistley, was third with bright moderately dwarf plants, but too crowded; Mr. C. Unwin, gardener to Rev. R. C. Hales, Lawford, being adjudged the remaining prize with the dwarfiest plants of all, but so closely arranged as to form a smooth surface of colour. A fewer number of finer blooms and more freedom and relief in arrangement would have rendered this and some other groups more pleasing and effective. Mr. B. R. Cant arranged a very imposing group of plants, bearing several good blooms, not for competition.

Classes were provided for six plants of Chrysanthemums, excluding Japanese varieties, and for six plants of Japanese; also for three plants of each respectively, and the same number of Pompons. Mr. Kettle secured the first position in all these classes except one, in which Mr. Gale was successful, the remaining prizetakers being Mr. W. Dance, gardener to Col. Lowe, Gosfield Hall, Halstead; and Messrs. Unwin, Rolfe, Draw, Gall, and Brook. Several of the plants were of large size and very gay, but few were dwarf trained.

Cut blooms were not staged in great numbers, but several of the stands contained remarkably neat and, considering the date, fresh examples. Mr. H. Lister, gardener to Lord Brooke, Easton Lodge, Dunmow, won the silver epergne given by the Mayor and Corporation of Colchester for twenty-four varieties, twelve incurved and twelve Japanese, with highly creditable and well-finished examples of Empress of India, Golden Empress, Queen of England, Lord Alcester, Mr. Brunle's, Princess of Teck, Hero of Stoke Newington, Princess of Wales, Angelina, Lady Slade, and Mr. Bott. Japanese: Madame C. Audiguer, Marguerite Marrouch, Soleil Levant, J. Delaux, Madame Lacroix, Triomphe de la Rue des Chalets, Japonaise, Peter the Great, Meg Merrilica, all in surprisingly good condition. Mr. Dance was a good second with extremely neat incurved blooms, and fresh and bright Japanese, the remaining prize going to Mr. E. Hotson, gardener to C. B. Skinner, Esq., The Chantry, Ipswich, for larger blooms, but less fresh and well finished. In the class for eighteen varieties the prizes fell to the same exhibitors in the same order. Mr. W. Brooks was first in the two classes for twelve blooms, Mr. Kettle being the most successful competitor in the smaller classes.

Excellent collections of Apples, Pears, Vegetables, and Potatoes, were staged, but we have not space for enumerating the varieties and prize-winners in these classes. A beautiful hall-room bouquet exhibited by Mrs. Kerry is highly worthy of mention by its artistic arrangement and richness; it was composed of golden bronze Japanese Chrysanthemums, with a lace border to match, and commanded general admiration.

MANCHESTER.—NOVEMBER 24TH.

We are informed by a gentleman who visited this Show that it was of more than ordinary extent and excellence. What may be termed conservatory plants are always well exhibited at Manchester. These are plants remarkable for their dwarf habit, robust growth, luxuriant foliage, and handsome blooms. The stems are not bent or twisted to make round formal specimens, but the cutting down system is practised; hence the sturdiness of the plants. This method, we believe, originated in the Manchester district and gradually spread southwards, and is now followed by all the most successful exhibitors of Chrysanthemums arranged for effect. At Manchester Mr. Bles, Boughton Park, was the premier exhibitor of plants for conservatory decoration, with splendid examples, followed by Messrs. J. Wild, Whitefield, and W. Holland, Higher Broughton. In the class for nine specimen plants Mr. J. Fletcher, Kersley Vale House, distanced all competitors with admirable examples, notably of King of Crimson and Princess Teck, the remaining prize falling to Messrs. A. Heine, Fallowfield, W. Holland, and S. Reddaway, all exhibiting well. Pompons were very good indeed, the awards going to Messrs. Wild, Brennand, and Heine in the order named; and for Japanese, which were highly effective, to Messrs. Brennand, Hunter, and Agnew.

Cut blooms were very fresh, and many of them fine; indeed, a better collection has not been arranged in the Town Hall. In the class for twenty-four incurved varieties, and that for the same number of Japanese, Mr. E. G. Wrigley, Dunkinfield, was the leading exhibitor, followed in the former class by Messrs. D. MacIure, Heaton Mersey, and Mr. Goodacre, Elvaston Castle; and in the latter by Messrs. J. Walker, Stockport, and Mr. Goodacre. Mr. Walker won the chief prizes in the two corresponding classes for twelve blooms, Mr. Wrigley occupying a similar position in the class for thirty-six miscellaneous blooms. Hand bouquets formed an attractive fea-

ture of the Exhibition, those shown by Mr. Heine being exquisite in arrangement and variety. Three pans of Sonerila shown by Mr. Joseph Broome were greatly admired. An extra prize was awarded to Mr. John He, wood for black and white Grapes. Very fine collections of plants were shown, not for competition, by Messrs. Dickson & Robinson, and Dickson, Brown, and Tait, of Manchester, and the Liverpool Horticultural Company, all of these exhibits receiving first-class commendation. In the corridor there was an exhibition of Apples and Pears, fifty varieties being shown by Messrs. R. Smith & Co., of Worcester. Mr. S. Barlow, of Stakehill, showed a collection gathered from trees planted only two years ago. Mr. Goodacre was also a successful exhibitor of fruit. The Show was excellently arranged, and admired by crowds of visitors.

CLONMEL.—Nov 24TH.

THIS very successful Show was never excelled in Clonmel; and as regards the quality of some of the exhibits, was superior to anything ever staged in Dublin. The weather—the great arbiter of success or failure as regards flower shows—more resembled a halmy bright day in June than the customary November, enabling the ladies to don bright costumes, in keeping with the floral beauty and brilliantly lit up the large Assembly Room of the Courthouse, where the Show was held. As to the number present, notwithstanding the space of this fine room, the crush at times was considerable, especially during the day. At night the price of admission was reduced to the popular sixpence, and the place was well filled, rendering a promenade at times no easy matter.

The members of the Committee present, and superintending the arrangements, were chiefly H. S. Boyd, Esq., Suir Mount; Frederick Clibborn, Esq., Anner House; and Thomas Phelan, Esq., Spring Garden, the courteous and energetic Hon. Secretary, on whom much of the preliminary arrangements devolved. These gentlemen were also contributors to the decorations of the ball room, with plants and flowers for exhibition only, especially Mr. Clibborn, who sent for the central tables numerous Palms, hardy Orchids, and Maidenhair Ferns, and several decorative Chrysanthemums in pots. Among others who sent contributions for the same purpose were Mrs. Bagwell, collection of rare Ferns from Marfield; Mrs. Gough, fine specimens of foliage Begonias from Rathronan Manor; Mrs. Fayle, ornamental Gourds from Merlin; Mrs. Crean, decorative Chrysanthemums, from Coolgreany; Miss Fanuy Carruthers, a basket of Chrysanthemum cut blooms, tastefully arranged for effect, and grown by herself. Two other contributions deserve special notice—namely, the collection of fruit and flowers from the residence of the Hon. Dudley and Lady Camelia Fortescue at Summerville, Dunmore East. Lady Fortescue (head gardener, Mr. J. A. Calthorpe) kindly sent two dozen cut blooms of decorative Chrysanthemums, not grown for exhibition. The magnificent cut blooms that outdistanced all competitors at the recent Royal Horticultural Society's Show, Dublin, a week ago, were exhibited by F. Clibborn, Esq., Anner House; a collection of Apples and Pears, and some stove plants, including some beautiful sprays of Bougainvillea glabra, very fine for the time of the year. As to Mr. Clibborn's cut blooms of Chrysanthemums that won the Marchioness of Headfort's special prize in Dublin against all Ireland, they were arranged on green moss at one end of the room, not for competition, and looked even now wonderfully fine and fresh, though cut ten days.

With plants and groups there were six entries—From Mrs. Malcomson, Minella (gardener, Mr. John Crehan), F. Clibborn, Esq. (gardener, Mr. Crowley), Mr. Thomas O'Shea, Thomas Phelan, Esq. (gardener, Mr. Halpin), Mrs. Bagwell (gardener, Mr. Cleary), and Mrs. Gough, Rathronan (gardener, Mr. Mulcahy). The first and second prizes, and commended, went in the order named. Mr. Crehan had three well-trained specimens of Julie Lagravere, Mr. A. tie, and the Japanese la Frisure, that would get a prize at any show. He had also Duchess of Manchester, Jardin des Plantes, and Guernsey Nugg t.

The incurved blooms indicated the progress made since last year. The schedule was for twenty-four blooms, of not less than twelve varieties. The first prize went to Mr. Frederick Clibborn, second to Mr. Thomas Phelan; the former were of great size, depth, and finish, the second were very fresh and bright. The most notable of the winning blooms, in the order stated, commencing with the top row, were Queen of England, Alfred Salter, Empress of India, Golden Empress, Lord Wolseley, Golden Queen of England, Bronze Jardin des Plantes, Blush Queen, Jeanne d'Arc, Jardin des Plantes, Prince of Wales, and George Glenney; not repeating duplicates. Mr. Phelan's were more varied, and included Nil Desperandum, Hero of Stoke Newington, John Salter, Bronze Jardin des Plantes, Prince Alfred, Jardin des Plantes, Princess Teck, Refulgence, Lord Wolseley, Lady Harding, Princess of Wales, Mrs. Shipman, Cherub, Empress Eugenie, Barbara, Lady Slade, and Golden Beverley. The next class was for twelve incurved, at least six varieties, and though there were five competitors, Mr. Crehan, for Mrs. Malcomson, was many points ahead of the second, Mr. O'Shea, who was succeeded by Miss Jellico, Cahir, Mrs. Bagwell, R. W. Smith, Esq., Cahir, and Miss Grubb, Glenam. The winning box contained some admirable blooms of Blush Queen, Empress of India, very fine; Jeanne d'Aro, Empress Eugenie, Guernsey Nugget, Alcester, Piuk Venus, Duchess, and Jardin, which shows Mr. Crehan could easily have competed in the last section. Mr. O'Shea had Inner Temple well done; Golden Queen, Empress of India, and Jardin des Plantes, bronze and yellow.

The first prize for twenty-four Japanese blooms, at least twelve varieties, went, after a close contest, to Mr. Phelan, the second to Mr. F. Clibborn. The varieties were:—Top row: Jean Delaux, Fernand Ferral, Mons. Astorg, F. Ferral, Criterion, Belle Paule, Japonaise, and Madame Clemence Audiguer. Second row: Marguerite Marrouch, Val Andorre, M. Plancheron, Marguerite Marrouch, Jeanne Delaux, M. Plancheron, Count Germiny, and Marguerite Marrouch. Front row: Peter the Great, Madame C. Audiguer, J. Delaux, Comte Germiny, Peter the Great, Henri Jacotot, and John Laing, very fine. As to the second prize twenty-four, Mr. Clibborn's wondrous blooms lost marks for freshness, as some of them were the blooms he won with in Dublin a week previously. We give the several varieties in full: Fair Maid of Guernsey, Madame C. Audiguer, La Traviata, Boule d'Or, Belle Paule, Criterion, Mdle. Lacroix, Source d'Or, Madame de Sev n, Comte Germiny, Coquette de Castile, Mons. Freeman, F. A. Davis, Mons. Astorg, Beauté de Jardin, and Jupiter; the remainder being duplicates.

The next class was for twelve Japanese, and for which there were six

entries, almost all of which were a distinct advance on last year. First prize went by a few marks to H. S. Boyd, Esq., Sairmount (gardener Mr. Keating), second prize to Mrs. Malcomson (Mr. Crehan); commended, R. W. Smith, Esq., Cahir; Mrs. Bagwell, Mr. Clibborn, and Miss Jellico. In Mr. Boyd's stand was the first Chrysanthemum at the Show, really bright, large and beautiful, two blooms of Belle Paule, fresher, but not larger than Mr. Clibborn's. Messrs. Phelan and Clibborn were the winners with reflexed blooms, and for Anemones Messrs. H. S. Boyd, Clibborn, Phelan, and Crehan.

Fruit was well represented, Grapes, Apples, and Pears being shown in good condition by Mrs. Malcomson, Mrs. Crehan, Coolgreany (Mr. Burke, gardener), and Mrs. Bagwell.

NEW YORK.

THE Exhibition of Chrysanthemums by the New York Horticultural Society, beginning November 2, and ending the following Sabbath evening, was the finest show ever made by this organisation, all things considered. The first day or two of the Exhibition some of the flowers had not fully panned (on account of the backward condition of bloom in this locality, which was about four days later than last season), and many persons expressed disappointment, but every day the flowers opened wider, and the Show was handsomer, and everyone was delighted who came to criticise the queen of autumn.

The majority of plants entered were of the bush form; these were from 3 to 5 feet high, and about the same in diameter. The Japanese and Chinese types were about equal in number. There was a fine show of the Anemone-flowered, which appears in all types, and the Pompons held their own in the display, and received an ample share of admiration. As many as 1200 flowers were counted upon several of the plants. The standards were from 6 to 9 feet high, and their heads of bloom towered over the lower plants with fine effect. These were plants trained as fans, which were admirable for a growing design in this plant. These fans were about 8 feet high, and were most gracefully spread out with flowers like an open fan at the top of the tall stem.

The arrangement of the Chrysanthemum plants with backgrounds of crimson-tinted Oak trees, Hemlocks, Spruce, and Irish Junipers, was extremely tasteful, suitable, and effective. From the balconies of Cosmopolitan Hall to the floor these forest trees were spread out in a trellis, and at intervals platforms were raised, on which the bush plants were placed, those of the Chinese type one side the hall, and the Japanese opposite. Through the centre of the building were large oval parterres of plants, with specimen Palms and other decorative foliage massed in a large hed near the west end of the building where the Japanese garden was laid out.

As viewed from the balcony above, all the effects in the hall were irregular and informal; there were no straight paths, but it seemed a maze of the fleecy blossoms—a zig-zag of patterns—a crazy quilt of colour and confused devices. One of the best features of the Exhibition was the entire transformation of the hall by the changing about of the plants. A rearrangement of the foliage plants was the first move made. They were taken from their massing and placed singly among the Chrysanthemums, or in small groups; the effect was to heighten and add a fantastic grace. When the Judges had made their decisions and there was no longer a need for keeping the classes of plants together, the competitive arrangement was changed to a grand ornamental display. All the golden Chrysanthemums were massed in the centre of the hall. The amaranth-tinted ones were put together, and so were the whites, the crimsons, and the red-and-yellow variegated lot that looked like burning bushes, so flame-tipped were the petals. The electric lights were lowered, so they rested like meteors among the plants; an exquisite effect was made with a *Dracæna Draco* lifted above white flowers, with a ball of light which seemed tossed up from its fountain-like leaves. The blooms of the Mrs. Grover Cleveland seedling, which were extraordinarily beautiful, were flooded with light, rising as these did in the centre of the hall.

The stages which were erected so that the plants placed upon them presented inclined planes of bloom, were defined by the needle-like Irish Junipers, which, as they pierced the field of flowers, were sharply effective. Count de Germiny in bush and standard, President Cleveland, Gloriosum, Gluck, Belle Paule, Gloire Rayonnante, Eugene Lanjault, Pink of Perfection, Madame Croisette, John Thorpe, jun., Fair Marguerite, Fleur de Marie, Salomon, Lord Wolseley, Incarnation, and many other plants and blossoms, excited the admiration of the crowds that passed the plants or leaned over the tables where the cut flowers were placed. The Pompons, Othello, Lucretia, and Mrs. Hazlet were prominent in their type, and old "Bob" never looked more brilliant. Among the maroon flowers Etienne Celli, Black Douglas, Robert Wolcott, and Hon. John Welsh received a large share of praise. George Sand, in the Anemone-flowered type, was conspicuously beautiful.

The choicest standard plants and the new Japanese seedlings were arranged in the Japanese garden, where there were two bamboo summer houses profusely hung with curios—fans, parasols, umbrellas, scrolls, and panels. Blooming plants were twined in and out of these structures, and each side of them were quantities of cut flowers, baskets richly filled with bloom, and pots of growth on which but one flower had been brought out. The latter flowers were of enormous size and remarkable shapes and colours. Most of them were named after Japanese celebrities. A native Japanese sat in each summerhouse, where he painted fans and screens, which were sold at reasonable prices.

A "grandmother's garden" was one of the features of the Exhibition, and served as a centre where the contrast between a tangle of neglected growth, such as was usually the rule in the old-fashioned garden, and the wealth of carefully trained specimens, could be considered. The variety of plants in the little nook devoted to Artemisias and Dianthus were extremely limited; but the sprawling, unkempt growth was enticing, as are all the loose, grassy arrangements of either plantsman or florist.

There were but few entries of designs in response to the prizes offered by the wholesale florist. Three screens and one, I believe, "table" design—whatever the latter was intended for. It was a complication of golden flowers and golden fish, at which I must draw the line of all criticism. There were two screens, one of four, and the other with three panels. These were very elaborately woven into patterns of Greek designs and landscapes of Japanese scenes with great cleverness and finish. In relief upon them were oaken boughs and flocking birds, and female figures most effectively

applied. This work was done by A. Le Mout, always a man of ideas. He took the grand and special prize, while C. Thorley received the second prize for a screen that was ingeniously scattered over with Vines blooming with Chrysanthemums, the stems of which here and there were plunged in antique pitchers fastened to the panels by sashes of satin.

The pitcher prize, a silver cup, was awarded to Richard Brett, who also took prize A, "by a Member." B, the W. S. Allen prize, to A. Le Mout first, and J. E. Thorley second. D, combination prize, to A. Le Mout.

In the entries for seedlings the following were awarded certificates of merit:—Jas. R. Pitcher for seedling, John Thorpe; E. M. Allen for Mrs. Ackers' Allen; Hallock and Thorpe for Japanese seedlings, Count Zbrowski, Mrs. Grover Cleveland, Prince Komisky, and Success.

The exhibitors were Hallock & Thorpe, Queens, L. I.; Julius Scharff, Floral Park, Queens, L. I.; Walter Coles, Claymont, Del.; Richard Brett, Short Hills, N. J.; Geo. Matthews, G eat Neck, L. I.; Peter Henderson, 35, Cortlandt Street, N. Y.; E. M. Allen, 356, Pearl Street, N. Y.; Thos. H. Spaulding, Orange, N. J.; John Dallas, Fairfield, Conn.; W. C. Wilson, Astoria, L. I.; A. Le Mout, 174, Broadway, N. Y.; J. E. Thorley, 343, Broadway, N. Y.—(*The American Florist*.)

PLANTING ROSES.

ROSES often fail to do satisfactorily because planting is delayed until late in the season, and the trying weather and cutting winds of March tell upon them to such an extent that puny growth in some cases, and death in others, result. The season for planting has now arrived, and it may be well to draw attention at this period to the importance of early planting if good growth and fairly fine flowers are to be produced next summer.

Planting in early autumn is sometimes delayed by over-pressure of work in other departments, but more generally perhaps through procrastination. When time is lost early in the season ungenial weather stops the preparation of the ground, or heavy rains render it unsuitable for planting. Frost often delays the operation, and the plants if received, which is frequently the case, are laid in for weeks, and it may be for months. This is no advantage to the Roses, and to get them in they are planted when the ground is in an unfit state. It is much better to allow them to remain heeled in than to plant them when the soil is saturated. I am more than ever convinced that planting, say in the early part of November, is preferable to planting during any other month of the season. I do not say that Roses planted during the following month will not do well, for I have proved the contrary, if they could be got in when the soil was in a suitable condition. But delays are dangerous. I remember a few years ago that Roses arrived in November, and the ground not being ready could not be planted before the end of January or some time during that month, and then the soil was not in good condition, and the Roses were never satisfactory until they were lifted and replanted.

Some may think it too early to prepare the ground for this purpose, but such is not the case, and those who practise it will soon discover that the work usually done during the winter has been wonderfully advanced by having the ground made ready early in the season. Planting one hundred or even a thousand Roses does not occupy very much time, but the preparation of the ground for them is a more serious matter.

The position selected for Roses should be as open as possible, so that every ray of sunlight will be able to reach the plants, and where abundance of air will play freely amongst their branches. In order to provide shelter for Roses many grave mistakes have been made, and the beds or Rose garden made too near large trees, the roots of which have entered the soil provided for the Roses and quickly robbed it of its fertility. Roses should not be planted in the vicinity of large forest trees, for their roots travel often further than many suppose, and in a season or two result in the Roses doing unsatisfactorily. It is much better to plant Roses in an exposed position than select such places for them, for they can endure wind and exposure much better than poverty of soil. This is not all, for such shelter robs the plants of air, which is essential to their well-being. Shelter is certainly advantageous if it can be provided without excluding air and sunshine, or robbing the plants of food by the extension of the roots of trees. Evergreens, the roots of which do not extend far, are preferable to trees for providing shelter.

The site selected should also be well drained, so that superfluous water will pass away, for although Roses should never be dry at their roots they cannot endure to have them in soil that is too wet during the greater part of the year. Drainage not only renders the soil drier but warmer and more fertile than land that has not been drained. All soils do not need artificial drainage, for the subsoil is often of a porous nature. On a formation of sandstone or gravel drainage is an evil. Excessive draining must be avoided, for during a spell of dry weather the plants suffer at their roots and soon become a prey to mildew. It is only a waste of time on heavy soils to dig out the beds or borders for the purpose of placing in brickbats for drainage. Such holes prove only to be receptacles for water, unless pipes are laid to carry the superabundance of water that may be collected to some outlet. I remember once lifting some Roses that had been planted two or three years before on this principle, and the drainage was full of water.

Roses dislike a shallow soil, and seldom grow with luxuriance. They grow and do much better on shallow tenacious soils than they do on light sandy or gravelly ones. However, on heavy soils the root run should be as deep as possible. On light soils, when of a shallow nature, some of the subsoil may with advantage be removed to a depth of 18 inches, or even 2 feet, and filled with fertile soil of a suitable nature. When this is done there is much greater prospect of the plants doing satisfactorily than if they were planted in the shallow soil. Those who have practised only on

a deep fertile soil have no conception of the difficulties of others who have to deal with soils only a few inches deep. Probably in more than half the gardens here devoted to pleasure grounds the depth of fertile soil does not exceed 6 inches, yet Roses may be said to do well, but the soil has been deepened by the removal of the red and black hungry sand that underlies the surface, fresh soil being added.

When the soil is light and poor very heavy dressings of decayed manure must be added. On such soils Roses require a much greater quantity of manure than many people suppose. Heavy tenacious land may be rendered sour by the addition of too much manure, but light soils will stand almost any quantity. To very poor land nearly one-third of manure may be added without doing harm, but the reverse, but on moderately fertile loams about one-seventh will prove ample. Upon the former very liberal applications of manure will be needed to grow Brussels Sprouts to perfection, and if the amount for them can be estimated no less should be used for Roses, but rather more. Soils vary so much in fertility and texture that it would be impossible to lay down any hard-and-fast rules for applying manure. Rather, however, than incorporate a third of manure with the natural soil I should prefer to mix it with equal quantities of fibry loam if it could be obtained in the neighbourhood, selecting the heaviest I could procure. To this would be added bonemeal and half-inch bones at the rate of a 6-inch potful to each barrowful of soil, and about one-seventh of manure. However, if this could not be done, rather than employ too much manure in the soil when preparing the beds, to be washed away by autumn and winter rains into the sub-soil beyond the reach of the roots, I should prefer to use the bones, a fair quantity of manure, and make up the deficiency by mulching in early spring with moderately fresh cow manure. To render poor shallow soils thoroughly fertile without a certain amount of waste in early autumn is more difficult than is the case with land of a heavier nature. In light soils much of the manure will be washed away before the roots have a chance of taking possession of them. I do not like digging in manure on light land in autumn, because the loss is great, and how to avoid this I have failed to discover when preparing it early for Roses. The loss can only be made up by heavy mulchings on the surface in spring.

After the ground has once been rendered fertile manure can be applied in spring to the surface in the form of a mulching, and then no waste will be occasioned; but, in spite of the little apparent waste that may follow the preparation of the beds at this season, it is more than counter-balanced by the luxuriant growth of the plants the following season than would be the case if the beds and borders were made ready later in the season, and planting delayed in consequence.—W. B.

POTATO TRICENTENARY EXHIBITION AND CONGRESS

DECEMBER 1ST TO 4TH.

To celebrate the third centenary of the introduction of the Potato it was proposed early in the present year that the International Show hitherto held at the Crystal Palace should be extended, and departments be devoted to the literature of Potato history. Owing to the collapse of the International Show the proposition was for some time in abeyance, but was subsequently revived by Mr. W. E. Wood, and a competitive exhibition of Potatoes, together with an exhibition of books, engravings, &c., connected with the subject, and a conference on interesting topics relative to this important tuber was organised to be held in St. Stephen's Hall, Westminster. No money prizes were offered, and there was only one class, gold, silver, and bronze medals constituting the prizes. Each exhibit was to comprise not less than six nor more than twelve varieties of Potatoes, and with these there were about thirty competitors, the majority showing twelve varieties, two dishes of each. The gold medal was awarded to Mr. E. Chopping, Periwinkle Mills, Milton, Sittingbourne, who had even, clean, handsome tubers of White Elephant, Chancellor, Reading Russet, Reading Ruby, Village Blacksmith, Rufus, Sutton's Abundance, Purple Perfection, The Belle, The Colonel, Adirondack, and Schoolmaster. The silver medal was obtained by Mr. Joseph H. Diver, Pitshill, Petworth, for good specimens of Washington Hero, International, Mr. Bresee, Vicar of Laleham, White Elephant, Snowflake, The Dean, Reading Giant, Adirondack, Schoolmaster, Purple Edgote, Reading Russet. The bronze medal was adjudged to Mr. W. Kerr, Dargavel, Dumfries, N.B., for tubers very close in merit to the preceding, and representing White Elephant, Village Blacksmith, Eclipse, Adirondack, Chancellor, Queen of the Valley, Schoolmaster, Mr. Bresee, Snowdrop, Vicar of Laleham, and International. Two collections from Mr. J. Hughes, Eydon Hall, Byfield, and one from Mr. E. S. Wiles, Edgote, Banbury, were highly commended. Non-competing collections are contributed by Messrs. Hooper & Co., Covent Garden, who also have an Irish Potato spade and a photograph of Raleigh's house at Youghall, County Cork. MM. Vilmorin & Cie., Paris, show a collection of Potatoes, and Mr. John Watkins, Pomona Farm, Hereford, has numerous varieties of Potatoes.

The literature department comprises a number of the old Herbals and works on geography or the travels of the early navigators, including references to the Potato as it was first observed in America. Old maps, plans, photographs, &c., are also included, many of a highly interesting character. It is announced that papers will be read on various subjects connected with the history and culture of the Potato on Thursday, Friday, and Saturday, to be followed on each occasion by a discussion, that on Friday night being specially reserved for a consideration of the railway charges in the conveyance of Potatoes to market towns.

ROSE GLOIRE DE DIJON.

THE majority of your readers know this Rose well, and I need say little in introducing it, but I would like to ask many of them if they

think they grow it in sufficient quantity. I am inclined to think if its many excellent qualities are taken into consideration the reply will be in the negative, and the present is a good time to consider the matter with the view of introducing more. As a long and constant bloomer the "Gloire" is unique. Its first blossoms open almost as soon in the open as they do in a greenhouse. Here on a south wall it begins to bloom early in April, and never ceases until November, the large buff blooms being both showy and delightfully fragrant. In the latter respect they are not surpassed by any other Rose, and it is impossible to have too many of them. They are suitable for all kinds of choice decoration, and perhaps they are never more pleasing than when a quantity of them are arranged by themselves in a dish or glass. In this way they are peculiarly artistic, and in drawing rooms or cottage windows, or indeed anywhere, they are most attractive. They are never out of place, and a dinner table decorated with "Gloire" blossoms and leaves and nothing else is delightful.

It is impossible to make a mistake in planting them, as they grow freely as climbers on walls, arbours, hedges, against churches, mansions, cottages, and in short everywhere, and never fail to make a great deal of wood and flower profusely. They succeed, too, as bushes in borders and beds, but not so well as they do climbing; and in localities where soil and climate are unfavourable to the growth of Roses the "Gloire" is the one above all others to plant, as it has a fine constitution. The present is a good time to plant it, and with a deep rich soil to work in, it will grow away freely next spring and bloom throughout the whole summer. Some Roses will only grow on a certain stock, and others will barely succeed on anything, but my experience of the one in question leads me to say it will succeed on any or every kind of stock on which Roses have been tried.—J. M.



KITCHEN GARDEN.

FORCING VEGETABLES.—The Rhubarb we recommended to be covered up four weeks ago has now produced many fine growths that are now be so much valued as in seasons when the Apples are scarce, but for all ready for use. As Apples are plentiful with us the Rhubarb may not that Rhubarb tarts and Rhubarb cream are delicacies in December. Some more roots should be covered. Two or three may be enough to cover at once in most cases. A small quantity of hot material will soon induce growth, and if the heat is declining in the manure that was placed on some time ago, take it off, mix with a quantity of fresh material, and place it back against the box or cask which covers the Rhubarb. The first batch of Asparagus is also ready for cutting, and as the roots will only give a supply for about a fortnight, others should be put in for cutting at Christmas. A bottom heat of 70° or 75° will soon induce strong growth. The Seakale does not move so fast as the above two roots, and it will be some weeks before the first heads are ready for cutting, but as other vegetables are still plentiful we are in no hurry to cut Seakale. Sow Mustard and Cress weekly in small quantities. Keep a temperature of 70° for French Beans, but they are most difficult to grow at this season, and since we found that Runner Beans sowed in September give so much satisfaction in December and January, we have almost ceased to force Beans in those months.

MUSHROOMS.—For some weeks past we have been gathering quantities daily from beds in cool sheds. Our first idea of this system was gained from Wright's "Mushrooms for the Million," and the plan has answered so admirably that we now practise no other in the winter months. The Mushrooms invariably appear within six weeks of the time of spawning. The beds bear an uncommonly long time, as they are neither excited with intense heat nor checked by severe cold, and the quality of the Mushrooms is first-rate, as they grow in quite a natural way. Beds may still be formed in any shed or outhouse; indeed they may be made up in succession from now until March. Little beds 4 or 5 feet in length and 3 feet in width furnish many dishes, and a succession of small beds will be found more satisfactory than a large one, or two formed at long intervals. As the weather becomes colder, increase the covering of hay on the surface, and during severe frost this may be about 1 foot in thickness. Those who grow their Mushrooms in special houses should see that a succession is kept up, and the temperature should not exceed 65°. A very dry atmosphere is not favourable to the growth of Mushrooms, and moisture must always be kept in the air in a moderate degree. Steam is injurious to them, and should never be created. When the beds become so dry on the surface that the Mushrooms cease to appear, a watering on the surface will generally bring a new crop. As the water does not penetrate freely, the surface must be sprinkled every half hour until it has become quite wet for a few inches down, and the water be heated to 85° or 90°. Where woodlice or any other vermin are troublesome place down saucers of treacle to trap them. Many cooks are particularly fond of "button" Mushrooms. This is the term applied to them when quite small and before they have opened, but we do not agree with the use of buttons to any great extent, as the Mushrooms become so

much more bulky when left until they are three parts developed, and when cut small and young they do not possess that distinct flavour so conspicuous and valuable in good Mushrooms.

HOTBEDS.—These are most valuable to the vegetable grower, and in the early spring months it is almost impossible to get on without them. They are excellent for raising all early vegetables, and care should be taken that a quantity of material for their formation is always provided. The best materials for making them are stable manure in a littersy state, and the leaves of trees and old vegetables. It may be a little too early yet to rake the beds, but it is not too soon to collect the material, and a quantity should be placed in a heap ready for use. It may be mixed and turned twice weekly during the next fortnight or three weeks.

CAULIFLOWER PLANTS.—Since the very early Cauliflowers were introduced we have not been quite so particular about having a large quantity of autumn plants, as those raised in spring are ready for use almost as soon as any that are kept over the winter. Yet the old plan of sowing in autumn and keeping the plants in frames or under handlights in winter is a good one, and we would not like to give it up altogether. Those planted in the frames some time ago are now growing freely, and may be very freely ventilated day and night when the weather is mild. The tops may be taken off the handlights during the day when the plants have become established, and on no account should they be kept close, as this will soon make them so tender that many of them will perish before the winter is over. Late plants may still be lifted and placed under cover, and any which are left out should be protected during frost or snow.

WINTER PROTECTORS.—Now that December is here, and the shortest days are at hand, frost, snow, and cold weather generally may be expected, and everything should be ready to protect crops which will not bear exposure. Hoops, mats, straw, hay, fern, and any material of this sort will all be found most useful for covering Celery, Lettuce, Endive, Parsley, roots, &c., and the secret of successful protecting is not to put it on until it is wanted, keep it on as long as necessary, and move it immediately it is no longer required.

VEITCH'S SELF-PROTECTING BROCCOLI.—This is a gem in December. It is now coming in as freely as Cauliflowers in July; the heads are medium in size, compact, excellent in quality, and always acceptable in the kitchen. It should be grown by everyone who uses vegetables in December. Turn the leaves down over the small heads to protect them from frost, and cut them all as soon as they are 5 inches or 6 inches across. If trimmed and the end of the stem be put in damp sand in a cool place they will keep fresh for three or four weeks.

SAVOYS.—These are indispensable vegetables at this season. They are extremely hardy, and never fail to prove useful where the soil is rich enough to grow them. The Drumhead is a large variety, and finds favour with some on this account, but it is very coarse and unfit for a good dinner-table. In this respect we find the small ones always in demand, and amongst these Webb's Little Wonder merits special mention. It may be grown 15 inches apart each way, when the firm heads will almost touch each other, and when sent to the table they form such a delicious dish that they will be accepted freely when the larger-growing varieties and others of inferior quality would be rejected.

FRUIT FORCING.

FIGS.—Earliest Trees in Pots.—A commencement should be made without delay to insure ripe fruit at the end of April or early in May. The trees, if not started, must be again dressed with an insecticide, care being taken not to rub off the young fruit. Place the trees in a mild bottom heat, the pots being on pillars of loose brickwork, so that they will not settle with the fermenting material. The heat about the pots must not exceed 65° until the trees are fairly in growth, whilst the top heat may be 50° to 55° at night, and 65° by day, the trees and house being damped in the morning of fine days and again early in the afternoon; but it must be done sufficiently early to allow of the trees getting fairly dry before night. Water must be given at the roots to keep the soil thoroughly moist, and not less in temperature than that of the fermenting material about the pots.

Planted-out Trees.—When the foliage has fallen the trees should be pruned. Shoots which have attained the limit of the trellis must be cut back to where the succeeding shoots start, in order that they may occupy their places in the ensuing season. Cut away entirely all elongated spurs, reserving, however, as may be desirable, a few of those which are short-jointed and fruitful. The trees after pruning should be loosened from the trellis; and after thoroughly cleansing the woodwork with soap and water, the glass with clear water, and the walls limewashed, adding a little sulphur, wash the trees with soapy water with a brush and afterwards with some insecticide, avoiding pigments that leave a thick deposit upon the shoots, and when this is completed tie the trees to the trellis, not too tightly. If the trees have not been lifted lightly point the border over, the loose material being removed, and a top-dressing about 3 inches thick given of short partially decayed manure. The houses can hardly be too freely ventilated, only when frost prevails they must be closed.

PEACHES AND NECTARINES.—Earliest House.—Since the introduction of very early Peaches forcing has been considerably facilitated. Alexander and Waterloo, both of good size and high colour, ripen fully four and not unfrequently six weeks in advance of Royal George, the surest and most extensive forced kind, the two first being also considerably in advance of Hale's Early, which had to some extent superseded Royal George for early forcing, in fact is planted in the same house so as to have a succession. Early Beatrice precedes Hale's Early in ripening a fortnight or three weeks, and is about equal with Alexander and Waterloo

in respect of earliness, but is very much smaller, but bright in colour, and forces remarkably well. Early Louise and Early Rivers are liable to crack at the stone and be worthless. This is considered to be due to imperfect impregnation, and pollen is advised to be taken from other varieties and applied to the stigmas of Early Louise and Early Rivers, which necessitates growing varieties in the same house that do not ripen simultaneously. All except Early Louise and Royal George have large flowers, the pistils being considerably longer than the stamens, and it is considered on this account that Early Rivers splits at the stone, and the others do not set satisfactorily when subjected to early forcing. In the face of this we have to place Early Beatrice and Hale's Early, both with large flowers that set freely, though neither is remarkably prolific of pollen. Early York, which clearly is of the Royal George race in part and Grosse Mignonne of the other, is also subject to over-development of the huds, and we are driven to the conclusion that no Peaches of the Noblesse or paler coloured fruit of the Grosse Mignonne race are suitable for very early forcing. By forcing the huds are perfected in the dog days, and are hurried, whereas our experience points to their requiring time, and no lack of aliment, and as such are not suitable for early forcing in houses having fixed roofs. When the roof lights are moveable, so that the trees can be exposed after the fruit is ripe and the trees hardened, there is less danger of over-development of the huds; in fact, they retain the huds and develop perfect blossoms. Apart from those considerations our experience justifies our not advising the starting of any Peaches with large flowers and a pale coloured skin before January, and then bring them forward very gradually.

The introduction of the very early Peaches has completely revolutionised forcing. Such varieties as Early Beatrice ripen in advance of Hale's Early by a fortnight or three weeks, and four to six weeks ahead of Royal George. Instead of commencing forcing operations in early December where the houses are planted with such kinds as Hale's Early and Royal George to have ripe fruit in May and early June, houses planted with Alexander and Waterloo need not be started until the new year to have fruit ripe at the same time. There is a clear gain of a month. With the early house planted with such varieties as Early Beatrice, Alexander, and Waterloo, forcing commenced early in December will afford ripe fruit at the end of April; with Hale's Early and Royal George the fruit will not be ripe before the middle of May and after. We are aware that Alexander and Early Beatrice have been ripened at the end of April from the new year as a starting point. If fruit is wanted in April or early May with certainty, commence forcing with the very earliest varieties in early December; if later varieties obtain (and they are superior in quality to the very early sorts), for fruit to be ripe in May, forcing must commence at the same time, so that we must be ruled by that we have to work.

The earliest house having been closed as advised, fire heat should now be applied. The night temperature should not exceed 50° in the mildest weather without free ventilation and not from fire heat, only using it to afford a night temperature of 40° to 45°, 50° by day in sharp weather, and 55° in mild, with 65° from sun, the best results being obtained by gentle excitement in the early stages. Admit air at 50°, and increase it with the sun heat, having it full at 65°. Syringe the trees and every available surface morning and afternoon until the bloom buds are showing colour, after which syringing the trees must be discontinued, but the sprinkling of the house, walls, and paths continued as before. Avoid a close atmosphere, admitting a little air at the top of the house to prevent moisture being condensed by the glass. The inside borders will require to be watered with water slightly warmer than the mean of the house, making sure that every part of the soil is properly moistened. Outside borders will be benefited by lights or shutters to throw off heavy rains and snow in addition to a covering of bracken or litter.

CUCUMBERS.—Most failures with winter-fruiting Cucumbers is attributable to a deficiency of heating surface. Cold weather necessitates sharp firing, which where there is little piping dries the atmosphere more than is good for the foliage, the fruits becoming stunted and swelling indifferently, and where the pipes are in close proximity to the roots the soil is dried too much for healthy growth. One of the greatest evils in all houses requiring to be kept at a high temperature is too little heating surface, the water in the pipes requiring to be kept up to near boiling point, which is very inimical to vegetation and highly wasteful of fuel. Be careful in giving air, affording it, however, whenever a favourable opportunity offers, but excluding it when the external air is sharp and cold. In bright but cold weather turn off the top heat when the sun is powerful and likely to raise the temperature beyond 80°; in such weather damp the house morning and afternoon, closing early. Care must be exercised in damping so as not to wet the embryo fruit, or they will damp off. Water will be required at the roots about twice a week. A temperature of 60° to 65° at night is suitable, and 70° to 75° by day.

The winter fruiters or plants from the August sowing, and planted out in September, will have grown to the extent of the trellis, or nearly so. Unless there is undue vigour in the plants they should not be allowed to fruit for a few weeks. Attend frequently to stopping and thinning, also tying the shoots, avoiding overcrowding and overcropping as the two greatest evils. Sublime canker with quicklime rubbed well into the affected parts. Remove decayed and had leaves promptly. If mildew appears dust with flowers of sulphur. Aphides are best overcome by moderate fumigation on consecutive evenings.

THE FLOWER GARDEN AND PLEASURE GROUNDS.

Roses on their own Roots.—These, unfortunately cannot be bought, or otherwise we should plant no worked Roses on our heavy land. If

well-ripened lengths of this season's growth are available these ought to be at once made into cuttings, and with very little trouble will in most instances strike root readily. We make and dibble out the cuttings much the same as we would Currants or Gooseberry cuttings. Preference is given to medium-sized shoots, which are cut into 1-foot lengths, cutting clean across below a joint, and trimming off thorns and buds from the lower half. Directly they are made, or before they have become dry and shrivelled (this being fatal), they are dibbled in firmly to half their depth in a good open position. The rows may be about 18 inches apart, and the cuttings 9 inches asunder in the row. Many dispose them much more thickly; but they are not wise in so doing, as the majority are almost certain to rot, and during the summer crowd and spoil each other, whereas if given plenty of room they will frequently form strong flowering plants the same season, and may be transplanted much better later on. We find they do better when some old Mushroom-bed manure and road grit is mixed in the surface soil, and they also lift more readily from ground thus treated. A mulching of short manure, cocoanut fibre, or ashes serves to protect the cuttings during the winter, and prevents upheaval by frost. Some seasons the strong well-ripened shoots obtained from pot plants strike more surely, but there ought to be no difficulty experienced this year in procuring plenty of suitable cuttings from those in the open ground. Own-root Roses usually grow more strongly and last much longer than do those worked on either the Manetti or Briar stocks. But all the varieties worth cultivating are not easily struck, the worst in this respect being those with most thorns. Such comparatively thornless varieties as Countess of Oxford and John Hopper strike like weeds, and there are many more nearly as accommodating in habit.

Lifting and Storing Flower Roots.—At the present time (November 3rd) Dahlias are uninjured by frost and are still quite gay. Any night, however, may see them cut down; and before a very severe frost is experienced, and which we may have at any time, they ought to be cut down to within 9 inches of their roots, lifted, dried, and stored in a dry cool shed or room where they can be protected from severe frost. A little light nearly dry material disposed about the roots serves to keep them from shrivelling, but there is not much need for this unless they are necessarily stored in a rather airy or dry place. The tuberous *Salvia patens* is best stored in boxes of moderately moist soil, and placed in a potting shed or other not too dry position out of reach of frost. The favourite place with many for storing tuberous or bulbous plants is under a greenhouse staging; but here the drip frequently rots a good many of them, and those that survive are apt to start into growth too early in the year. Even the strong clumps of *Cannas* are best stored in a cool dry cellar, or a well protected outhouse. Sufficient soil may be left about the roots to prevent dry rot. Tuberous *Begonias* must also be lifted directly their tops are damaged (at present they are still blooming freely), all damaged portions and part of the stems being cut away, and may then be packed closely in boxes of light moderately dry soil. A little soil should be left on each root, and this will serve to keep them plump. The boxes may be stored in a dry shed, or anywhere out of drip, care being taken to protect them from severe frosts. The old stems and the long fleshy roots of *Verbena venosa*, every little piece of which can be grown into a plant next spring, may be packed closely in boxes of moist soil, and be wintered in frames or fruit houses. They are nearly or quite hardy, but as they must in most cases be lifted from the flower beds it is advisable to be certain of as many as are wanted. We also prefer to lift a good many strong clumps of the herbaceous *Lobelias*, and these stored in boxes and wintered in cold frames are handy for division in the spring. They are very effective in masses among the bedding plants as well as in the borders. Choice *Hollyhocks* ought not to be left in the open ground, or the stock may easily be lost. Besides, young plants are always best, and if the old stools are lifted, packed in boxes of good soil, and wintered in frames, they may be placed in gentle heat early in the year, and will then afford a number of cuttings. These may easily be rooted in bottom heat, making strong flowering plants the same season. The commoner sorts of *Gladioli* are frequently best left in the open ground, a slight mulching of litter, leaf soil, or ashes serving to protect them from severe frosts. As a rule, all are best lifted early in November, and after being dried store in sand or dry soil, or wrap singly in paper. The tiny offsets formed round the old corms must be mixed with fine soil, or they will perish before planting time. All should be wintered in a cool dry position, care being taken to shelter them from severe frosts.

THE BEE-KEEPER.

MANIPULATING STOCKS.

THERE are certain times when it is absolutely necessary to manipulate stocks in order to obtain the best results; and although the tendency of the age is to increase the labour attendant upon keeping bees by continued and unnecessary interference at all seasons of the year, it may be well to point out briefly, for the benefit of those who have in the past experienced difficulty in subduing and handling bees, how they may in the future with tolerable certainty avoid the mistakes they have made in the past, and so insure success in the coming year. Before, however, doing so it is necessary to consider whether smoke or carbolic acid is the most preferable agent to use for bringing a stock into subjection, and so enabling the bee-keeper not only to

handle the bees with pleasure and comparative immunity from stings, but also whether smoke or carbolic acid is more transient in its effects on the bees themselves.

The value of carbolic acid has long been recognised by apiarians. For we find a description of a fumigator—to all intents and purposes identical with a “new one” just invented—so early as 1869, and possibly it may have existed for some years previous to the date of the article in the *Journal of Horticulture* for September 2nd, 1869, page 188, from which the following extract is culled—“I do not know,” says the writer, “of a more useful auxiliary in the apiary than carbolic acid. It is cheap, costing only 6d. a phial, and it is one of the best disinfectants. As ingeniously used by ‘Apicola’ on a piece of sponge inserted in a fumigator and blown through with the breath or pair of bellows, it answers nearly all the purposes of smoke.” In the same year carbolic acid had been applied with success for the prevention of robbing. In the article from which the above extract is taken it is also written—“Early in the morning, or as soon as the Corsair bees are on the raid, dip a feather in carbolic acid and wet the entrance of the assailed hives all round, pouring at the same time a few drops on the landing. Repeat the dose during the day as the odour passes off. If properly managed the inmates will remain at home ventilating, whilst not a single robber dare cross the threshold. It is even desirable that some of the robber bees should wet their feet in the acid, that on returning to their own hives they may spread consternation at home. If robbers are in possession of the hive, lift it up and pour a little of the acid on the middle of the floorboard, and then replace the hive, and the robbers will decamp.” It is, however, very bad management to allow a particle of the acid to touch the bees themselves, and any careless application of the acid within the hives may be attended with serious ill consequences, and the whole stock may by the nauseous fumes arising be compelled to decamp in order to escape from the effects of the ill-judged use of a powerful aid to the bee-keeper, especially in the management of vicious stocks.

For clearing sections and sectional supers, as pointed out in a former issue by “A Lanarkshire Bee-keeper,” the acid is wonderfully effective, and should be used by all who desire to do the work of the apiary with all speed and with as little inconvenience to the bees themselves as possible. Here is, I believe, one great point in favour of using carbolic acid instead of smoke, for the effect of the former passes away almost immediately, while the smoke hangs about to the great discomfort of the bees for a very considerable time.

There is a danger of using so strong an agent far too freely; it must be used with caution and common sense. It is impossible to give any very detailed advice as to the quantity required and of the strength which must be used, but experience will show each individual far better than I can tell him how much of the vapour arising from the acid is necessary for bringing a stock into a peaceable frame of mind. It is wiser to err on the safe side, and to use too little rather than too much.

A fumigator is not at all necessary, but it may be useful, and those who wish to do so may easily convert their smoker into one of the so-called “new” fumigators. I do not advise them to do so, for they will find cases occasionally in which smoke will be of greater use than the acid. Strips of paper soaked in carbolic and allowed to dry are alone necessary for clearing supers, and they may be used with success in many other operations in the apiary. Perhaps the greatest advantage that carbolic has over smoke is, that it is always ready and does not need a constant refilling, while there is no trouble in lighting it as in the ordinary fumigator. Bees are in most cases cowed by it, but some colonies having more than usual determination will no more be subdued by the acid than by smoke. I will now, after this somewhat long discussion of the varied advantages of the two different agents at present in use in our apiaries, very briefly refer to a passage in the first part of Mr. Cheshire's second volume of “Bees and Bee-keeping,” in which he says, after quoting the general idea, that “A honey bee, when filled with honey, never volunteers an attack, but acts solely on the defensive;” that “Bees, when terror-struck, rush to fill themselves at their stores, and are then harmless, not because they are filled, but because terror-struck. Their gorging is the result of their submission, not the converse.”

Now it is with some diffidence that I express an opinion to the contrary of what Mr. Cheshire, who is one of our greatest authorities on the scientific aspect of bees and bee-keeping, but I do not think that this is a statement of fact, for if a hive without any stores is first smoked and then manipulated, the result is, as far as my experience goes, very contrary to what might have been expected in view of the above statement. I am inclined to believe that Mr. Cheshire, in manipulating a stock when no stores are in reach of the bees, might experience a very real and practical result by reason of the bees not having the means to gorge. If the bees are smoked into stupidity, well and good; but given two stocks of bees of identical temperament—the one with stores, the other with none—and the

same quantity of smoke made use of, the relation of cause and effect will soon be made sufficiently clear to take away any reasonable doubts as to whether it is the smoke which terrifies the bees into submission, or whether the smoke, by terrifying the bees and causing them to gorge, makes them not only less able, because they cannot move so freely, but also less ready—although at all times perfectly capable—to use their sting to resent the unwelcome intrusion of the manipulator. We may now pass on, after having considered the means of subduing a stock, to consider the method of applying these means to effect the purpose for which they are required; and I may say at once that whenever the word “smoke” occurs “carbolic acid” may be substituted by those who prefer to use the latter in their manipulations rather than the former.

Most bee-keepers have at one time or another experienced some little difficulty in handling their bees. Some possibly even now are not fully competent to manipulate a hive, and to these perhaps the few hints here given may be acceptable, so that on a future attempt being made a more successful result will follow their operations. A very common fault is to give so much smoke as almost to suffocate the bees. Now this is really far from humane, and it is not only most injurious to the bees themselves, but naturally lessens the labour done in the next few days, and as a result the profit. Sufficient smoke must be used to cause the bees to fill themselves, but no more. Every puff of smoke injected after the bees are busily engaged in gorging is not only useless but actually injurious. During every manipulation the smoker must be kept lighted, and if necessary, and the manipulation is a lengthy one, a little more smoke must occasionally be used to keep the bees in a due state of subjection. How much smoke is required can only be learnt by experience, but too little had better be used rather than too much. Some stocks are much more difficult to subdue than others apparently the same in every respect, so that no hard-and-fast rule can possibly be laid down. The only sure guide is to listen, and when the song of content is heard the end has been achieved, and the bee-keeper may proceed to perform any operation that it may be necessary for him to effect. It is not uncommon to hear of volumes of smoke being injected into a hive, and the bees still rushing out in fury against the operator. This rarely happens in a stock with honey or syrup in store, but in any case it may be caused by ignorance, for in many instances much less smoke would have been sufficient to completely subdue the stock had time been allowed to elapse before any attempt to manipulate was made. Let the bees gorge, then manipulate.

In taking out and replacing frames much depends upon the accuracy of the measurements of the hive. The regularity of the combs, and the frames being of exactly the right size—all hives should have at least one division board—one at each end is better still—for by this convenience operations are much facilitated, because the division board being first removed a space is left, and the frame next to such space may be very easily moved; sufficient room being given, and there being no danger of crushing bees or breaking any comb, which sometimes ensues when frames are packed and no space is allowed for a lateral movement. Each frame may be carefully lifted out and examined, and if the combs are not very heavy and not newly built, the bees may be dislodged by a quick movement, and so shaken into the hive; they may also in all cases be brushed from the combs with a feather or wing, but care must be taken to brush from the top of the comb to the bottom, otherwise the bees will be much enraged and attack the operator. If the queen is to be removed or to be discovered, very little smoke must be used, and each comb be searched in turn, when she may generally be found; if she is not on the combs the corners of the hive are often the place to which she flies for refuge. The less the bees are disturbed in opening the hive the better the chance of finding the queen without difficulty. If frame hives are badly made there will be much propolisation and consequent difficulty in handling frames; but if measurements are accurate all manipulations may be performed with ease, and it must always be remembered that if any operation is performed with comfort to the bees, it will also be attended with comfort to the manipulator.

The bees of to-day are not so good-tempered as those of days gone by; the change has possibly been wrought by the intermingling of our home bees with foreign races, or by the constant and often ill-judged manipulations to which they are subjected in the more advanced apiaries of this country. Be the reason what it may, the fact remains that, as a rule, bees in the old skeps left to their own devices are generally quiet and not inclined to sting, while those in apiaries managed on a more modern principle are inclined to think that their home is in danger of attack even if the owner approach the hive. In some cases this is due to intermixture of blood, in others to rough handling; but when bees do sting it is either because their hives are actually in danger of being invaded, or because they imagine a danger which does not really exist. By whichever of these causes they are actuated, the result remains the same. The only

remedy seems to be to change the queens, or by quiet gentle handling to give confidence to the bees that man's efforts are for their benefit as well as his own, the two objects being in truth so inextricably bound up together that it is impossible to separate the one from the other.—FELIX.

FEEDING BEES—FOREIGN v. ENGLISH RACES OF BEES

SEEING “Lanarkshire Bee-keeper's” account of his bees having eaten nearly 40 lbs. of honey since August gave me some concern about my own, but on looking into them I find that they all have stores sufficient to last until April, unless several Italian stocks run short, and of these I am doubtful, although all had as nearly the same quantity of food in August as it was possible to give without weighing, like “L. B. K's” stocks, about 40 lbs. each. This strengthens the doubt I have entertained for some time as to the wisdom of supplanting our bees of Britain by foreigners. A little foreign blood does good I believe, but is there not a point, to go past which we may be damaging instead of improving? We want bees that will gather plenty of honey and still keep their strength of numbers up; and is it not possible by breeding from our best queens only as they stand to get such a strain of bees? I have been doing this for some years, and find that the strain of English bees I have been testing are far superior to any foreigners I can hear of. My stocks of this strain have this year yielded close on £100 each, while all the foreigners in my neighbourhood want all they have gathered to winter on and in some cases help in addition.—NOTTS BEE-KEEPER.

NOTES.

UP till the 26th November the weather has been open and fine. The bees carried pollen up till that date, when the winter's fog commenced. Some hives have increased in number of bees greatly during the month. The calm sunny weather, permitting the bees to fly and the young ones to clear themselves of all incumbrances as late as the 25th, will counteract other evils which, had the weather been untoward, were sure to have followed so much late breeding. The temperature of the month has not only been mild but remarkable for the equality of the day and night temperature. For some nights and days together there were only 4° difference in the day and night temperature.

Our snail and slug traps (little heaps of rubbish placed in convenient places) have been frequently inspected, and many of these pests have been killed if not actually exterminated in places near borders containing favourite flowers, so that by these simple but effective contrivances we not only get rid of many pests, but save our flowers as well.—A LANARKSHIRE BEE-KEEPER.

TRADE CATALOGUES RECEIVED.

N. Davis, Lilford Road Nurseries, Camberwell.—*Catalogue of Choice New and Old Chrysanthemums, 1886-7 (Illustrated).*

Caldwell & Sons, Knutsford, Cheshire.—*Trade List of Nursery Stock, 1886-7.*

Alexander E. Campbell, Cove Gardens, Gourrock, N.B.—*Descriptive Catalogue of Choice Hybrid Gladioli for 1886-7.*

Cranston's Nursery and Seed Company, King's Acre, Hereford.—*Short List of Roses.*

Richard Dean, Ranelagh Road, Ealing.—*Special List of Seeds, Potatoes, &c.*

Crompton & Fawkes, Anchor Works, Chelmsford.—*Catalogue of Plans of Horticultural Buildings.*



* * * All correspondence should be directed either to “THE EDITOR” or to “THE PUBLISHER.” Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

Books (Aspiro).—A small work on “British Ferns and Mosses,” is published by Ward & Lock, price 1s. A fuller treatise is Stark's “British Mosses,” published by Routledge, price 5s., or Hobkirk's “Synopsis of British Mosses” (Reeve), price 7s. 6d.

Watering Plants (*H. T. H. and Others*).—Inquiries under this head are fully treated in the leading article of this issue, to which our correspondents are referred for the desired information.

Preparing Tobacco (*W. B.*).—It is not easy to prepare such a small number of leaves so as to be of good quality for smoking. The leaves should hang till they become dry and crisp. The first damp weather after this they become soft, and should be watched to ascertain when this occurs, then pack them in a box evenly, press them down and cover closely to induce a slight fermentation; when this occurs shake them out and repack lightly for a few days, then more closely, and they will soon be ready for use.

Fumes from Hot-water Pipes (*J. B.*).—There is no doubt the black varnish has produced the injurious fumes. The only remedy is to remove the varnish from the surface of the pipes. A strong soda or potash ley might remove some of it, saturated cloths being wrapped about the pipes, but it will be difficult to remove through its having hardened. The best plan will be to take out the pipes, and with some brushwood free them of the varnish by burning. That is really the only effectual remedy. It will entail most trouble and expense, but prove far the cheapest and most satisfactory in the end. We coat our hot-water pipes with lampblack and linseed oil. When dried we have not experienced any disagreeable or injurious fumes.

Boiler for Heating Conservatory (*C. W. B.*).—For general purposes you could not have a better boiler than an improved form of saddle. These boilers will burn anything, and are very simple, easily managed, and very durable. The check end forms are best. They are made in various sizes, and can be had through any horticultural builder or hot-water engineer. Those advertising in our columns would furnish particulars. If the house is small perhaps an upright or conical boiler on the slow combustion principle would be more suitable, but you do not afford any data, therefore we can only give general suggestions.

Constructing and Heating Cucumber Houses (*Florist*).—It would be much the best plan to leave a space of 4½ to 6 feet between the houses for convenience, but it will be more economical to have them together on the ridge-and-furrow principle, as you would save a side wall; besides, they would be much more cheaply heated. You will only need the roof part of glass for growing Cucumbers, and ventilation could be provided at the top of the house: not very much provision need be made unless the house is required for other purposes. Both forms of boiler you name are good, and we have no particular preference for either. The houses can be heated separately or together, it being only a question of valves. The size of pipes you name are too small. They should not be less than 3 inches, and are better 4 inches in diameter. The large size pipes retain the heat much longer than the smaller.

Heating Melon Pit (*G. S.*).—Eight-inch pipes are no use for heating a Melon pit, as they will take up far too much room, especially for top heat. One of the 8-inch pipes is equal to four 4-inch. The surface of the 8-inch is 2 feet per foot run, of the four 4-inch pipes 4 feet, so that you would get double the heating surface from the same quantity of water in 4-inch pipes that you would from 8-inch pipes. The 2-inch lead pipes would answer very well for the connections. Three or at most 4-inch pipes would be the most suitable size for heating the pit. You would require at least two rows of 3-inch pipes for top heat, and three rows for bottom heat.

Pears for Cordons (*J. V.*).—Williams' Bon Chrétien, Beurré d'Amanlis, and Maréchal de Cour usually grow well and bear freely in strong yet fertile soil, but you cannot expect much fruit for market from three cordon trees. You will do well to drain the land if it is wet, and add lime rubbish or other gritty matter liberally; also place a little free generous loam round the roots when planting, and cover the surface of the soil over them, and for a foot at least beyond their extremities with manure. The ground should also be well covered with manure in the summer to prevent the surface drying excessively, or the roots will be inevitably driven downwards into the unfertile subsoil, and the trees will not then make fruitful growth.

Heating Greenhouse from Sitting Room (*An Old Subscriber*).—We have no doubt your greenhouse could be heated from a boiler set in the grate of the sitting room: but there is this practical difficulty in the way of heating it satisfactorily—namely, unless special provision were made by a person well acquainted with the subject your greenhouse might be made much too hot in the daytime, also at night before you retire, and be too cold towards morning after the sitting-room fire had gone out; or in other words there is the contingency of having great heat in the greenhouse when not required, and little or none when urgently wanted. We have seen a greenhouse heated as you suggest and excellent Grapes ripened in it, but the owner was usually on the alert at 4 A.M. for starting the fire in the kitchen, in the grate of which the boiler was set. The pipes should be a little higher than the boiler, and the feed cistern or expansion box a little above the highest part of the pipes. We have an illustration of the arrangement in question that we could give if you think you could be "up in the morning early" for starting the fire when heat would be most required in your greenhouse in cold or frosty weather.

"Challenge Trophies" and Foreign Words (*C. S. R.*).—Though as a general rule we think it desirable to employ language that is "understood by the people," we are yet inclined to consider your remarks on the article in question as somewhat hypercritical, and the caustic tone that pervades your communication does not contribute to its acceptability for publication. The discussion in question was mainly conducted by gentlemen of education, who were perfectly familiar with the Greek and Latin words to which you object, and which are in frequent use in conversation. There are several Greek, Latin, and French words that are so commonly used that their origin is not remembered, if known, by a great mass of readers; and when properly used none of these words is objectionable: it is the improper use of foreign words in English literature, and dragging them in needlessly, that grates on the ears of educated persons. In the particular case under notice the introduction of the words on which you comment appears to have had the effect of increasing your own knowledge, and of this we never knew a sensible man to complain. The little search, too, to which you have had recourse will impress the more firmly on your mind the knowledge that you previously lacked and have now acquired. You need have no fear that

there will be any systematic departure from the "plain words and plain teaching" of the *Journal of Horticulture*, for the best of all reasons, that simplicity of language is not incompatible with elegance of expression, and this, with a clear method of imparting the ideas of the recorder of them on his readers, is the essence of good writing.

Boilers (*J. E. R.*).—We know that Mr. Bardney has not had experience with either of the boilers you name. The first named in your letter he has probably never seen. It takes up the same space as an ordinary saddle boiler, of which it is a very good form. The second one you mention is also good, and of about the same depth. If you cannot fix a boiler so low as you desire you may possibly effect your object by raising the pipes. These are often needlessly low, and might be raised with advantage. This, however, is a question that can only be determined by structural arrangements in each case. We recently inspected a span-roofed house with two rows of pipes conducted along each side for heating, the lower of these about 3 feet from the ground, the other affixed at the bottom of the roof, and about 1 foot from the glass. The plan answers admirably, and no doubt better than if the pipes were placed close to the ground. We also know of a conservatory satisfactorily heated from pipes in the roof. We have also seen structures efficiently heated from pipes below the boiler, but such arrangements should be carried out by a competent engineer. Perhaps your best plan in the first instance would be to procure illustrated catalogues from hot-water engineers and compare the boilers there represented, choosing the one that appears the best adapted to your purpose. Those catalogues can usually be had for 1s. each.

Forcing Lilies of the Valley (*C. B. B.*).—Any particular kind of soil is not material in the early forcing of these flowers, thousands of them being raised by packing the crowns or clumps in pots or boxes of cocoa-nut fibre refuse, and forced in pits having bottom heat of 85° to 90°, and top heat ranging from 70° to 80°. The crowns are either covered 2 or 3 inches deep with fibre, or otherwise kept dark and constantly moist. When driven into flower early or before Christmas the crowns are of little or no further use. For spring flowering the crowns or clumps may be firmly potted now in a mixture of loam, leaf mould, and sand, the former preponderating, and buried in fibre or ashes in a frame like Hyacinths. The requisite number of pots can then be withdrawn at intervals and placed in a warm house so as to maintain a prolonged supply of flowers. If the pots can be plunged in a warm bed growth will be accelerated, and it is well to cover the crowns an inch or two deep with fibre or leaves. They will grow very well in a temperature ranging between 55° and 70°, or even less, but the lower the temperature the slower is the growth, and usually the sturdier the plants. If good foliage is developed, and this is well supported and matured under the full influence of light and air, late-forced plants will flower again another year. Had you stated your object and conveniences for carrying it out we could probably have given you a more useful reply.

Manure for Fruit Trees (*Constant Reader*).—It is quite impossible for anyone to give a categorical reply as to "What is the best manure for fruit trees, and the quantity to apply per acre for Apples, Pears, Plums, and Gooseberries," because the condition of the land and the growth of the trees must be taken into account in determining a matter of this kind. In some soils fruit trees grow strongly enough without manure, indeed, sometimes too luxuriantly, and in that case fertilisers would be wasted on them. Fruit trees require for their sustenance lime, phosphates, and potash mainly, but of these some soils contain sufficient or nearly so, while others do not. Generally speaking, 50 or 60 bushels of lime per acre is a sufficient dressing for medium soil, more being given to clayey land, and about 6 cwt. of bonemeal and nearly or quite the same quantity of chloride of potash would also be good, but these we should apply as a top-dressing in spring to the soil over the roots of the trees, regulating the quantity in accordance with the growth. If Clover grows luxuriantly on the soil it will contain sufficient potash for fruit trees. From 2 to 3 ozs. of bonemeal to each square yard is a good dressing, and more than enough for trees that grow well, exuberance of growth not being conducive to fruitfulness. If the trees make little growth an ounce of sulphate of ammonia, or a little more, may be also applied to each square yard, or 2 to 3 cwt. per acre, but this is not necessary as a rule, but there are exceptions.

Grubs in Soil (*P. L.*).—The grubs are a species of *Julus* or small millipede. They are most common in wet soil that contains much decaying animal matter. Perhaps your land needs draining. We should work in a liberal quantity of lime, placing lumps in heaps of a bushel on every 20 or 30 square yards, covering with soil dug from round them, and when the lumps swell and fall, spread the lime, and dig it into the land. When planting, surround the bulbs with wood ashes, the more the better, with a little soot mixed among them. Carrot baits inserted in the beds would still be useful, not, however, leaving them to rot in the ground. Surely the insertion of these would not be a formidable task, nor examining them at intervals afterwards. Affected bulbs, with tubers of Begonias and corms of Cyclamens attacked by the pest, should be well washed with a solution of soft soap, 3 ozs. of this being dissolved in a gallon of soft boiling water, stirring well in at the same time a wineglassful of petroleum. The solution should be used hotter than your hand can be borne in it, holding the tubers in a pair of padded pincers, and applying the solution with an old spoke brush, scrubbing it well in; in fact the tubers may be dipped in the solution for a few moments, water of a temperature of 180° not injuring them. They will endure more heat than their enemies, as you may prove by experiment. We should burn, or rather scorch, the soil used in potting, and thus destroy all animal life, then moisten the compost before using, as it never answers to pot anything in dust-dry soil. The scorching will improve the soil, as you may possibly have seen in the richer green of crops growing on ground where there has been a fire over those in the surrounding land.

Ripening Chrysanthemum Seed (*J. P., Exeter*).—We question the practicability of ripening seed of Japanese Chrysanthemums that flower in late autumn, even in Devonshire; but this does not imply that they may not be induced to produce seed in England by a different method of culture than that ordinarily practised. There is no difficulty in keeping Chrysanthemums growing in a light warm house through the winter and flowering them in early summer. This was done years ago, and Mr. Cuthill of Camberwell was once awarded a medal by the Horticultural Society for a plant

flowering in May. The suckers must be suppressed from the plants to be preserved, and the branches after flowering in the autumn somewhat shortened, so that the growths that follow issue from matured wood. It is in this direction that we must look for harvesting Chrysanthemum seed in this country, and it is within the bounds of possibility that new incurved varieties might be obtained by that practice, the Japanese are plentiful enough. It would no doubt encourage the development of the stamens and pistils of Chrysanthemums, which are usually obscured by clipping off, when matured, the florets that constitute the blooms. These, strictly speaking, are composite flowers, one bloom may contain a considerable number of florets.

Names of Fruits.—The names and addresses of senders of fruit to be named must in all cases be enclosed with the specimens, whether letters referring to the fruit are sent by post or not. The names are not necessarily required for publication, initials sufficing for that. Only six specimens can be named at once, and surplus fruits beyond that number cannot be preserved. (*T. A. P. Bromsgrove*).—Gravenstein. (*G. R. J.*).—Easter Beurré. (*Jellico*).—7, Cellini; 8, Blenheim Pippin; 9, Margil; 10, Fearn's Pippin; 11, Sturmer Pippin. (*R. P. O.*).—Brown Beurré. (*C. H.*).—1, Lord Grosvenor; 2, Golden Noble; 3, Waltham Abbey Seedling; 4, not known; 5, Dutch Mignonne; 6, Cellini. (*W. Jones*).—69, Dr. Harvey; 10, Thompson's; 14, Margil; 82, Yorkshire Greening; 2, Cellini; 9, Doyenné Boussoch. (*M. A.*).—1, Beurré Clairgeau; 2, Easter Beurré; 3, Beurré Diel; 4, Vicar of Winkfield; 5, Olivier des Serres; 6, Reinette de Caux.

Names of Plants.—We only undertake to name species of plants, not varieties that have originated from seed and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in firm boxes. Slightly damp moss or soft green leaves form the best packing, dry cotton wool the worst. Not more than six specimens can be named at once. (*W. M. M.*).—The bloom is quite undeveloped. We do not think it is Lady Selborne; it more resembles an inferior Elaine.

COVENT GARDEN MARKET.—DECEMBER 1ST.

PRICES remain the same. Grapes firmer. Trade quiet.

FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples 1/2 sieve	1 6	to 4 0	Melon each	0 0	to 0 0
" Nova Scotia and			Oranges 100	6 0	12 0
Canada, per barrel	12 0	21 0	Peaches per doz.	0 0	0 0
Cherries 1/2 sieve	0 0	0 0	Pears dozen	1 0	2 0
Cobs 100 lb.	60 0	70 0	Pine Apples English .. lb.	1 6	2 0
Figs dozen	0 6	0 9	Plums 1/2 sieve	1 0	2 0
Grapes lb.	0 6	3 0	St. Michael Pines .. each	4 0	6 0
Lemons case	10 0	15 0	Strawberries per lb.	0 0	0 0

VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Artichokes dozen	1 0	to 0 0	Lettuce dozen	1 0	to 1 6
Asparagus bundle	0 0	0 0	Mushrooms punnet	0 6	1 0
Beans, Kidney per lb.	0 6	0 0	Mustard and Cress punnet	0 2	0 0
Beet, Red dozen	1 0	2 0	Onions bunch	0 3	0 0
Broccoli bundle	0 0	0 0	Parsley dozen bunches	3 0	3 0
Brussels Sprouts .. 1/2 sieve	1 6	2 0	Parsnips dozen	1 0	2 0
Cabbage dozen	1 6	0 0	Potatoes cwt.	4 0	5 0
Capicums 100	1 6	2 0	" Kidney cwt.	4 0	5 0
Carrots bunch	0 4	0 0	Rhubarb bundle	0 2	0 6
Caniflowers dozen	3 0	4 0	Salsafy bundle	1 0	1 0
Celery bundle	1 6	2 0	Scorzonera bundle	1 8	0 0
Coleworts doz. bunches	2 0	4 0	Seakale per basket	1 6	2 0
Cucumbers each	0 3	0 4	Shallots lb.	0 3	0 6
Endive dozen	1 0	2 0	Spinach bushel	3 0	4 4
Herbs bunch	0 2	0 0	Tomatoes lb.	0 6	1 0
Leeks bunch	0 3	0 4	Turnips bunch	0 4	0 0

PLANTS IN POTS.

	s. d.	s. d.		s. d.	s. d.
Aralia Sieboldi dozen	9 0	to 13 0	Ficus elastica each	1 6	to 7 0
Arbor vitae (golden) dozen	6 0	9 0	Fuchsia per dozen	0 0	0 0
" (common) dozen	6 0	12 0	Foliage Plants, var. each	2 0	10 0
Asters per dozen	0 0	0 0	Heliotrope per dozen	0 9	0 0
Bedding Plants, var. doz.	0 0	0 0	Hydrangea per dozen	0 0	0 0
Begonias dozen	4 0	9 0	Ivy Geraniums per dozen	0 0	0 0
Chrysanthemum dozen	4 0	12 0	Lilium anatum per doz.	0 0	0 0
Cockscombs per dozen	0 0	0 0	Lobelia per dozen	0 0	0 0
Cyperus dozen	4 0	12 0	Marguerite Daisy dozen	6 0	9 0
Dracena terminalis, dozen	30 0	60 0	Mignonette per dozen	3 0	6 0
" viridis dozen	12 0	24 0	Musk per dozen	0 0	0 0
Erica, various dozen	9 0	12 0	Myrtles dozen	6 0	12 0
" byemalis per dozen	12 0	24 0	Palms, in var. each	2 6	21 0
" gracilis per dozen	9 0	12 0	Pelargoniums, scarlet, doz.	6 0	9 0
Euonymus, in var. dozen	6 0	18 0	Pelargoniums per dozen	0 0	0 0
Evergreens, in var. dozen	6 0	24 0	Primula sisensis per doz.	4 0	6 0
Ferns, in variety dozen	4 0	18 0	Solanums per doz.	9 0	12 0

CUT FLOWERS.

	s. d.	s. d.		s. d.	s. d.
Abutilons 12 bunches	2 0	to 4 0	Lily of the Valley, 12 sprays	0 0	to 0 0
Arum Lilies 12 blooms	4 0	6 0	Marguerites 12 bunches	2 0	6 0
Asters 12 bunches	0 0	0 0	Mignonette 12 bunches	1 0	3 0
Azalea 12 sprays	1 0	1 6	Narciss, Paper-white, bunch	0 4	0 6
Bouvardias per bunch	0 6	1 0	" White, English, bunch	1 3	1 6
Camellias 12 blooms	2 0	4 0	Pelargoniums, per 12 trusses	0 9	1 6
Carnations 12 blooms	1 0	3 0	" scarlet, 12 trusses	0 4	0 6
" 12 bunches	0 0	0 0	Roses 12 bunches	0 0	0 0
Chrysanthemums 12 bches.	2 0	6 0	" (ladoor), per dozen	0 6	2 0
" 12 blooms	0 6	2 0	" Tea dozen	0 9	3 0
Cornflower 12 bunches	0 0	0 0	" red dozen	1 0	2 0
Dahlias 12 bunches	0 0	0 0	Parma Violets (French)	4 0	5 9
Epiphyllum doz. blooms	0 6	0 0	Parm. (single) per bunch	0 4	0 6
Eucharis per dozen	4 0	8 0	" (double) per bunch	1 0	1 6
Gardenias 12 blooms	4 0	6 0	Pyrethrum 12 bunches	0 0	0 0
Gladioli 12 bunches	0 0	0 0	Stephanotis 12 sprays	6 0	8 0
Hyacinths, Roman, 12 sprays	1 0	1 6	Stocks, various 12 bunches	0 0	0 0
Lapageria, white, 12 blooms	2 0	4 0	Tropaeolum 12 bunches	1 6	2 0
" apageria, red 12 blooms	1 0	2 0	Tuberose 12 blooms	1 0	1 6
" longiflorum, 12 blms.	6 0	8 0	Violets 12 bunches	1 0	1 6
Lilac (white), French, bunch	6 0	8 0	" Czar, French, per bunch	1 3	1 9



THE HOME FARM DAIRY.

AN inquiry about the quantity of milk given daily by cows from a correspondent reminds us that although we have recently written upon dairy cows, yet no particular mention has been made of dairy management, and we now purpose to offer a few hints upon a matter of such importance to our readers.

First, then, to the query of our correspondent we reply that we have known instances among polled Norfolks and Suffolks of cows giving from 20 to 30 quarts of milk daily, but such cows are few and far between in any breed. We have had huge Shorthorns giving at the best only 9 or 10 quarts daily, and we have had little Kerries giving 16 quarts daily. To be correct, we must own that only in one instance did we ever get so much milk from a Kerry. The average milk yield of these hardy and useful little cows is 12 quarts daily. Jersey cows are not generally deep milkers. There are, however, notable exceptions, such as Mr. Simpson's cow "Luna," which in its first milking season gave 876 gallons of milk, in the second season 898, and in the third season 816 gallons. In reference to this return a very high authority said it was rarely surpassed by cows of more than twice the size of "Luna," and is a powerful testimony to the extraordinary ability which, under generous treatment, the Jerseys possess for the production of a very large quantity of milk, the quality of which is superior to that of most other breeds of cattle.

Of a herd of mixed-bred cows the following particulars may prove useful. The average of milk per cow yearly is 682 gallons, the highest 963 gallons, the lowest 563 gallons. The per-centage of cream ranged from 11 to 17, according to the richness of the food. It was found in general that the larger the quantity of milk given the lower was the per-centage of cream. The average yield of butter for each 100 gallons of milk set 35 lbs. in winter and spring, and 30 lbs. in summer and autumn; the milk is set for twenty-four, thirty-six, or forty-eight hours, according to the season of the year—generally thirty-six in summer, except in very hot weather, and forty-eight in winter. In cold weather the dairy is heated by means of a small furnace and flue place under one corner of it, and is kept at a uniform temperature of from 48° to 50°. The cream is warmed to a temperature of 54° before being put into the churn, and the agitation of churning brings it up to 62°, at which the best results are obtained. Experiments tried in cold weather proved that the heating of the dairy and the cream before churning increased the return of the butter fully 20 per cent. The quality was better, and it took a much shorter time to churn than when put in cold. The churn used is an 80 lbs. barrel churn turned by hand; forty minutes is the general time taken in churning. The butter is handled as little as possible in the washing; about 1 lb. of salt is put to 50 lbs. of butter for roll butter for immediate home use or for market. If for the latter purpose each 1 lb. roll is folded in muslin and packed in trays in a wooden case. When unpacked the muslin is loosened in a pan of pure water, and then the butter is taken out free from taint or dust. Butter for keeping in pans or tubs has 3 lbs. of salt to 70 lbs. of butter.

We add a few hints from Sheldon's great work on dairy farming. Milk should be carefully strained; if hair or any particles of dust or dirt remain in it they will spoil the butter. Milk should be set in summer in shallow tinned pans, as souring stops the rising of the cream, which is a very slow process, and the great object should be to get as

much cream to the surface as possible while the milk remains sweet. In winter deep setting in earthenware pans is better, because they retain the heat in the milk longer, and the gradual cooling of the milk to the temperature of the air assists the rising of the cream, the fatty portions retaining the heat longer than the milk or watery portions. Milk should always be skimmed before it gets sour, as after that any cream that rises is only of the poorest description, and the slight addition in quantity will not compensate for the inferior quality of the batter. The perforated tin skimmer is much the best, as it allows any milk that may be taken up with the cream to run through.

Dairies must be kept perfectly sweet and well ventilated, and be separated by a partition wall from the dwelling house. No door or window of any kind should look out in any yard where there are offensive smells. The floor should be flagged, tiled, or cemented. The windows must admit no streaks of light or sunshine upon the milk, as they produce flecks in the cream which always show in the butter. The temperature of the dairy is most important; it should never be allowed to go under 50° or over 55°. Keeping a dairy heated to the proper temperature will largely increase the return, and will well repay the trifling expense of a stove.

The cream for churning must not be kept too long. Slight ripening is good for the butter, but it should never be allowed to become very sour, and in winter should be churned at least twice a week, and in summer more frequently; it should be kept covered with muslin, both to exclude particles of dust and also to prevent the air acting too much on the surface of the cream and produce unequal ripening. In addition a fresh skimming of the cream should be well stirred, so as to mix all well together, and no fresh cream should be added for twelve hours before churning, as it would not have time to equally ripen, and would take longer than the other cream to churn, so that the churning would be stopped before the butter came on the fresh cream. The temperature of cream before churning should always be carefully tested with the thermometer. It has been proved that 57° is the best temperature to churn at; and the cream in cold weather should be warmed to this by placing it before a fire or in a tub of warm water, or in hot weather cooled by placing it in cold water. The churn also should be rinsed out before churning in winter with hot water, in summer with cold.

The churn must be turned slowly at first, so as not to break up the butter globules too much, and the churning should be most carefully listened to and stopped the moment the butter comes, so as not to allow it to collect in lumps. The grain and firmness of the butter are thus preserved, and the buttermilk can be easily removed. After removing the buttermilk the butter should be washed in the churn, three times in fresh spring water and twice in pickle, made by placing some salt in a piece of muslin on top of a can, and pouring cold water over it. If the butter is at all soft it should be allowed to stand for a couple of hours in the churn in very cold water. In making the butter handling should be most carefully avoided. By the use of a butter-worker and butter-slices, butter can be made without even touching with the hands, and this is the plan adopted in the best dairies in England and on the Continent.

Cleanliness and care, close attention to every detail, will ensure good butter being made at all seasons of the year. No link in the chain of detail must be missing, however; everything is important, and both cowman and dairywoman must be alike zealous in their efforts in cowyard and dairy. If either of them are at all careless or negligent of their duties the efforts of the other will fail of success in some degree. Perhaps the most important point for the cowman is sweet, wholesome, nourishing dietary for the cows throughout the year; and for the dairywoman before all things scrupulous cleanliness.

WORK ON THE HOME FARM.

Mild open weather has enabled us to push on ploughing and draining, for the surface of the soil has been so firm and dry that all such work has been done quickly and well. We have had a little difficulty in getting

our orders for ridge-ploughing carried out as we wished, two of our bailiffs having had the work badly done. In autumn ridge-ploughing the whole of the surface soil must be moved, and this is managed easily enough by first of all throwing it up into ridges and then splitting the ridges with a second plough, and so making other ridges, beneath which no unmoved soil is left. The entire process is begun and finished as we proceed, and there is no further disturbance of the soil till spring cultivation begins. The advantages of ridging are obvious. We expose the soil to the action of frost, snow, rain, and wind, so that when we go to it in spring we find a seed bed sweet, mellow, and crumbling so freely that a few turns of the ducks-foot barrow leaves it fine as a bed of ashes. It enables us to sow spring corn early, and if any of the land could not be cleaned in autumn the work can be done readily enough in spring. The workmen draining some fields on one of our heavy land farms find the clay subsoil so adhesive that each man has a bucket of water beside him to dip his tool in each time it is withdrawn from the clay. It is upon this particular farm that we have burnt a large quantity of clay for ploughing into the soil to ensure porosity. We mention this important matter here because a misprint in our "Work" note last week makes "burn" read "turn," and beginners may fail to make sense of the sentence in which the error occurs. The fine weather has also been so favourable for corn-threshing that we have had much of it done; we have reason to be glad we have done so, for we have been able to sell a large quantity of Red Wheat at 35s. a quarter, which is 5s. more than we got last season. The recent upward tendency of the price of Wheat is not, we fear, of a permanent character, and the grain is so dry and hard in the ricks that we have no reason to hesitate to thresh. Good Barley has found a ready sale at profitable rates, but spring Oats are so low in price that we find it answer best to use as many as possible for sheep-feeding, and so avoid heavy bills for oilcake. With the Oats we mix crushed Beans, and the condition of sheep is entirely satisfactory.

MESSRS. WEBB & SONS' STAND AT THE BIRMINGHAM CATTLE SHOW.—This popular Show would not be considered complete without the magnificent display annually made by that eminent firm, Messrs. Webb and Sons, seedsmen, Wordsley, Stourbridge, and London, who, as usual, occupy the centre bay of the gallery, and with a stand that is more attractive than ever. Webb's Imperial Swede are of monstrous size and splendid quality. Champion honours at this Show have been gained by it for fifteen years in succession. The quality of the Mangolds and common Turnips is equal to that of the Swedes, the specimens on view being of beautiful shape and wonderful size. Webb's new Invincible Turnip and new Excelsior Kohl Rabi are exceedingly fine. The new field Cabbage, Flockmaster, is also an acquisition of great merit. A splendid collection of Potatoes is another attractive exhibit, comprising all the popular kinds; and Webb's new varieties, Kinver Hill, Discovery, Benefactor, &c., also new seedlings to be sent out next season. Specimens of Grasses, Cereals, &c., adapted for ensilage crops are also exhibited. We learn that Tobacco has been cultivated by Messrs. Webb & Sons at their celebrated Kinver Seed Farms in the past season, sufficiently to embody two distinct experiments: first, to ascertain whether the growth of Tobacco can be made remunerative to farmers in this country, and, secondly, to show what kinds of the Tobacco Plant are likely to promote that object best. About twenty kinds have been grown, including Big Frederick, Can's Seed Leaf, Virginia, Yellow Prior, Broad Leaf, Yellow Orinoca, &c. Grand specimens of vegetables, as well as boxes of home-grown vegetable seeds, call attention to this branch of their business, whilst fine samples of Wheats, Barleys, and Oats show the quality of their popular kinds.

OUR LETTER BOX.

MILKING Cows (J. B.).—You will find full information respecting the amount of milk yielded by cows in our Home Farm article this week.

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude, 111 feet.

DATE.	9 A.M.					IN THE DAY.				
	Barometer at 32° and Sea Level	Hygrometer.		Direction of Wind.	Temp. of Soil at 1 foot.	Shade Temperature.		Radiation Temperature		Rain.
		Dry.	Wet.			Max.	Min.	In sun.	On grass.	
1886.										
November.										
Sunday	30.355	49.1	47.8	N.W.	45.7	51.2	46.9	55.7	39.0	—
Monday	30.489	39.7	38.3	N.E.	45.4	45.8	34.4	60.2	36.7	—
Tuesday	30.585	34.1	34.1	N.E.	43.6	45.5	30.0	62.4	22.2	—
Wednesday ..	30.728	37.5	46.8	N.E.	42.3	45.7	33.1	66.8	22.2	—
Thursday	30.308	40.8	40.8	N.	41.8	50.8	33.3	68.2	26.6	—
Friday	30.419	46.3	45.1	E.	42.4	47.6	40.5	70.2	34.2	—
Saturday	30.478	42.2	42.2	N.E.	43.5	46.8	42.2	50.5	41.1	—
	30.495	41.5	40.7		43.5	47.6	37.2	59.1	32.4	—

REMARKS.

21st.—No sun, no rain, no wind; cloud decreasing till night.

22nd.—Fine and pleasant, with the sun struggling through light clouds.

23rd.—Fine and bright, but with slight haze most of day.

24th.—Fine and bright, slight fog at sunset.

25th.—Bright day, much warmer.

26th.—Cloudy and dull.

27th.—Generally cloudy and calm.

A rainless week, with very high barometer and dense fog in London and the southern and western suburbs. As shown by the temperatures "in sun" it was frequently sunny here.—G. J. SYMONS.



COMING EVENTS

9	TH	Royal Society at 4.30 P.M.
10	F	Quekett Club at 8 P.M.
11	S	Royal Botanic Society at 3.45 P.M.
12	SUN	3RD SUNDAY IN ADVENT.
13	M	National Chrysanthemum Society (Annual Dinner).
14	TU	
15	W	Society of Arts at 8 P.M.

THE POTATO TRICENTENARY.

A PLANT that has been in cultivation for three hundred years, and has assumed the widest importance as a food product, is entitled to something more than a passing consideration upon the completion of its third century, and it is not therefore surprising that the Potato celebration reported in another column should have been planned. It is frequently urged against conferences or exhibitions devoted to special subjects that they are designed to support a "craze" or "fad" of interest only to a few persons, but this cannot be said respecting the Potato, for it is of the utmost importance to all cultivators both as a field and garden crop. Anything that will contribute to its improvement must be recognised as a public boon, and to ensure an advance it is impossible to obtain too wide a knowledge of the plant in all respects. A conference of practical and scientific men actuated by this desire ought to yield some good results, and such may be derived from the Potato Conference at Westminster, though the insufficient publicity given to the project partially nullified the efforts of the Committee.

One suggestion well deserves farther consideration—namely, the possibility and desirability of establishing a Potato Society. This proposal came at too late a stage of the proceedings to admit of discussion, but a general impression prevailed that such an institution would form a fitting memento of the Tercentenary. It is rather strange that the International Potato Show, which has been so successful from an exhibitor's point of view, and which has certainly been beneficial in drawing attention to the raising of new varieties, should have been struck out of the list in the year when it might have extended its interest so greatly. Much useful work could be performed by a well-organised Potato Society, and the proposition merits full discussion.

In the course of the consideration of Potato history several interesting and important facts were brought into prominent notice that seem to have been overlooked or disregarded. One of the principal of these is that when the Spaniards made their first incursions into Peru in the sixteenth century the Potato had been cultivated for ages, and formed one of the principal food products of the country. Though the methods of culture were undoubtedly rude, yet some difference would probably be produced in the course of a long period, and it is found from a vocabulary of the extinct Chibcha language that several varieties of Potato were not only known but had received designations indicating their peculiarities. Many interesting particulars bearing upon this portion of the subject were detailed by Mr. Clements Markham in his masterly review of Peruvian cultivation, which threw a very clear light upon a somewhat complex matter. It is quite evident that the Potatoes first brought to this country were really cultivated varieties of some species which has been termed *Solanum tuberosum*, but which, as Mr. Baker has pointed out, might really be only the cultivated product of an older wild form. At least, it cannot be absolutely determined whether apparently wild

plants of *S. tuberosum* now found in Peru are escapes from cultivation or not. Two peculiar circumstances were mentioned by Mr. Ap-Thomas—namely, that only three varieties are now generally grown in Peru, and that the Potato disease is unknown, being, he supposed, confined to the lower and more humid regions of Chili, whence comes the notorious *S. Maglia*.

The botany of the Potato found an able expositor in Mr. J. G. Baker, who went over much the same ground that he had previously so well explored, but he has apparently made a slight alteration in the landmarks. Hitherto he has recognised *S. Maglia* as a species, but now it is reduced to a variety of *S. tuberosum*, a view which is held by several other botanists, notably on the Continent. This would lower experiments with *S. tuberosum* and *S. Maglia* from the rank of hybridising to that of cross-breeding, but they might be none the less prolific of good results on that account. There is undoubtedly abundant room for many valuable experiments in hybridising the Potato, but it does not seem that Kew would be a suitable place for the purpose. If the Royal Horticultural Society cannot undertake something of the kind, perhaps it will be reserved for a future "Potato Society."

Nothing particularly new or remarkable was advanced in the cultural department, though a few erroneous impressions were removed in the course of the discussion, as will be seen in the report. No other remedies could be proposed for the Potato disease than early lifting and the continued raising of new varieties to take the place of those that have become exhausted. It was, however, strongly and reasonably urged that much might be done to preserve the character of present varieties by more care in the selection of tubers for planting, a matter that is frequently neglected. The degeneracy of the Potato was considered at some length, and the general conclusion arrived at was that want of care in the matter just mentioned, and the application of fresh rank manure at or shortly before planting time, were the chief causes of varieties deteriorating.

Two old varieties shown were at once examples of degeneracy and the maintenance of good qualities over a long period. One of these was the White Rock from Youghal, Co. Cork, where it is grown generally by the peasantry, the samples being coarse irregular tubers with very deep eyes, and differing greatly in size, presenting a surprising contrast with the handsome even tubers of varieties that are now chiefly in favour in England. The other example was the old and well-known Dunbar Regent, that has partially dropped out of cultivation, but which is still highly valued in some gardens. The tubers were cooked, and were veritable "balls of flour," an expression frequently used with regard to Potatoes, but too seldom realised. It is doubtful if there were any of the more recent Potatoes shown on this occasion that would have excelled or even equalled this variety when cooked. In the one case a naturally prolific variety had been neglected both in the selection of tubers for planting, in the subsequent culture, and in continually taking similar crops from the same land, and in the other the opposite treatment had preserved the original qualities of the variety admirably.

The Earl of Cathcart was present at the Conference a portion of each of the two days, and evidently was deeply interested in the proceedings, eliciting much useful information by pertinent questions. If this gentleman could be induced to favour the scheme mentioned as to the formation of a Potato Society, and no one is more likely to do so owing to the long interest he has taken in the subject, its success would be assured. The first point is, however, to indicate the practical advantages that are likely to result from such an association, and then no doubt ample support will be forthcoming.

Some credit is due to the originators of this Tercentenary celebration, but they would have acted wisely in making

their scheme more widely known, as they would then have gained the confidence of a greater number of exhibitors and cultivators.—L. CASTLE.

PRUNING EARLY VINES.

ALL Vines which are intended to be started into growth in January should be pruned at once, and if the February Vines are now destitute of foliage they should also be pruned. It is a mistake to prune any of them when they retain much foliage, especially if the leaves are green, as this is a sure sign that the sap is still plentiful in the rods, and to prune then would allow much of this to escape and prove very injurious; but when there are only a few leaves on, and these are quite brown and lifeless, pruning may be done without injury, and in cases where the time for starting the Vines is close at hand pruning must sometimes be done before all the leaves have fallen, as mentioned above. Vines to be started at Christmas time or on New Year's Day would be pruned by us now, although they might be carrying a few leaves; but if they were not to be started until February we should not prune until the last of the foliage had fallen naturally. It is not common, however, for Vines started in January to keep any of their leaves until December, and as a rule all early Vines will be leafless now and present no obstacle to pruning.

Where the Vines are old and rather uncertain of starting into growth at every spur, two or three buds should be allowed to remain on each piece of young wood that is left at the end of the old spurs, and some of them will be sure to start, whereas if reduced to one bud this might fail and cause a blank. In the case of young healthy Vines this long-spur style of pruning should not be practised, as one bud is quite enough to allow on each of their spurs, and close pruning prevents their forming those long horn-like growths which should never disfigure any Vines. It is often a difficult matter to induce Vines to start freely into growth in January, and pruning must be done very carefully, as anything which tends to weaken the Vine soon shows itself in early forcing.

Bleeding is more common in the case of early Vines than later ones, and they cannot afford to lose much sap in the shortest days. For this reason all Vines pruned now and started early should have the cut parts dressed with Thomson's styptic. One dressing must be put on immediately after pruning, and another in two or three days afterwards. There is one form of pruning we entirely disapprove of, and that is where the Vines are pruned this week and started into growth the following one. It is almost impossible to prevent bleeding then, and the sap begins to rise so soon after pruning that a weakly growth is sure to follow, and the crop will be unsatisfactory. Where the roots of the Vines are inside and away from autumn rains the wood ripens sooner, and the leaves fall earlier than when the roots are in the open soil and subject to all the rain that falls. In the latter case we have known Vines which were started in February retain their leaves until the end of December, and then there is not much time left to prune and clean before restarting again; and all early Vines bearing foliage now should be kept rather dry at the roots, allowing plenty of air to reach the branches, and give a little fire heat if possible that the foliage may fall soon from maturity, and the wood become thoroughly hard and ready for immediate pruning.—A KITCHEN GARDENER.

TOBACCO CULTIVATION.

HAVING grown this plant with the exception of a few seasons in several parts of this county for the past twenty-six years, the following remarks may be useful to some of your amateur and cottager readers. Professional gardeners, of course, I do not pretend to teach.

Obtain a 6d. packet of seed, which will produce thousands of plants, sow early in April in a pan or box in gentle heat, using a mixture of loam, leaf mould, and sand. Prick off the seedlings in boxes, exposing gradually to a lower temperature, and finally plant out the last week in May or thereabouts. To have strong healthy plants the ground must be in good condition, and if a south border or other sheltered position can be afforded they will grow taller and the leaves will possess a much better substance, which is essential for the improved quality of the Tobacco. Until this season I have usually dug the plants early in October and hung them up by the roots in an airy shed, stripping the leaves off when withered, placed in a box, and pressed; but this plan did not succeed in all seasons alike, mould very often interfering with the quality of the leaf, which was very apparent when used with rag or tobacco paper for fumigating purposes. That the plant can be grown in this country (if properly manufactured) sufficiently good to compete with much of the foreign importations I have not the slightest

doubt, and I only wish to see the praiseworthy endeavours of Lord Harris and others to stimulate in the smallest degree British industry at once recognised by the Government of the day, and all restrictions during another year's experiment entirely removed.

As to the dressing or preservation of the leaf, I will not profess to give lessons, further than to say that I found out only this year by mere accident a better system than any I had hitherto adopted. We left by accident a few not very valuable Apples in a Melon pit. The fruit having been all used no further notice was taken of the usual ventilation, the lights being closed for several days, and when opened the Apples were found almost scorched, but of a beautiful colour, similar to what a well-preserved Tobacco leaf ought to be. We at once cut from the plants as they stood in the ground the lower leaves of the strongest plants and spread them on the soil in the pit (the Melon being still there, but quite withered), the sashes were shut day and night, and opened only for the purpose of sprinkling the leaves occasionally with a fine rose. The result was a decided improvement both in the colour of the leaf and quality of the Tobacco. I beg to enclose for the Editor's inspection a small specimen cigar made by a youth in the gardens here from the home-grown weed as cultivated by us, but so simply described above. I may further add, that this season we had Tobacco plants appear in the kitchen garden borders (self-sown) which reached the height of 4 feet, with strong stems and stout healthy leaves.—WM. CHISHOLM, *Oxon Heath Gardens, Tunbridge.*

[The cigar is well made, but too fresh for testing its quality. It shall be preserved to become "seasoned."]

FERMENTING MATERIALS—AMMONIA VAPOUR.

In these days fermenting materials are less esteemed than formerly. Tan, leaves, and stable litter were largely used at one time for forcing purposes and furnishing bottom heat to Pine Apples, Cucumbers, and Melons; but a great difference would be made in the fuel account if leaves were collected, properly stored, and used for bottom heat, or where practicable, for top heat in early forcing operations. Fire heat, instead of being the principal, would only be required as auxiliary in the case of forced Vines, Figs, and Peaches. A ridge of fermenting materials in houses started before and up to March, turned, and added to as required, would so decrease the coke or coal bill. This is a matter worth attending to, but there is another equally important question, Is it not desirable to increase the supply of manurial matter? The leaves collected and used in the manner indicated would be a two-fold gain—viz., effect a saving of fuel, and afford a supply of rich fertilising material, such being the best of all for mulching crops indoors or out, and for potting purposes vegetable mould is the best of all. Those, of course, that do not believe in fermenting materials will be prepared to argue that the sun's heat is no better than that of a furnace, and that the heat from fermenting materials is no better than that radiated from hot-water pipes.

We may, I think, exclude tan as a generally obtainable material, and are left solely with leaves and litter. Tan has to be purchased, but even then it is doubtful if we get as much heat out of the same value of coal or coke. A fermenting bed of tan will keep up a suitable bottom heat for Pine Apples for many months, a good depth giving as much heat as a 4-inch hot-water pipe per square yard of surface. It would be interesting to know what is the comparative cost of heating a Pine bed with tan 30 feet by 9 feet and with hot-water pipes for twelve months. I much regret not having taken notice of such an important matter, but I have observed that the results are more certain and superior where tan was employed. The moisture given off all along with the gases evolved by fermenting materials cannot do other than enrich the atmosphere. A notable instance of this is seen in Seakale, Rhubarb, and Asparagus forced by fermenting material and by the heat of flues or hot-water pipes whether the roots are taken up for forcing or forced where grown. The results are more decided still in the case of Mushrooms—they being more fleshy and heavier than when forced with a dry heat.

Bottom heat is essential in the cultivation of Pine Apples, Cucumbers, Melons, early-forced Figs in pots. This much is admitted, also that no materials are so good for the purpose as leaves and stable litter. Some advocate a discontinuance of the covering of Vine borders outdoors, alleging that as good results are had from a thin covering of protective material as from a covering of warm leaves and litter. According to their view it does not matter if the Vine roots are in a border with a temperature of 36°, 38°, 42°, 47°, and 53° respectively those of the earth at 1 foot depth in January, February, March, April, and May, whilst the Vines are subjected to a temperature of 55°, 65°, 70°, 75°, and 80°, the house being closed about the middle of December to have Grapes ripe by the end of May. But who has the roots of Vines in outside borders nowadays? True Vines are mostly planted inside, which makes a difference, only the chief of the roots are found in the outside border. That certainly does not prove the roots have a decided preference for a cold wet border. I do not hold with our friend, "A Thinker," in keeping a few facts in reserve. The fact is Vine roots are generally more plentiful in an outside than inside border, from the difference in the moisture and the changes it effects on the soil as compared with hard water or even rain stored in tanks.

It has been contended that Vine roots, as a rule, do not become active

until the growth is considerably advanced, and that heat at the roots in the early stages is not necessary. I think Mr. W. Taylor expressed a view of this kind in the *Journal of Horticulture*, but his idea referred more to Vines not started before March, therefore had no bearing on the question of warmth to the roots of early-forced Vines. Mr. Coleman and others are more pronounced, for, whilst believing in affording warmth to the outside borders of early-forced Vines, it is advised not to be applied until the Vines are fairly moving. Therefore I have only to say that bottom heat, as regards Vines is a vexed question, and of less account than formerly, on account of there being quite a revolution in Vine culture.

The advantage of fermenting materials as a source of heat and a supply of moisture to the atmosphere cannot be disputed. A good bed or ridge of fermenting leaves and dung add something more than the dry heat of hot-water pipes, and are more genial to vegetation. The question arises, Is it necessary or advisable to supply vapour analogous to that of fermenting materials? Some contend that moisture is all-sufficient, that feeding the roots is only essential. Others are equally decided as to the value of an ammonia-charged atmosphere, whether it be had from fermenting materials or afforded in liquid form to available surfaces. If we are satisfied that those means—evaporation from troughs filled with water or liquid manure and sprinkling available surfaces with liquid manure—are superfluous, we advance in the direction of economy of material and labour. If, on the other hand, they are beneficial, the question arises, When and how to use the substance? I have used liquid manure for generating an ammonia-charged atmosphere, and of all those employed I consider none equals urine collected in a tank, where it is, of course, decomposed, and diluted with six times its bulk of water is safe.

What a lot of trouble some take in making borders for Vines, &c. Some time back a range of fruit houses was erected in a certain garden. Vines, Figs, and Peaches were planted in borders that would serve two or three years. This left a great chasm inside, also outside. The fruit borders were full of roots and extension was needed. Soil, turf, bones, and labour could not be obtained. Instead of the inside border being widened, the openings in the front and side walls were knocked out; a width out equal to the border was made. The inside border space was filled with Oak and Beech leaves, a bed a yard deep and about 9 feet wide, added to as required. The outside border opening was also filled when hotbeds were wanted, and frames placed on them. This succeeded beyond expectation. The fuel bill was one-third less, the fruit crop better than where the borders were two-thirds wider, and the manure—i.e., leaf soil—is better, as it was soaked three times with liquid manure in the course of the season. The roots ran freely in the leaves and prospered. The whole of the leaves were cleared out for fertilising the soil of the garden for vegetables, &c.; the short was used as a mulch for the roots in the border. In this way we have an annual width of border, a supply of food each season, and a third of the artificial heat required, all for a small outlay in labour.—UTILITARIAN.

THOUGHTS ON CURRENT TOPICS.

THE feast of Chrysanthemums being practically over, an opportunity is afforded for a consideration of other subjects that have necessarily remained in abeyance during the past few weeks. The great autumn flower has done its duty and had its day—a short but brilliant reign without a rival, and glad must many of its votaries be now the court has nearly closed. Its cultivators can now compare notes and commence preparations for another session, as well as settle down to other duties that are embraced in their calling.

BEFORE dismissing the topic of showing Chrysanthemums, I may perhaps give utterance to a thought somewhat in advance of the times perhaps, and perhaps not, for it is a matter of history that the same idea occurs to sundry minds almost simultaneously. A great 50-guinea challenge trophy will have to be provided sometime for Chrysanthemums, as has been the case with Roses, and will be again. Which of the Chrysanthemum societies is to take the lead in this enterprise? There are plenty of well-to-do patrons who would subscribe a guinea or half-a-guinea each towards such an object if an appeal were made by an authoritative body. For such a prize it would be reasonable to expect that all sections of Chrysanthemums would be included in the contest. A trophy of this value with, say, five other good money prizes would command support, and such a class would be formed as would "take the town by storm." But what town? That is the question. The idea is broached, and there I leave it, to expand or to be relegated to the limbo of wild notions, never mayhap to be resuscitated.

I OWE a reply to Mr. J. Muir who on page 412 appeared to rejoice in the possession of fine samples of flat Onions, which the "improvers" have produced by a process of selection. I ventured to suggest in the issue of October 28th that a valuable food crop was being spoiled by a false standard of excellence that appears to be accepted by exhibitors and recognised by judges at vegetable shows. From that opinion I do not recede, and I will state the reason why. Mr. Muir brings a serious and well-founded charge against the monstrosities I have in view, that I did not advance—namely, the proneness of flat Onions to split, and thus render a crop worthless. But, even assuming they do not split, I do not despair of showing how thoughtless, not to say irrational, it is to encourage the production of the pancake-like specimens that find favour with many cultivators at the present day.

THE relative values of different types of Onions, as any other products,

can only be determined by a commercial test, and by that test garden products will be estimated more rigorously than ever in the days that are before us. Now that the products of the world are practically brought to the same market they must stand on their merits and the weakest will go to the wall. In the question of Onions we are behind the times, and, what is worse, receding. Others more alert than we, both to getting the greatest value from a given plot of ground and meeting the public taste, are profiting by our shortsightedness, with the result that English Onions are being driven out of the market by foreign samples. It is high time something was said on this subject.

I WILL now bespeak the attention and unprejudiced consideration of all who are interested in the improvement of vegetables in general, and of Onions in particular, to an aspect of the question that, I think, has not been hitherto presented, yet it is a very practical aspect, and goes to the very root of the subject. It will scarcely be disputed that there is quite room enough for an additional quarter of a pound of Onion to be raised on the shoulders of the thin wide-spreading bulbs that cover so much ground and rise so slightly above it. Now allow to each bulb a square foot, which cannot be called close cropping, and the additional weight stated will yield 10,890 lbs. per acre, the value of which at 6l. per stone of 14 lbs., or less than a halfpenny a pound, is £19 8s. This extra gain is sufficient to pay the rent of the land, also the cost of seed, manure, tillage and harvesting, there then remaining the entire crop, if it were of flat Onions, for profit. What have the defenders of flat Onions to say to that? They cannot show any profit worth mentioning on the culture of these, and yet they are honoured and extolled as wonderful productions. They are remarkable only for covering the greatest extent of ground and giving a correspondingly small weight of produce, and this comparatively inferior, as half of it is buried or blanched in the ground, instead of by far the greater weight of bulbs developing above it for insuring soundness, saleable appearance, and long keeping qualities. Flat Turnips are obsolete, or nearly so, and good farmers will not have them, and yet good gardeners, or many of them, cannot see the fallacy of flat Onions. Whoever may be their champion I shall not be envious of his name.

I HAVE been interested in the discussion that arose a few weeks since on the question of having water in ashpits beneath boiler fires in gardens. It seems to be generally admitted that water there is of service not only in allaying dust, but for preventing the incrustation of the fire bars with clinkers. This it does, and I think it does more. It is probably true that many fire bars are warped by expansion, as Mr. Barney suggests, because, as a rule, the longer the bars the greater is their liability to derangement. This has been experienced, too, in boilers made of a series of very long pipes, the alternate expansion and contraction dislocating the joints, while an apparatus consisting of a greater number of shorter pipes remains sound. But as the presence of water in ashpits cannot possibly aggravate the evil of expansion, and is in some respects beneficial, the only question to consider is that of having the pits so made that a supply has to be poured in periodically to make good the loss that occurs by evaporation, or so arranged that there is a steady inflow and outflow, so that the water remains at the same level constantly. Mr. Barney has asked what I think of the two plans. I think the old one is the better, for an old one it is, as it was my duty to place water in ashpits nearly or quite forty years ago, or during the fine-heating period, when a brisk draught was, as a rule, more essential than it is in the hot-water system of heating. I have long thought the vapour that rises from the water in moderation, and it is never very great, acts as a feeder to the fire, and on that account warm water confined in the pit is better than a cold steadily running stream. I had intended showing the manner in which water in the form of vapour assists combustion, but this has been so well done by Mr. J. Riddell on page 431 that all I need do is to endorse his remarks. I thank the able correspondent alluded to for the new light he has thrown on an old subject.

THE trenching discussion has dragged its slow length along over a period of two years. If Mr. Iggulden is not satisfied with the extent of his defence, I think he ought to be; and I am of opinion if he had made his case as clear at the first as he has done subsequently, there would scarcely have been so much opposition. Instruction has been derived by many persons from the discussion no doubt, but I know confusion has also been experienced. Your correspondent's complaints of the soil in the fertile district wherein he works so well are neither few nor far between. He ought to rejoice that he has such land to deal with. Rightly managed it is a splendid soil. The fine timber all around the garden, and the luxuriant crops in it, afford evidence of that stronger than columns of argument. The soil is of such a "holding" nature that it will retain enough added virtue in the "upper crust" for the support of crops. But that is exceptional, and the majority of good gardens have been made what they are by a well conducted system of deep culture; and granting that it would be a mistake to trench such heavy ground as that at Marston and Longleat, it would be a still greater mistake to rely on shallow culture as a rule. His assertion that the "whole business" had been "overdone" was too sweeping, for it is manifest his experience only extended over a very small part of the "whole." Let the character of land be considered in deciding on the method of working it, then deepen intelligently such as may be improved thereby, keeping it good on the surface, and making it better below, and the crops will soon tell whether the labour has been wasted or not. The special pleading that

has been indulged in on this question I do not think indicates a bad case, but it has very nearly spoiled a good one.

NOTHING is more common for a person who fails in an attempt in doing what others succeed in than to think, and try to prove, that the others are in error; or in other words those who succeed are wrong, while those who fail are right. That Cucumbers can be grown, and are grown, without ventilating the houses in the ordinary way is a fact that cannot be denied, or at least the denial cannot be substantiated; but whether what is called the "non-ventilating system" can be successfully carried out in all structures, and whether if it could it would be desirable to adopt it in all gardens, is quite another matter. In the great Cucumber-growing establishment at Prescott there are no ventilators in the houses to open; and if there were it is very certain the proprietor, who has achieved such wonderful success, would not have them opened. When we see what a carpenter has accomplished by a departure from orthodox routine we see what can only be regarded as a triumph of heterodoxy. I know of only one parallel to the great achievement in question, and that is the case of Mr. Barter, also a carpenter, as a grower of Mushrooms. Both of these non-professionals are making their fortunes, if they have not made them, in doing what gardeners have proclaimed could not be accomplished.

I HAVE been too long on the land to give credence to all the wondrous things we hear and read about; but I believe what I see on matters of culture after a close personal examination, nor am I particular to a few hundreds of miles of travelling for the purposes of investigation. I have seen both the establishments alluded to, and am convinced that more is done in them than has ever been published. I have seen another great establishment also, even greater than either of them, and if I were to tell all I know about it I should be accused of either having been imposed on or of drawing the long bow. I will give a sample, as I think it is good for us to have our professional pride wounded a little now and then, or we should get conceited. In the enormous commercial horticultural establishment, then, just referred to most things are done differently from what a trained gentleman's gardener would do them, and some are done better; indeed—and here is the "point"—the proprietor will not employ such accomplished individuals, as they have so much to unlearn. That is possibly the reason that some of them fail in growing Cucumbers in closed houses, hence conceive the system to be faulty if not mythical. They had better go to Prescott and see.

THE houses and method of culture are exactly as Mr. Bardney has described. There is no mistake about it. Cucumbers are grown there by the million and sold by the ton; but the houses would scarcely do for ladies in slippers and gentlemen in dress boots to pass through. They have mud floors in hot weather without a doubt. It is very much a question of wading through "slosh" to pass down some of them. The moisture ever rising renders the air very like that floating over a tropical swamp, where vegetation is luxuriant to a degree unknown in temperate climes or "properly ventilated" garden structures. Similar conditions could scarcely be maintained in houses where the floors are closely paved and have to be kept clean. It is conceivable that in such houses the non-ventilating system might not be the best; and, further, in private gardens a steady and prolonged supply of Cucumbers is usually preferable to growing the greatest possible number in the shortest time and at the least expenditure for labour. This is the "market style," and has been found the most profitable by those persons who have carried the plan out in its integrity in Lancashire. I wonder if the same system is practised by the great growers for the London market at Worthing. Perhaps Mr. Arthur Young can inform us; if not, I must watch my opportunity to go and see.

It is idle to argue about Grapes, Peaches, and other fruit being grown on the "non-ventilating" system in summer. No one that I know has advocated such an absurdity. While Mr. Bardney defends the close system for Cucumbers, he points out with at least equal force the necessity for a free circulation of air for various kinds of plants and purposes specified on page 447. He evidently considers that a greater influx of air than is needful or beneficial is often admitted to the occupants of garden structures. In some respects I think he is right, for I am convinced that sharp currents of air rushing through the front ventilators early in the season are inimical; drying the atmosphere, checking free growth, and predisposing to insects and mildew. But free yet judicious ventilation is necessary for the solidification of growth, and there is perhaps a little danger of the non-ventilating system being carried out too rigidly—it may be even by its chief advocate, but more likely by others who may carry out his suggestions and who do not understand the philosophy of the subject so well as he does.

As to growing either Cucumbers or anything else "without air," the proposition is unsound. Air can no more be excluded from a glass structure, in which the temperature is several degrees higher than it is outside, than water could be excluded from it if the house were submerged. It is almost certain that much injury is done both to plants and fruit in the early stages of growth by an ill-considered method of ventilation, and it is significant that growers of produce for market do not spend half so much time in opening and closing ventilators as private gardeners do, while there is no mistaking the great excellence of the produce of the best commercial horticulturists. There is a great deal to be learned from these industrious and successful cultivators, whose work and methods of accomplishing it have often been admired by—A THINKER.



WE have received the following note from the Earl of Cathcart:—"I am sorry to observe in the Horticultural Press that in relation to recent POTATO EXPERIMENTS some reflections have been made in regard to the authorities at Kew. With Mr. Baker, F.R.S., of Kew, I have to-day (the 4th inst.) visited the Reading collection. We have been vastly interested; and, I am allowed to say for both of us, instructed. Messrs. Sutton and myself are the persons most interested, and I beg to say we are grateful to the Kew authorities for unvarying attention and kindness, and we have nothing but appreciation to express in regard to that invaluable national institution."

ALTHOUGH an unusually large edition of Mr. Molyneux's work, "Chrysanthemums and their Culture," was printed, its acceptability proved so great that the stock is exhausted, and another edition is in preparation for the press. In the meantime all orders that are received at this office, and by the author, will be filed, and executed in rotation as soon as copies of the second edition are ready for distribution.

THE ROYAL BOTANIC SOCIETY OF LONDON will hold the following Exhibitions at Regent's Park in 1887:—Spring Shows March 23rd and April 20th; summer Shows, May 18th and June 15th; evening fête July 6th; display of American plants during June.

"S. P. E. S." writes—"In reply to a correspondent, 'J. A.,' on page 495 of the last issue of the Journal, the lines quoted probably refer to *Medicago intertexta*, generally known as Calvary Clover, a singularly pretty and interesting plant that one seldom sees save in botanical collections."

A MONTROSE correspondent thus recommends *SPIRÆA CALLOSA ALBA*:—"I do not observe that the enclosed was noticed in the list of "useful cutting flowers." It has been a part of my every morning flower for three months past. It is about a foot high, densely full of white small blossoms; it tricks out beautifully with anything that fine Ferns will go with."

A CORRESPONDENT writing on CHRYSANTHEMUMS AT CHATSWORTH observes, "These have been very fine this year and are good now; 700 plants have been grown, or rather large bushes, mostly in 10 and 12-inch pots. The plants have been disbudded to about twelve blooms each, which are very large, and the circular Lily house is filled from floor to ceiling. The display is highly imposing, and has been much admired by all who have had the opportunity of inspecting it."

A SHEFFIELD correspondent writes:—"Our CALANTHES were in a flourishing condition this year until the end of September or beginning of October, and gave promise of doing well. About that time, however, they seemed to be affected by a kind of blight, though no insect life could be detected on the foliage of the plants, and on examination there appeared to be nothing amiss with their roots. The majority of our Calanthes will not bloom at all this year, having only made small and weak bulbs. On making inquiry of our neighbours, we find their experience in many cases to tally with our own. It would be interesting to hear the remarks of growers in other localities." We will readily publish any remarks or suggestions that may be forwarded to us on this subject.

WE have received from Messrs. S. W. Partridge & Co., Paternoster Row, an attractively bound volume of the "ANIMAL WORLD," a monthly publication, well described as an "advocate of humanity." It is profusely illustrated, and the interesting and wholesome character of its literature renders it a favourite in many homes. The volume would form an admirable Christmas gift for young persons.

A GARDENER contributes the following note on PEACH FLOWERS AND FRUIT SETTING:—"It is clear that many persons do not comprehend the fact that the large-flowering Peaches are of two races—the Noblesse and Grosse Mignonne, which vary considerably in the development, or rather over-development, of the buds in embryo. In Noblesse—the type—the buds are very liable to over-maturity, and they

have flowers very bold in petal, but the pistils are very short, often twin, and the stamens have "deaf" anthers—no pollen, and a very large percentage of the buds fall. In the same house we have had *Nohlesse* cast many buds and give the defective flowers year after year, whilst *Royal George* neither cast a bud nor had imperfect flowers."

— THE LAURUSTINUS.—"Lankhills, Winchester," observes:—"I am much interested in Mr. Ahhey's able account of lawn plants at page 496 of your interesting Journal, but we find here that the *Laurustinus* thrives, flourishes, and flowers in the most exposed situations, planted entirely in chalk. I have a hedge planted in 1851, in an exposed place, on a rock of chalk; it is at this minute in full flower, and has so flowered yearly. I have several similar hedges in and near Winchester, all planted in chalk banks and greatly exposed: nothing hurts them. Last autumn I planted a hedge round a tennis ground—all chalk—all stood last long winter and now flourishing. I have the plants from Waterer, Knap Hill Nursery, near Woking, whose grounds will repay anyone a visit."

— A MEETING of the NATIONAL AURICULA, CARNATION, AND PICOTEE SOCIETIES was held in the East Crush room of the Royal Albert Hall on Tuesday last, Harry J. Veitch, Esq., in the chair, when some alterations were made in the schedules and the dates fixed for the shows next year—namely, the 26th of April for the Auricula Show, and the 26th of July for the Carnation and Picotee Show. In the Auricula schedule the first prize for fifty plants has hitherto been £5, but in response to the wishes of several growers this has been reduced to £4, and there are now only four prizes in that class. There are three classes for alpinists instead of two, and exhibitors can enter which two they prefer. Two classes are provided for single and double Primroses, also for six and twelve species of *Primula*. Rule 10, which applies to both Societies, has been rescinded and the following substituted. "Seedlings, whether exhibited in collections or not, are eligible for certificates, due notice having been previously given in writing to the Secretary. Each plant must have the entry card correctly placed upon it. The officers were re-elected except Mr. Rolt, who resigns the post of Treasurer, Mr. Shirley Hibberd taking his place. Mr. T. Fife, Reading, and Mr. C. Phillips were elected on the Committee of the Auricula Society; and Mr. T. Henwood and Mr. Martin Rowan were placed on the Committee of the Carnation Society."

— A GREAT void will be felt in the ranks of the Auricula growers by the death of MR. EDWARD POHLMAN, Parkinson House, Parkinson Lane, Halifax, who died there on Nov. 27th, aged sixty-one years. He was an ardent cultivator, and was a constant exhibitor both at the northern and southern exhibitions, where he took many prizes. He was the owner of one of the largest collections in the north.

— WE received from Mr. Piercy of Sydenham some time ago a charming spray of the single white *CHRYSANTHEMUM HARTLAND'S MARGUERITE*. It was quite a bouquet of white Michaelmas Daisy-like flowers, and can scarcely fail to become a favourite for vase and room decoration. Accompanying the spray in question were flowers of Mr. Thorpe's American variety, *Mrs. Le Moutt*, remarkable for the rich glowing crimson colour of the rather small blooms, which show to great advantage under artificial light.

— WE have received the report of the YORKSHIRE ASSOCIATION OF HORTICULTURAL SOCIETIES, and are pleased to observe that the financial statement shows a balance in favour of the Association. We are surprised to see how much is accomplished at such a small outlay, which indicates that the Committee, which is almost wholly composed of gardeners, are excellent business men. The programme of the meetings of the Wakefield Paxton Society from December 4th to March 5th inclusive contains a varied list of subjects on which papers will be read and discussions follow at the weekly meetings during the period named.

— AT the usual weekly meeting of the members of the WAKEFIELD PAXTON SOCIETY, held at the "Saw Inn," Councillor Milnes presided, and Mr. W. L. Skinner of Silcoates Nursery, filled the vice-chair. The subject for discussion was "The Apple," and there was a good exhibition of specimens of many of the best varieties of Apples, and also remarkably fine Pears. The subject should have been introduced by Mr. J. G. Brown, gardener to Mr. John Barff Charlesworth, J.P., of Hatfield Hall, but he was prevented by indisposition from being present. Mr. W. Hudson, gardener at Sandall Grange, read an excellent paper on "Pruning," and it gave rise to a long and interesting discussion, in which Messrs. W. L. Skinner, J. Campbell

(Painthorp) and W. Hudson were the principal speakers. On the motion of Mr. Irving Whitworth, seconded by Mr. J. Campbell, a vote of thanks was given to Mr. Hudson for reading the paper, and a similar compliment was paid to the exhibitors of specimens, on the motion of Mr. Thorpe, Assistant-Inspector of schools, Belle Vue, seconded by Mr. Sam. Gill of Stanley Hill.

— AT the ordinary meeting of the ROYAL METEOROLOGICAL SOCIETY to be held at 25, Great George Street, Westminster, on Wednesday, the 15th inst., at 7 P.M., the following papers will be read:—"On the Proceedings of the International Congress of Hydrology and Climatology at Biarritz;" by G. J. Symons, F.R.S., F.R.Met.Soc. "Report on the Phenological Observations for 1886;" by the Rev. T. A. Preston, M.A., F.R.Met.Soc. "A Criticism of Certain Points of Prof. Langley's Researches on Solar Heat;" by Prof. S. A. Hill, B.Sc., F.R.Met.Soc. "Account of the Hurricane of March 3rd and 4th, 1886, over the Fiji Islands;" by R. L. Holmes, F.R.Met.Soc. "Results of Meteorological Observations made at the Military Cemetery, Scutari, Constantinople, 1866-85;" by W. H. Lyne. As the draft list of officers and Council for the year 1887 will be prepared at the next Council Meeting, it is requested that those Fellows who wish to suggest names for the new Council will send them in before the 15th inst.

— A VERY convincing sample of the suitability of *ASPARAGUS PLUMOSUS NANUS* AS A WALL PLANT is presented in a long lean-to house in the Chilwell Nurseries. The house faces the north-west, and the front stage is occupied with Zonal Pelargoniums in the summer. *Lapagerias* appear to have been planted for covering one part of the lofty back wall and the Asparagus the other portion, but this latter plant has given so much satisfaction by its luxuriant growth that it is being extended, and will no doubt eventually cover the entire surface. The dark elegant leafage is displayed in its fullest beauty, and great quantities might be cut for decorative purposes without impairing the effect. The wall only receives sun during the late afternoon in summer, and the temperature of the house is rendered suitable for the Pelargoniums. For covering the shaded wall of a stove or warm greenhouse it is not easy to conceive any plant more suitable than this graceful Asparagus. It is planted at intervals of about 2 feet in a narrow border, and spreads and grows in a manner that shows it to be quite at home under the conditions indicated.

— VISITORS to some of the chief autumn shows cannot fail to have observed the marked excellence of the ELVASTON CASTLE GRAPES as grown and staged by Mr. J. H. Goodacre this season. Gros Colman has almost been phenomenal by the size of its berries, and other varieties were admirably represented. We have now before us samples of Mrs. Pince's Muscat, a fine full bunch and excellent berries, far above the average in colour, and of first-rate quality; Lady Downe's, superior in every way, several of the berries measuring nearly 4 in. in circumference; Golden Queen, large, clear, and spotless, more firm and "crackling" than we have before observed; and Mrs. Pearson, splendid berries, 3½ inches in diameter, speckless and of a deep golden hue, with a faint suffusion of green. The flesh is soft, and a Muscat flavour is something more than a matter of fancy. Mr. Goodacre thinks this Grape should be renamed the Winter Muscat, but he must consider that it is not usual to see it in the high condition represented by the sample before us. We should like to know how long this Grape continues fresh at Elvaston. There is not the faintest sign of shrivelling now, but there is in the berries of Golden Queen. We regard the cultivator as too good a man to have any "little secrets," and he might perhaps not be afraid to state at some time the method he adopts in producing such very fine Grapes.

— A STEADY but marked change in the public taste for food is noticeable, in London at least, and this in the direction of VEGETARIANISM. Vegetarian dining rooms are increasing in number, and vegetarian dinners are provided at hotels and restaurants. The London Vegetarian Society, under the energetic superintendence of Mr. W. S. Manners, loses no opportunity of pressing forward the claims of a vegetarian diet on the grounds of economy and health. With this object what was called a fruit banquet, or special table d'hôte dinner, was held at the Queen Victoria Restaurant, 303, Strand, London, on the 3rd inst., when the following menu was provided:—"Soups: Brown Haricot, Artichoke, Porridge; Wheatmeal, Semolina. Savouries: Lentil Pie and Apple Sauce, Tomato Farcie and Rice, Macaroni au Gratin, Vegetable Fritter. Vegetables: Mashed Potatoes, Baked Potatoes

Brussels Sprout, Haricots, Stewed Celery, Tomatoes, Fried Parsnips, Baked Turnips (in milk). Hot Sweets: Gooseberry Tart and Custard Sauce, Christmas Pudding, Dietetic Pudding, Milky Rice Pudding, Stewed Apples and Raisins, Stewed Pears. Cold Sweets: Stewed Apricots, Figs, French Plums. Dessert:—Grapes: Black Hamburgh, A'meria. Pears: Duchesse d'Angoulême, Beurré Diel, Napoleon. Apples: Cox's Orange, Blenheim, and Ribston Pippins, Scarlet Nonpareil. Oranges. Medlars. Raisins. Nuts: Almonds, Filberts, Walnuts. Cheese. Butter Biscuits. Coffee. Draught Lemonade. Seltzer. Russian Tea." All for 2s. The large room was crowded. Excellent collections of Apples and Pears were exhibited by Messrs. Bunyard & Sons, Maidstone; Cheal & Son, Crawley; F. & A. Dickson and Sons, Chester; and Andrew Johnstone, Esq., Woodford. Addresses were delivered enforcing the benefits derivable from a more extensive consumption of fruit and vegetables by the community.

THE LATE M. AUGUSTE VAN GEERT.

THE following is the address of M. le Comte de Kerchove de Denterghem, delivered on the occasion of the interment of the above-named horticulturist, and admirably portrays his character and honourable career.

The Royal Agricultural and Botanic Society is to-day again in mourning. It is assembled around the coffin of one of its most distinguished members, and I come in its name to say a last and supreme farewell to Auguste Van Geert—to one of the men who have contributed the most to its prosperity.

A curious and interesting figure was that of this old horticulturist, representing among us the strong and virile race of earnest gardeners to whom we owe the development of our culture and the renown of our Society. He had met in his paternal home those distinguished amateurs Van Saceghem, Vander Woestyne, Auguste Mechelynck, Buyck, Vander Straeten, De Loose, and Van Coetsem, to whom our Society owes its creation. He had met there also those intelligent gardeners Verleenwen, P. J. De Cock, Alexandre Verschaffelt, Coene, and many others, whose names are inscribed on the first page of the golden book of Ghent horticulture.

A contemporary of Spae, of Ambroise and Jean Verschaffelt, and of Louis Van Houtte, he had assisted at the modest commencement of our industrial horticulture, and he loved—not without a pardonable pride—to recall the active part he had taken in promoting its development.

An energetic worker, Auguste Van Geert attained, by the force of his will, an exceptional position in commercial horticulture. His was a life essentially consecrated to work.

His infancy was rough and laborious. His father, Jean Van Geert, of whom the good-fellowship and scrupulous probity remain legendary amongst our gardeners, fully comprehended the importance of a good professional education. Severe for himself and others, he did not hesitate to send his son to England.

This was in 1830; Auguste Van Geert was then twelve years old. Those of you alone who know the difficulties and dangers which attended a journey beyond the Channel at this period can say how much energy, firmness and uprightness of conduct were required to command success. Nothing could discourage the young apprentice. He commenced work in the nursery of Messrs. Knight & Perry, the celebrated predecessors of Messrs. Veitch, and by the integrity and loyalty of his character he quickly won the esteem of his employers and the sincere affection of his fellow workmen. From this time he became intimate with the most illustrious English horticulturists, and his friendly relations with them were maintained till the end.

On his return to Belgium Van Geert resumed his place in his father's establishment. But he felt that his energies were there too confined; he had a longing for the exotic plants, and he dreamed of cultivating them at Ghent with the same care that the English horticulturists devoted to them. Thanks to fortunate circumstances he was able to realise this dream. The twig became a tree, and made a stem in its turn.

The importance of the new establishment grew rapidly. It soon became that which it remains to-day—one of the three most important establishments of the town of Ghent. At the same time that Van Geert introduced into Belgium new plants, he made our gardeners acquainted with the most recent scientific discoveries, and showed them new methods of propagating plants, choosing the most certain and perfect of those which he had seen practised in England. His establishment thus became a veritable school of practical horticulture, and acquired an European reputation.

The Royal Agricultural and Botanic Society, desirous, at this period, of having among its members all intelligent horticulturists, did not hesitate to invite him in 1844 to take his place amongst its active members, and to come and seat himself beside his father, whose nomination took place in 1819.

A member of the Society, Auguste Van Geert took during nearly half a century the most active part in our horticultural exhibitions.

The successes which he obtained were considerable; each year he secured the highest and most coveted distinctions. It was amidst the unanimous applause of Belgian and foreign horticulturists that, in 1873, His Majesty the King named him Chevalier of his order. It was at this epoch that he was called to join the Council of Administration of the Society.

All his colleagues will love to recall the frank and loyal relations which they had with a man of whom the character and the services inspired in all the most profound and lasting esteem.

Among us, as amongst his own kindred, his memory will be respectfully preserved; his name will survive him in the horticultural world. The name which two generations of horticulturists have made illustrious will continue, we who know his children can say with confidence, to be borne with that dignity, that uprightness, and that self-respect which were the characteristics of the two preceding generations.

May the regrets of all those who surround the coffin assuage the pain to which this earthly separation gives birth in the hearts of his children and grandchildren. May they convey to the afflicted soul of his loving and devoted companion in a long and noble life of work the softest of consolations—the tender expression of profound mourning which strikes all those who have at heart the prosperity of national horticulture.—(Translated from the *Journal de Gand* by WALTER P. WRIGHT.)

PRUNING AND NAILING.

THIS is an operation that should be proceeded with in earnest as soon as the trees have shed their leaves. Mild or sunny days must, however, be selected for doing the work, because the men can then do so much more and better work than when their fingers are so benumbed with cold that they can hardly hold nail or hammer. Fortunately for the young gardeners of the present generation, the "stick-to-nailing-all-weather" system has almost become a thing of the past, for most gardeners nowadays regulate their work with more common sense than their predecessors. Hence it is that on cold and frosty mornings manure has to be wheeled on to vacant ground, to be subsequently dug or trenched into it, or it may be between fruit trees, or as a mulching between rows of Raspberries or Strawberries; and later in the day, when the sun shines forth, the work of pruning and nailing the trees is proceeded with, shifting from one wall to another as the sun moves round towards the west, so as to be working under its genial influence as long as possible, thereby rendering the work one of pleasure and pride instead of hardship, as well as enabling those engaged to do, as already stated, more of it.

As a rule, pruning and nailing our Morello Cherry trees is proceeded with first, because on account of the great number of shoots which have to be manipulated they require, like the Peach, more time and judgment to train them properly than either the Plum or Pear, and, moreover, they shed their leaves first. Like the Peach, the Morello only needs the shoots to be thinned out a little, leaving, of course, as many young growths as are required to cover the wall at 3 or 4 inches apart, cutting back the old one to their base, and also any foreright shoots that may have formed during the summer to one wood bud. Strong leading shoots should also be removed where it can be done, so as to induce a balance of growth in the tree—that is, an equal distribution of the shoots over the space prescribed to each tree on the wall, and these, trained at the distance indicated, should radiate at the same angle from the centre on either side. It is hardly necessary to say that shreds should be used in proportion to the thickness of the shoots which they are intended to secure to the wall. Shreds of light material about three-eighths of an inch wide will be the proper width for Morello Cherry, Peach, and Plum shoots of the current year's growth, using stouter and wider shreds for securing the principal branches to the wall with, and leaving sufficient room in each shred for the development of the individual shoots which they encircle.

In pruning trees of the Pear, Plum, and Apricot the shoots must be spurred back to the wood bud nearest to their bases, and the old spurs where too close to each other on the individual branches be thinned out a little, as anything like overcrowding of the spurs and shoots, whether on trees under glass or out of doors, should be avoided as a great evil in fruit culture, otherwise satisfactory results need not be expected.

Before nailing any trees that are infested with brown scale or thrip, which if not destroyed will themselves destroy the trees in a few years, should be taken from the wall by removing therefrom the nails and shreds, to enable every particle of the branches so affected to be thoroughly painted with a mixture of softsoap and petroleum at the rate of 4 ozs. of the former dissolved in a gallon of warm water to one wineglassful of the latter, to which sufficient clay and a handful of fresh soot, and the same quantity of flowers of sulphur may be added to give the consistency of paint. This must be applied to the trees with a paint brush, taking care in doing so not to knock off the fruit buds. It is certainly a tedious process, but I find it is more effectual than the solution of softsoap and petroleum at the same strength as recommended above, applied to the infested trees with the syringe, inasmuch as the latter, in addition to its not adhering sufficiently long to the shoots to be effective, fails to reach all the insects on the wall side of the individual branches; in which case there remains a sufficient number of untouched insects to establish a fresh colony the following year.

When Peach and Nectarine trees have shed their leaves the majority of the young shoots should be disnailed, leaving only a sufficient number of the principal branches secured to the wall to prevent the individual trees from sustaining injury by rough winds, the object in view being to retard the flowering period of the trees by keeping them somewhat away from the walls, which latter conserve and radiate the heat imparted to them by the sun, until the approach of spring, when perforce the trees must be pruned, painted with the mixture recommended above if necessary, and nailed in their proper positions to the wall.—H. W. WARD.

CARNIVOROUS PLANTS.

(Mr. Latham's Lecture.—Continued from page 492.)

It is interesting to note here that Darwin from these experiments came to the conclusion that "the gland has the power of absorption as well as the power of secretion," and this was suggested by Dr. Hooker in his paper on *Sarracenia* in 1874 previous to Darwin's investigations being published. He observed "that a gland when excited, not only sends some influence down its own tentacle, causing it to bend, but likewise to the surrounding tentacles, which become incurved, so that the bending place can be acted on by an impulse received from opposite directions—namely, from the gland on the summit of the tentacle, and from one or more glands of the neighbouring tentacles." Darwin goes on to say: "These results led me to inquire whether the *Drosera* possessed the power of dissolving solid animal matter, this experiment proving that the leaves are capable of true digestion, and that the glands absorb the digested matter." These are perhaps the most interesting of all Darwin's observations on the *Drosera*, and no such power was before distinctly known to exist in the vegetable kingdom. It is also an interesting fact that the glands of the disc when irritated should transmit some influence to the glands of the exterior tentacles, causing them to secrete more copiously and the secretion to become acid. The gastric juice of animals contains, as is generally known, an acid and a ferment, both of which are indispensable for digestion, and so it is with the secretion in the *Drosera*. When the stomach of an animal is mechanically irritated it secretes an acid. When particles of glass or other such objects are placed upon the glands of the *Drosera*, the secretion in these and the surrounding untouched glands was increased in quantity and became acid. But Schiff records that the stomach of an animal does not secrete its proper ferment, pepsin, until certain substances, which he calls Peptogenes, are absorbed. Darwin also goes on to say, "It appears from my experiments that some matters must be absorbed by the glands of the *Drosera* before they secrete their proper ferment, and from trials made with a large number of substances, it was found that those in which the secretion of *Drosera* dissolves, completely or partially, or not at all, are acted upon in exactly the same manner by gastric juices." We may therefore conclude that the ferment of *Drosera* is closely analogous to, if not identical with, the pepsin of animals.

Darwin, by his experiments on the leaves of *Drosera*, clearly proves that this little plant of our bogs is capable of digesting such substances as meat, cartilage, bone, &c., and experiments made with other species of *Drosera*, both British and exotic, show conclusively that they are adapted for catching insects and feed on their decomposing matter. The *Cephalotus follicularis*, an Australian Pitcher Plant, a native of swampy places in King George's Sound, is a lovely little plant with a short stem and small leaves, the pitcher-like bodies having the mouths furnished with a thickened and regular notched rim, forming a most perfect trap. This little plant belongs to a natural order of its own, *Cephalotaceæ*, and is placed in the natural system between *Crasulaceæ* and *Saxifragaceæ*. The *Nepenthes* is an interesting genus, which, strange to say, has no representative in the New World, although we might have expected that some species would have been found amongst the many suitable places for the growth of the *Nepenthes*. This genus has a wide geographical range in the Old World. In these plants we have a wonderful provision in the pitcher-like appendages which hang so gracefully from the leaves, and which are often mistaken for the flowers of this plant. And for the information of any of our members who may have fallen into this error, I may just explain that the *Nepenthes* belongs to the class *Dioecia*, plants that contain male flowers on one plant and female flowers on another plant, and flowers from the axils of the leaves. These pitchers contain a water-like liquid before the lid of the pitcher has ever been opened, demonstrating that the liquid is a secretion of the plant. According to experiments made by Mr. Lawson Tait of Birmingham, at the Botanical Gardens here a few years ago, no traces of

an acid was found in this liquid until some insect or animal matter was introduced, after which traces of acid were found, showing that the animal matter acted on certain glands of the inside of the pitchers, which caused them to give off an acid to assist decomposition.

The genus *Sarracenia* comprises about five species and several very beautiful hybrids which have been raised during the last few years. The species are natives of the Atlantic coast of North America. From California we have *Darlingtonia californica*, a beautiful plant allied to *Sarracenia*. We have also another plant, only as yet found growing in British Guiana, *Heliamphora natans*, also belonging to the *Sarracenia* family, a plant very rare indeed, even if in cultivation. *Aldrovanda vesiculosa* is an European aquatic rootless plant, also supposed to exist on entrapped insect matter. *Drosophyllum lusitanicum* is a rare plant, found only in Portugal and Morocco, and belonging to the *Drosaceæ* family, and it is surprising the quantity of small insects a healthy plant will capture. *Rosidula dentata* is an ally of *Drosophyllum* and from the Cape of Good Hope, and is not in cultivation. *Byblis gigantea*, from Western Australia, a member of the *Drosera* family, also is not in cultivation. *Pinguicula vulgaris* is a plant found growing in moist places in mountainous parts of Britain, and there are several other species no doubt insectivorous. *Utricularia vulgaris* (the Bladderwort) is also a rare British plant which traps insects by means of its bladders, and there are some exotic species. It is scarcely necessary for me to point out that there are persons who do not believe these plants obtain food from the decomposing insect matter, but a careful reading of the evidence resulting from the long, patient, and minute investigations by the late Mr. Charles Darwin should convince the most sceptical, that he must come to the conclusion that these insect-catching plants do feed on such decomposing insect matter through their leaves. In many cases these plants are found growing under conditions where they cannot obtain sufficient food through their roots, hence the use of their leaves to make good the deficiency. Anyone growing the *Dionæa* or some of the *Droseras* must in potting them have been struck with the small amount of root these plants have. It is quite possible there are insectivorous plants amongst other families; for instance, the *Bromeliaceæ* plants of the Pine Apple family. They have rigid, channelled spiny leaves, and are mostly natives of the tropics, and some of them are rootless air plants, and the foliage is so constructed as to form perfectly water-tight compartments. I have seen no mention of those plants being carnivorous, but they seem so well adapted to catch insects, and being plants in some cases with very little root and in others no root at all, they must to a large extent be leaf-feeders. We also have amongst some of these *Bromeliaceæ* plants most lovely coloured foliage, just the colours to attract insects to the water reservoirs at the base of the leaves. Then, again, we have such plants as the *Silene* (Catchfly), so named because of the viscid moisture on the stalks of many of the species, also the viscid moisture on the buds of the Horse Chestnut, *Mimulus glutinosus*, some of the *Sempervivums*, and many other plants which could be named, all of which catch small insects by their viscid matter. It may well be asked, Are these plants carnivorous or not? or, in other words, Do they feed on the insects caught on their stems or flowers?

In illustration of this paper, Mr. Latham used the following plants:—

<i>Drosera capensis</i> ...	...	Cape of Good Hope.
" <i>spathulata</i> ...	...	Australia.
" <i>binata</i> ...	...	do.
" <i>rotundifolia</i> ...	...	Britain.
<i>Sarracenia Drummondii</i> ...	...	North America.
" <i>flava</i> ...	...	do.
" <i>rubra</i> ...	...	do.
" <i>purpurea</i> ...	...	do.
" <i>Chelsoni</i> ...	...	Hybrid.
<i>Dionæa muscipula</i> ...	...	North America.
<i>Nepenthes distillatoria</i> ...	...	China.
" <i>phyllamphora</i> ...	...	do.
" <i>Rafflesiana</i> ...	...	Singapore.
<i>Vriesia brachystachya</i> ...	...	...
<i>Darlingtonia californica</i> ...	...	California.

Mr. Cooper, gardener to the Right Hon. Joseph Chamberlain, M.P., also kindly contributed *Nepenthes Hookeriana*, *N. ampullacea vittata*, *N. lœvis* and *N. hybrida*, *Darlingtonia californica*, and *Drosera rotundifolia*.

LATE GRAPES.

LAST week the sun shone brightly after several days of dull foggy weather, giving me a splendid opportunity of looking over hanging Grapes. I was pleased to find less decay than is usual at this season of the year. I always consider November the worst month, much more so

than December, for decay or loss in the berries. This is no doubt occasioned as much by the quantity of foliage as anything, though of course there are other causes, such as drips, which is frequently the result, not of faulty glazing or cracked squares, but condensed moisture settling on a lateral, then finding its way into a bunch; again a tie will be often a stop for a drop of water. Spiders are a very fruitful cause of waste. They will now be making their nests, and if they get into a bunch of Grapes many berries will be lost. This morning I noticed on one of my best Gros Colman a suspicious-looking berry. I carefully pulled it off, and there was a live wasp, which caused me to cut out two other berries. Fortunately this bunch was not thinned as much as usual, so when I had done my cutting the higher berries dropped down, so the bunch is perfect. This is only another illustration how watchful a man must be who has Grapes to keep. Weekly looking over is very well, daily is much better.

At this period of the year the less front ventilation the better. Of course, my fires are always going, and I can generally—at least, in the day if not at night—keep some top ventilation on, so that I have a circulation of warm air. This past two weeks have been very trying to amateurs, as in small mixed houses which have to be used as receptacles for other plants it must be a very difficult matter to keep a sweet atmosphere. Undoubtedly the larger the house, always provided there is boiler power according, the better will Grapes keep, and these large structures can be used in moderation for storing bedding plants, the latter, however, to be kept free from decayed leaves. I know a small house containing Alicante, Gros Maroc, and Black Hamburg Grapes. The house was full of plants, Tomatoes, &c. I advised cutting a fortnight since, but now all the Black Hamburg bunches are past selling and the others are not improved, but on the contrary have lost in weight by decayed berries, and have not the finish they had. Grapes, unless well kept, lose their bloom. Top ventilation is of the utmost importance; no roof should be without it.

Cutting and bottling is done by many as soon as possible, but the curious summer we had will make all Grapes late, and foliage which other years has been gone will be much later. This late foliage will, no doubt, be of benefit to the Vines by causing the roots to finish their work, but this foliage is no good, or rather the reverse for keeping fruit. Much may be done even now by carefully removing some laterals, especially if there is any green or sub-laterals, so as to gradually get the sap down, and at the same time prepare the bunches for keeping.—STEPHEN CASTLE, *West Lynn*.

THE ORCHID FAMILY.

IN reply to a correspondent who desired a brief description of the classification adopted in the Orchid family the following is submitted, and will perhaps be to some extent interesting to others as showing the relationship of the different genera.

The late Mr. G. Bentham studied these plants very carefully from a botanical point of view, and the results of his investigations are embodied in Hooker & Bentham's "Genera Plantarum," several modifications being made in the genera previously accepted by authorities. A total of 334 genera are fully described, seven others being mentioned of which insufficient material had been obtained. These are classed in five tribes—namely, Epidendreae, Vandae, Neottiae, Ophrydeae, and Cyripedieae, with numerous secondary divisions termed sub-tribes. The Epidendreae comprises eighty-eight genera, including such well-known garden Orchids as Masdevallia, Dendrobium, Phaius, Chysis, Cœlogyne, Calanthe, Epidendrum, Cattleya, Lælia, and Sophronitis. The next tribe, Vandae, is much the largest of all, including 135 genera, of which may be specially mentioned as examples of the best known—Cymbidium, Zygopetalum, Lycaste, Anguloa, Stanhopea, Catasetum, Maxillaria, Oncidium, Miltonia, Odontoglossum, Ada, Phalaenopsis, Aerides, Vanda, Saccolabium, and Angraecum. The third tribe, Neottiae, has eighty-two genera, comprising Vanilla, Sohralia, Anæctochilus, and Goodyera; the fourth, Ophrydeae, thirty-two, including Orchis, Ophrys, and Disa; while the fifth, Cyripedieae, has only four, Cyripedium and Selenipedium being the best known.

In the following list the genera are arranged under their respective tribes and sub-tribes in order adopted by Mr. Bentham.

TRIBE, EPIDENDREAE—

Sub-tribe, *Pleurothallae*.

Plenrothallis, Stelis, Physosiphon, Lepanthes, Restrepia, Brachionidium, Masdevallia, Arpophyllum, Octomeria, Meiracyllium.

Sub-tribe, *Malaxae*.

Malaxis, Microstylis.

Sub-tribe, *Lipariae*.

Oberonia, Liparis, Platyclinus, Calypso, Aplectrum, Corallorhiza, Tipularia, Oreorchis, Hexalectris.

Sub-tribe, *Dendrobieae*.

Dendrobium, Latourea, Bulbophyllum, Sunipia, Cirrhopetalum, Megacelinium, Trias, Osyricera, Drymoda, Monomeria, Dendrochilum, Panisea, Acrochane, Chrysoglossum, Collabium.

Sub-tribe, *Eriæ*.

Cœlia, Eria, Phreatia, Pachystoma, Spathoglottis.

Sub-tribe, *Bletiae*.

Acanthephippium, Phaius, Bletia, Chysis, Nephelaphyllum, Tainia, Anthogonium.

Sub-tribe, *Cœlogyneae*.

Josepha, Earina, Glomera, Agrostophyllum, Ceratostylis, Callostylis, Cryptochilus, Trichosma, Cœlogyne, Otochilus, Pholidota, Calanthe, Arundina, Eileanthus.

Sub-tribe, *Stenoglosseae*.

Lanium, Amblostoma, Seraphyta, Diothonea, Stenoglossum, Hormidium, Hexisia, Scaphyglottis, Hexadesmia, Octadesmia.

Sub-tribe, *Lalieae*.

Alamania, Pleuranthium, Diacrium, Isochilus, Ponera, Pinelia, Hartwegia, Epidendrum, Broughtonia, Cattleya, Læliopsis, Tetramicra, Brassavola, Lælia, Schomburgkia, Sophronitis.

TRIBE, VANDEAE—

Sub-tribe, *Eulophiae*.

Eulophia, Lissochilus, Galeandra.

Sub-tribe, *Cymbidieae*.

Cymbidium, Ansellia, Grammangis, Cremastra, Cyperorchis, Geodorum, Grammatophyllum, Dipodium, Thecostele, Bromheadia, Polystachya.

Sub-tribe, *Cyrtopodieae*.

Plocoglottis, Cyrtopodium, Govenia, Pteroglossaspis, Zygopetalum, Grobya, Cheiradenia, Aganisia, Acacallis, Eriopsis, Warrea, Lycormium, Batemannia, Bifrenaria, Xylobium, Lacæna, Lycaste, Anguloa, Choudrorhyncha, Gongora.

Sub-tribe, *Stanhopeae*.

Coryanthus, Stanhopea, Houletia, Peristeria, Acineta, Catasetum, Mormodes, Cycnoches, Chrysocynis, Polycynis.

Sub-tribe, *Maxillariae*.

Stenia, Schlumia, Clowesia, Mormolyce, Scuticaria, Maxillaria, Camaridium, Dichæa, Ornithidium.

Sub-tribe, *Oncidieae*.

Cryptocentrum, Diadenium, Comparettia, Scelochilus, Trichocentrum, Rodriguezia, Trichopilia, Aspasia, Cochlioda, Dignathe, Saundersia, Brachia, Odontoglossum, Oncidium, Miltonia, Brassia, Solenidium, Leiochilus, Sigmatostalix, Erycina, Gomeza, Abola, Neodryas, Ada, Trizeuxis, Sutrina, Trigonidium, Ionopsis, Cryptarrhena, Ornithocephalus, Quekettia, Zygostates, Phymatidium, Chytroglossa, Hofmeisterella, Kegelia, Papperitzia, Cohnia, Paradisanthus, Sievekingia, Cœliopsis, Warmingia.

Sub-tribe, *Sarcantheeae*.

Lockhartia, Centropetalum, Pachyphyllum, Luisia, Cottonia, Stauroopsis, Arachuanthe, Phalaenopsis, Doritis, Rhynchostylis, Sarcophilus, Trichoglottis, Aeranthus, Aerides, Renanthera, Vanda, Saccolabium, Uncifera, Acampe, Sarcanthus, Cleiosostoma, Schœaorchis, Ornithochilus, Taniophyllum, Microsaccus, Diplocentrum, Augræum, Cryptopus, Æonia, Mystacidium, Dendrophylax, Campylocentrum.

Sub-tribe, *Notyliae*.

Cirrhaea, Macradenia, Notylia, Acriopsis, Telipogon, Trichoceros, Podochilus, Appendicula, Thelasis.

TRIBE, NEOTTIEAE—

Sub-tribe, *Vanillae*.

Galeola, Vanilla, Sobralia, Epistephium, Sertifera.

Sub-tribe, *Corymbieae*.

Corymbis, Tropidia.

Sub-tribe, *Spirantheae*.

Altensteinia, Pterichis, Cranichis, Prescottia, Ponthieva, Wulfschlagelia, Pseudocentrum, Gomphichis, Stenoptera, Neottia, Listera, Spiranthes, Baskervilla, Pelexia, Physurus, Anæctochilus, Vrydagzenia, Cystorchis, Herpysma, Zeuxine, Chirostylis, Odontochilus, Myrmecis, Hæmaria, Dossinia, Macodes, Hylophila, Goodyera, Lepidogyne, Heteria, Moerenhoutia, Platylepis, Manniella, Eucosia, Gymnochilus, Argyrorchis.

Sub-tribe, *Diurideae*.

Lecanorchis, Aphyllorchis, Stereosandra, Thelemitra, Epiblema, Diuris, Orthoceras, Cryptostylis, Prasophyllum, Microtis, Corysanthes, Pterostylis, Caleana, Drakæa, Acianthus, Eriochilus, Lypuranthus, Burnettia, Cyrtostylis, Caladenia, Glossodia, Adenochilus, Chiloglottis, Calochilus.

Sub-tribe, *Arethuseae*.

Arethusa, Calopogon, Pogonia, Pogoniopsis, Chlorosa, Lencorchis, Gastrodia, Yoania, Epipogon.

Sub-tribe, *Limodoreae*.

Limodorum, Chloræa, Bipinnula, Cephalanthera, Epipactis.

TRIBE, OPHRYDEAE—

Sub-tribe, *Serapieae*.

Orchis, Serapias, Aceras, Ophrys.

Sub-tribe, *Habenariae*.

Herminium, Stenoglottis, Arnottia, Bartholina, Huttonæa, Holothrix, Bicornella, Habenaria, Diplomeris, Bonatea, Cynorchis, Hemipilia, Glossula.

Sub-tribe, *Diseae*.

Satyrion, Pachites, Disa, Herschelia, Monadenia, Schizodium, Brownleea, Forficaria, Brachycorythis, Schizochilus, Platycoryne.

Sub-tribe, *Corycieae*.

Pterigodium, Disperis, Corycium, Ceratandra.

TRIBE, CYRIPEDIEAE—

Cyripedium, Selenipedium, Aspostasia, Neuwiedia.

It may be mentioned that the under-mentioned genera are now reduced to those of which the names follow, and under them will be found in most modern botanical works:—Ipsea to Pachystoma; Paxtonia to Spathoglottis; Thunia and Limatodes to Phaius; Pleione to Cœlogyne; Limatodes rosea to Calanthe; Bark-ria and Nanodes to Epidendrum; Leptotes to Tetramicra; Zygopetalum, Huntleya, Bollea, Warszewiczella, and Promenæa to Zygopetalum; Paphinia and Colax to Lycaste; Acropera to Gongora; Helcia to Trichopilia; Mesospindium to Odontoglossum; Palumbina to Oncidium; Odontoglossum vexillarium to Miltonia; Camarotis to Sarcophilus; Listrostachys to Angraecum; Sanroglossum, Sarcoglottis, and Stenorhynchus to Spiranthes; Gymnadenia, Peristylis, Cœloglossum and Platanthera to Habenaria; and Uropedium to Selenipedium.

CHRYSANTHEMUM NOTES.

THE CHRYSANTHEMUM OF THE FUTURE.—At the New York Chrysanthemum Show, just over, there were exhibited four varieties, representing as many distinct classes, for which there is a brilliant future.

First on the list is John Thorpe, jun. This to me is the most beautiful Chrysanthemum ever raised; it is a beautiful clear yellow very large Japanese Anemone, and will in the very near future reap a golden harvest as a out flower alone. No better proof of this can be had than to state that on the opening day a fine single bloom of this was pinned on a lady's dress (black), and inside of half an hour over thirty ladies inquired of the wearer where they could buy a flower like it, and disappointment was plainly expressed in every applicant's face when told that that particular variety was not for sale. Some at a distance went so far as to remark (not intended for the wearer's hearing, of course) she must have stolen it or we could get it also. Were I the fortunate holder of the entire stock of this variety I think I could easily make a rich harvest from it, for in the Chrysanthemum yellow is undoubtedly the most sought colour by the majority of the ladies. I well remember the sensation that grand old variety, Temple de Solomon, caused when first grown in quantity, and what an impetus it gave to this popular flower.

The next in point of merit for all purposes is J. Delaux (raised by Delaux), a very deep crimson, and will most certainly be a grand flower for all purposes and a fit companion to the above; the colour will also be shown off all the better by placing it side by side with the first named.

Next in point of novelty comes Mrs. Grover Cleveland, a Japanese variety, but quite distinct in character from either of the above. It is straw white, with narrow twisted petals, giving it the appearance of a glittering star in the distance, and placed as it was in a bed of Maiden-hair Fern was truly beautiful and graceful.

Last but not least comes the entirely new strain raised by Mr. Allen, a near neighbour of mine, and called Mrs. Aker Allen; it is a Japanese also, but having a distinct and decided Violet fragrance; the variety in which this most decided had a beautiful pale lemon centre. There must be a glorious future for this strain, as it overcomes the hitherto objectionable feature of Chrysanthemums to many—their rather disagreeable odour. Here we have not only a large fine flower of a very charming colour, but a delightful fragrance as well.

There were also many other very fine varieties shown, but those named above to me possessed the most striking qualities, and if Mr. Thorpe never raises another variety his name will be handed down to succeeding generations in conjunction with these two grand varieties.

The collection of best seedlings, which won the silver cup given by Jas. R. Pitcher, Esq., and exhibited and raised by Mr. Richard Brett, contained many promising varieties also, which will soon find their way into commerce. The variety named after Mrs. Langtry is also very promising; it is a very large white Japanese. Count E. Zbrowski, another grand variety, Japanese, a beautiful blending of white and lemon, base of the petals deep yellow. Prince Kamoutski, a very much improved Comte de Germiny, deeper in colour and much larger. These appear to embrace most of the novelties shown; but there was one little gem shown, Parquerette Pompon, which should be in every collection, for it attracted almost universal attention from its neat little flowers and charming colour—a clear lilac.—J. N. MAY (in *American Florist*).

CHRYSANTHEMUMS AT INGATESTONE.—The public shows now being over, one has time to look round at what may be called the private shows, and one of the best certainly that I seen is in the gardens of E. Caldecot, Esq., of Trueloves, Ingatestone, Essex. The garden is situated on a hill, the grounds are laid out very tastefully and well kept; but the object of my visit was to see the Chrysanthemums, and I was most gratified with the display. Mr. Harris, Mr. Caldecot's gardener, deserves high praise both for the judicious selection as well as for the excellent cultivation and general condition of his plants. He is well to the fore also in new varieties, incurved and Japanese, whilst at the same time not forgetting the older but not less beautiful varieties. There were certainly some hundreds of plants in full bloom when I was there, in the finest condition, all showing that Mr. Harris would be a formidable competitor at any show, some of his blooms being equal to many of the prizewinners at the Crystal Palace or Aquarium. I may also mention that the Chrysanthemum does not absorb all Mr. Harris's care, for the stove and greenhouse plants, Grapes, &c., are all admirably grown.—J. WRIGHT, *Middle Temple Gardens*.

OCTOBER CHRYSANTHEMUMS.—In answer to Mr. A. Young's remarks respecting October-blooming Chrysanthemums, I beg to say that I consider Mons. William Holmes the very best dark Chrysanthemum for blooming in October, as I have two first-class certificates which were awarded me for that variety on the 12th and 13th of October, and L'Ile des Plaisirs is another good dark variety for flowering in October, and Mons. H. Jacotot. These I consider three of the best.—G. STEVENS.

DARK OCTOBER-BLOOMING CHRYSANTHEMUMS.—In reply to Mr. A. Young, page 473, I would like to ask him first why he would confine us to October bloomers? Why at present, the first days of December, I have a south wall 200 feet long studded all over with Chrysanthemum blooms, and from which I have been cutting for more than two months. In order that there may be no doubt on the matter, I hope before the end of the week to send Editor a box of them, with some observations on the treatment and method of procedure. As a rule the early bloomers cannot compare in size or fulness to the November and December varieties, and those having a spare south wall have this year lost a great treat. In fact in my prepared borders against a south wall I have had far finer blooms than in pots. But this anon. There are very few really good dark October bloomers. I have one very dark, almost black, sent me by Mr. Cannell

about five years ago, when introduced a smallish reflexed, and having the peculiarity, like Progne, of being sweet-scented—name lost. If cuttings are taken early Dr. Sharp, Roi des Precoces, Henri Jacotot, Mons. Moussillac, François Delaux, Mons. Juan Equileor, Madame Sevin, Alex. Dufour, &c., various dark shades may be bloomed early on crown buds.—W. J. MURPHY, *Clonmel*.

NEW GLADIOLI.

As this is the season when the new varieties both in England and France are announced, it will be well to notice the aspirants for favour issuing from the two celebrated firms of Vilmorin & Co. of Paris and Messrs. Kelway & Son of Langport, reserving what I have to say concerning those of this year until I give the usual note of my own little culture by-and-by. I cannot but rejoice to find that more attention has of late been given to this autumnal flower, and although but scanty encouragement is given to it by the organisers of exhibitions in the metropolis, yet a revival in them has shown itself during the last two years. It is true that, as far as amateurs

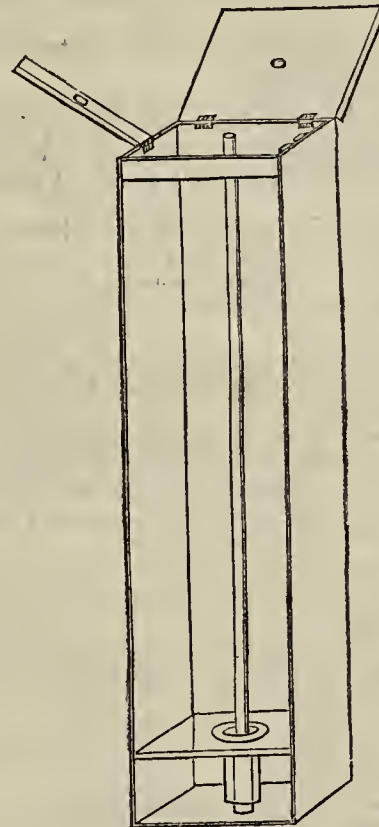


Fig. 71.

are concerned, this is mainly caused by some coming forward from the north; but surely one would say if this can be done in Durham and the northern counties, why not in the more favoured districts of the south? Perhaps we are beginning to know a little more about them, and although we cannot stop the ravages of disease we may mitigate them.

I think the theory that they do best on light soils must be abandoned. My friend, Mr. Burrell of Cambridge, who so successfully exhibited last season, has been very positive on this subject, and his contention is that where it is possible they should be planted in strong ground, of course well drained. I have proved this in my own garden this year, and although it may be that the season has had something to say to it, yet the difference between those planted in the part of the garden where the soil is light and that where I tried them this year is so manifest that I cannot but conclude that he is right. Another thing that ought to encourage their growth is their greatly reduced price. A great number of really good show varieties (some of which I have had on winning stands this year) may be had for a few pence, while I believe for £2 a very excellent lot to begin with may be obtained. Even then if they do go off in the unaccountable manner, they can be easily replaced. We buy our Hyacinths with the certainty that they will be of very little use to us for another year. We need not do the same with our Gladioli, but we may without much fear order our corms, knowing that if they do fail we shall not have to make a big dip out of our pockets to replace them.

With regard to the taking of them to the place of exhibition, I saw in Scotland this year a very ingenious plan, invented by a Mr. Smith of Kilmarnock, by which an amateur could without much difficulty take his twelve or twenty-four spikes. It will be best explained by the following diagram (fig. 71), scale 1 inch to a foot.

I saw one with the Gladioli packed in it, and not even the perverse ingenuity of destruction shown by railway porters could injure it. The central stake is about an inch square, and the Gladioli are packed back to back, so that they cannot rub, and when the box is closed the stake fits into the square place reserved for it, so that it cannot move, as the sides are covered with canvas. It is very light, and as half a dozen of these light frames would carry twenty-four blooms, they are very convenient. They would be of no use, of course, for those who bring up their 100 or 150 spikes, but for amateurs it is, I think, the best plan that I have seen. When they are laid on trays they are apt to get rubbed, and so the freshness of the blooms is spoiled; but by this plan they are kept as firm as a rock.

Messrs. Vilmorin, Andrieux & Co. announce twelve new varieties, all, with one exception, seedlings from Fontainebleau, which still have the name of Souchet attached to them, although the establishment is now conducted by Souillard & Brunelet. The exception is a seedling of Berger's. There is one peculiar novelty in the set, a hybrid raised by them from the hardy Gladioli of Lemoine's strain. When I was last at Fontainebleau they did not seem to value these for hybridising, but I suppose they have altered their opinion. The following are their varieties:—

Dictateur.—Long compact spike, centre white, pale lilac ground, with heavy carmine-red flakes.

Fra Diavolo.—Grand spike of bright orange-rose flowers, flamed with violet-red on the edges of the petals; large pale yellow spot.

Enchantresse.—Superb compact spike, flowers well opened, of enormous size, pale satiny lilac-white; violet-red line on one or two divisions.

L'Esperance.—Beautiful and curious plant, hybridised with hardy Gladiolus; flowers very large and very open, which Lemoine's seedlings are not, rosy lilac; large carmine-red spot, deeper in the centre, and surrounded with yellowish-white upon the inferior divisions, bordered with rose.

Magicien.—Medium plant; compact spike of large flowers; edge of petals wavy and fringed, centre passing to pale rose and white. This sounds like a curiosity.

Magnificus.—Grand spike of extremely large flowers, sound and open, crimson-red; beautiful white spot, with violet edge.

Marguerite.—Plant medium height, but with long spike; large compact flowers, nearly pure white, showing only a rosy or rosy-lilac eye, and a few light stripes of same colour.

Minos.—Tall plant; long spike, with very large rosy-salmon flowers, largely flaked, and spotted with cherry-red; amaranth band, and eye of same colour.

Pasteur.—Superb long spike of grand flowers of a beautiful rose colour, slightly tinged with orange; some crimson-orange stripes, rosy-white spots; buds scarlet-red.

Pollux.—Dwarf plant; compact spike, bright carmine-red, with some flakes of brownish-crimson at the edge; beautiful white spot; flowers sometimes semi-double.

Sirius (Berger).—Long spike, well furnished with flowers; lovely rose, flamed and striped with carmine; spotted with purple.

Splendens.—Long spike, furnished with crimson-red flowers; pale yellow spots on one or more divisions.

Messrs. Kelway & Son also announce twelve. Many of these have been seen in London, and have all been awarded first-class certificates, so that, independently of the well-known character of the Langport strain, their excellence is guaranteed by the position they have thus taken. They are as follows:—

Aner.—Mauve, flaked and shaded with purple.

Caens.—Cerise, flaked with rose.

Clarence.—Maroon, streaked with purple, and shaded red.

Colonel Macfee.—Lilac, flaked on a white ground.

Dora Thorne.—Cream, shaded and edged rose.

Duchess of Westminster.—White, tinted and veined with rose.

Lady Salisbury.—White, tinted flesh, flaked with carmine.

Lord Carnarvon.—Scarlet, with white throat.

Lord Rothschild.—Scarlet crimson, shaded with purple.

Miss Foster.—White, tinged flesh, flaked with rose.

Prince Henry.—Purple, with white throat.

These descriptions are much shorter than those given by the French raisers, but I do not think that they are any the worse for that; indeed it is often very difficult to imagine from them what the flower is likely to be.

Of the flowers of last season I may have something to say by-and-by (in giving my usual notes from my garden) so far as I have seen them.—D., Deal.

FORCING RHUBARB.

I AM very pleased to see that "W. P. R." has a better plan, according to his idea, than that recommended by me. His chief saving is in taking the Rhubarb roots to the manure yard. But does it not strike

your correspondent that 50 per cent. of those who force Rhubarb could not do so for want of room in those places? I think quite as much labour would be necessary in keeping up a succession and in lifting the roots, and as much ground occupied, as by having a row set apart for forcing. The question of applying fermenting materials is wholly a matter of local circumstances. Some may have his Rhubarb close to the manure yard on his frame ground, while others may not. I should certainly hesitate to recommend "W. P. R.'s" rough-and-ready mode of placing his roots on the dunghill. I have seen stalks of Rhubarb that had come up outside the pots in the ordinary mode of forcing, rejected in the dining-room on account of their having a flavour of the manure. I should not like to say that Rhubarb forced in the centre of a steaming dung mass would be wholly free from the flavour of it.—A WORKING GARDENER.

TRACHELIUM CÆRULEUM.

THOUGH cultivated in some warm districts of England as a hardy plant, the Blue Throatwort, *Trachelium cæruleum*, is best known in many gardens as a greenhouse plant. During the summer it will thrive in borders in almost any part of England, but it is liable to be destroyed in winter, and therefore can be scarcely claimed as a really hardy plant, though some have objected to its admission in classes for stove and greenhouse plants on this ground. It is a native of shady places in Italy and Levant, and has been found growing in rocky crevices on Mount Atlas. Parkinson and others mention it as being cultivated before the middle of the seventeenth century, but it was long regarded as a biennial, and treated as such, the seeds being sown in the autumn, and the plants so obtained transferred to the borders.

This plant is remarkably well grown by Mr. Molyneux, Swanmore Park Gardens, Bishop's Waltham, and an excellent specimen was shown by him at the Southampton Horticultural Society's Exhibition last August. It was about 4 feet high and as much in diameter, with fifty or sixty grand trusses (6 inches or more in diameter) of purplish blue flowers. The stems were secured to stakes, but they were not too conspicuous, and the plant altogether was very satisfactory. It is well represented in the engraving (fig. 72) from a photograph, and the cultural notes by Mr. Molyneux, which follow, will show how such an admirable result was obtained.

"To secure small single-stemmed plants in 48-sized pots, or even less, suitable for house or conservatory decoration, cuttings should be taken from the base of a plant, say in September, such shoots not having flowered the same season; make them into lengths of from 2 to 4 inches, insert in single thumb pots in sandy soil; a gentle bottom heat is an assistance in the quick production of roots. Care should be taken not to subject them to an excess of heat, or they will be drawn up weakly. A half-spent hotbed answers well; failing this a cold frame kept close will suffice. As soon as they are well rooted, give them a shift into pots one size larger, or, if the cuttings are extra strong, into the 48-size at once, using a mixture of two parts loam, one part leaf mould, some spent Mushroom bed manure, a good sprinkling of finely ground bones, charcoal and coarse sand, pot firmly and return the plants to the cold frame; keep them close for a few days until established, then admit air freely to keep them stocky. Winter the plants on a shelf close to the glass in a cool house; attend carefully to them with water, and in the spring, when the flower stems commence growing, supply liquid manure freely, and in June and July handsome heads of blossoms, one to each plant, will be the result, which in some cases may require the aid of a small stake to keep them in position. These will last a long time in flower.

"To grow the plants into specimen size it is immaterial whether they be struck in the autumn or the following spring. The time when the cuttings can best be procured is the main point, but the former period is preferable, as time is then gained by striking them early. As soon as the plants are rooted, top them by pinching out the point, to induce the production of side branches. These in turn must also be topped, training them in an outward direction by the use of stakes. A cool house simply free from frost is all the protection they require during winter. In the summer they may be stood out of doors in an open position. Still continue to top the branches, transferring the plants into larger pots until they are in those 12 inches in diameter. This size is large enough for the best specimens, using the same compost, except that when they are in large pots more charcoal and bones are required. Use the soil as rough as possible consistent with convenience in potting. Supply water freely during the summer, and syringe the plants in the evening of fine days.

"Towards the end of August a few of the strongest branches may be allowed to flower, but not the weaker ones. After this, prune those which have produced blossoms down to an eye or two below those branches not having flowered, and shorten any other growths which have become too long. Keep rather drier at the roots for a time, and winter in a cool house as before. Early in March repot the plants, first shaking off a great part of the old soil, afterwards shift into pots a size larger, which must be guided by the previous size. Keep the plants in a cool light part of the house, and early in May the flower stems will commence appearing, and the same cool treatment be continued, the plants will be in perfection from the middle of July to the end of August. As fast as the flower spikes grow (and all stems will produce blossoms, great or small) they should be tied somewhere near the position which they are to occupy when in bloom, finally staking the plants two or three weeks previous to the flowers expanding. The flower stems are best staked in an upright manner, the same as they grow; twisting or bending them into unnatural forms does not answer. The largest heads of flower will be spread evenly

over the plant, filling in the spaces between with the smaller ones. One advantage in the culture of this plant is that it is not subject to any insect pest. Nothing seems to harm it beyond perhaps a little green fly in the spring, which can easily be destroyed by fumigating with tobacco."

THE POTATO TRICENTENARY.

DECEMBER 1ST TO 4TH.

IN the brief notice we gave last week respecting the Exhibition of Potatoes at St. Stephen's Hall, Westminster, we were only able to give a few details concerning the competition, reserving a fuller report of the proceedings until the present issue. Had the International Potato Show been held at the Crystal Palace this year as usual, it is probable that the

time for development, and cannot be made too widely known to ensure even a moderate degree of success, and it is regrettable that in this case these points seem to have been partially disregarded until it was too late.

In addition to the awards at the Exhibition noticed in this Journal last week a silver medal was awarded to Mr. James Lye, Cliffe Hall, Market Lavington, for a new variety of Potato named Clipper, a white round tuber of good size, with rather deep eyes, but it cooked well, and was pronounced to be of excellent quality.

The Conference proceedings were opened on Thursday, December 2nd, at midday, Mr. W. Carruthers, F.R.S., President of the Linnean Society, in the chair, by Mr. W. S. Mitchell, M.A., reading a paper on the "Historic Consideration of the Question, Whence came the Potato to England?" The substance of this interesting and exhaustive paper was originally published



FIG. 72.—FRACHELIUM CÆRULEUM.

Conference would have been associated with it, as the subject had been proposed early in the season. An elaborate article on the history of the introduction of the Potato to this country which appeared in *Nature* called especial attention to the matter in establishing the date as 1586, and the fact that three centuries had elapsed since the first appearance of this important tuber in Europe was some justification for an attempt to celebrate the occasion by an exhibition of Potatoes and a conference of growers and others interested in the subject.

The plan sketched out was to offer gold, silver, and bronze medals for collections of Potatoes, and a silver medal for the best new variety; then to provide a department for the exhibition of old botanical, horticultural, and other works containing references to the discovery, introduction, or early cultivation of the plant. To complete the scheme a conference was arranged at which papers were to be read upon the history and culture of the Potato, to be followed by discussion. This plan was an excellent one, and it was carried into operation; but, owing probably to the late period at which the arrangements were completed and the remarkably quiet manner in which they had been conducted, the affair failed to attract the public attention that it deserved. Schemes of this kind require a considerable

in *Nature*, as already mentioned, and its chief object was to point out as the result of the reader's investigations that the Potato was introduced to England by Sir Francis Drake in 1586. It was thought that Drake had either obtained tubers from South America on one of his expeditions, or that he had captured a Spanish vessel containing some amongst their stores, either as articles of food or as curiosities for conveyance to the mother country. Probably, after relieving Raleigh's Virginian Colony, these tubers had been brought to England, the ships proceeding homewards direct from there, thus giving rise to the belief that they were originally obtained from Virginia, as Gerard states. Much evidence was adduced in support of these conclusions, but in a discussion which followed Mr. Carruthers said that he could not give entire support to the opinion, as he thought it probable that the Potato might have reached portions of North America prior to the visits of Europeans, a view which was to some extent corroborated at a later stage of the proceedings by Mr. Clements Markham, C.B., F.R.S., who gave some particulars indicating the extreme probability that communication had existed between Peru and North America at an early period. As further illustrating Mr. Mitchell's remarks, Sir Richard Pollock read a paper by Mr. W. Herries Pollock, M.A., on "Drake's Ex-

pedition of 1586," describing the voyage generally and the places called at.

"The Cultivation of the Potato by the Incas and other Andean Nations" was the subject of an exceedingly interesting paper, admirably read by Mr. Clements Markham, and was in all respects one of the best of the series, displaying a wonderful amount of careful research in dealing with a subject of almost romantic interest. In preparing this Mr. Markham no doubt resorted freely to the principal work of reference on the history and civilisation of Peru at the time of the Spanish conquest—namely, the "Commentarios Reales" of Garcilasso de la Vega, which were published in two parts in 1609 and 1617, and translated into English in 1638 by Sir Paul Rycaut. Garcilasso's mother was the niece of Huayna Capac, one of the Royal Inca line, and had every means of becoming familiar with all the peculiarities of Peruvian civilisation, thus, with some allowances for exaggeration, rendering his work the most complete of its kind. Many references are given to the book, and a *resumé* of its leading features in Prescott's "Conquest of Peru," the latter author remarking, concerning Rycaut's translation, that "It contains as many blunders as paragraphs, and most of them such as might shame a schoolboy." From these works, and a few records of the early travellers, are obtained the principal facts relating to the Peruvian history of the Potato. This was reviewed by Mr. Markham in a very clear manner. The original home of the Potato was the cordilleras of the Andes in South America, and it appeared to have been there cultivated for a great time over a space of 2000 to 3000 miles. Naturally this rendered it very difficult to determine the exact localities where Potatoes were really wild, as so many might be found as escapes from cultivation. It was found by the Spanish invaders as a cultivated plant in the kingdom of the Chibchas in the province of Quito, and from there through Peru to Chili. The Chibcha language is now extinct, but vocabularies have been preserved, and from these it appears that several varieties of Potato were grown under different names, indicating characters of size, colour, and quality. A very full account of the physical geography and system of government in these regions was also given by the lecturer, who was highly complimented by Mr. Carruthers and others at the conclusion of his excellent address. It might be added that Prescott deduces from the various authorities he consulted the facts that, "Whether indigenous to Peru, or imported from the neighbouring country of Chili, the Potato formed the staple of the more elevated plains under the Incas, and its culture was continued to a height in the equatorial regions which reached many thousand feet above the limits of perpetual snow in the temperate latitudes of Europe. Wild specimens of the vegetable might be seen still higher, springing up spontaneously amidst the stunted shrubs that clothed the lofty sides of the Cordilleras, till these gradually subsided into the masses and the short yellow grass, which, like a golden carpet, was unrolled around the base of the mighty cones that rose far into the regions of eternal silence, covered with snow of centuries." Although tuber-bearing species of *Solanum* are found wild in Mexico, it appears, according to the best authorities, that the Potato proper was unknown in Mexico at the time the Spanish first visited the country, and Humboldt has expressed his opinion that the Potatoes supposed to have been cultivated in Virginia were probably derived from the earlier and more southern Spanish settlements.

In dealing with the "distinct wild species of *Solanum* as at present recognised," Mr. J. G. Baker of Kew gave a summary with a few slight modifications of the paper he contributed some time since to the Linnean Society's Journal. He classified the thirty or more wild forms known under five types—*S. tuberosum*, *S. Commersoni*, *S. cardiophyllum*, *S. Jamesi*, and *S. oxycarpum*. These he considered might be accepted as species in a broad sense, the numerous other forms (most of which had been named and described as species) being ranged under these types. Of the *S. tuberosum* type there are sixteen so-called species, the principal of which was the Chilean *S. Maglia*, which is found in low moist regions on the coast, a similar form being discovered by Darwin in the Chonos Archipelago. The other types and their principal varieties were referred to briefly, Mr. Baker remarking that it was by no means certain whether *S. tuberosum* is really an original type or the cultivated product of some other wild form. The whole subject was a difficult one, and he wished someone would prepare an exhaustive monograph of the tuber-bearing *Solanum*. He concluded with some very complimentary remarks on the preceding paper, and stated that "a new era in the history of the Potato had been inaugurated by Mr. Markham's contribution." It may be observed that in the review of tuberous *Solanum*s from Mr. Baker's pen in the Linnean Society's Journal six distinct species or types are named, *S. Maglia* being there classed with the five already named; but it would seem from the remarks made at the meeting under notice that he has ceased to give it so high a rank, simply distinguishing it as a form of *S. tuberosum*.

After a short adjournment another meeting was held in the afternoon, at which Mr. J. G. Baker presided, Earl Cathcart being also present. Mr. G. Murray gave a very lucid description of the Potato disease (*Peronospora infestans*), illustrated by some capital diagrams. He briefly traced the history of the fungus as far it was known, referring to its first appearance on the Continent, and then in England in 1845, when it rapidly produced such destructive effects upon the Potato crop. The structure and growth of the fungus were then noted, and it was stated that from careful experiments and observations recently made it was found that if the conditions were favourable only three hours elapsed from the time a spore fell upon a Potato leaf until the perfect fungus was formed, and spores again produced, thus accounting for the rapid spread of the disease. Experiments had been tried to test the spread of the spores by placing glass slides covered with glycerine on the lee side of fields where Potatoes were infested with this fungus, and in a short time, when a brisk breeze was blowing, innumerable spores had been thus caught. (Earl Cathcart also subsequently stated that by similar experiments he had found that the spores extended to the height of 30 or 40 feet.) Mr. Murray did not think that the Jensenian system of earthing up would prove efficacious in preventing disease, and in his opinion it was communicated by the mycelium passing down through the substance of the stem to the tubers. Earl Cathcart thought that the liability to the disease was chiefly owing to degeneracy caused by over-cultivation, and it had been proved that hitherto no variety of Potato had resisted the disease for twenty years. A paper on the "Introduction of the Potato into France," read in excellent English by M. Henri Vilmorin of Paris, and

votes of thanks to the Chairman, brought the day's proceedings to a close.

The audience on Friday was even smaller than on the previous day, although the subjects were of a practical nature that it was thought would have induced a better attendance. Mr. W. S. Mitchell presided, Earl Cathcart being again present, the first address being on "The Production of Varieties by Cultivation," by Dr. M. T. Masters, F.R.S. This was commenced with an apology for the brevity and incompleteness of the paper, owing to the short notice given for its preparation. Dr. Masters then proceeded to lament the way in which practical men neglect science, and gave as one illustration of this the loose nomenclature adopted with regard to the fruit of the Potato, which is generally called the Potato plum or Potato apple, when everyone knows that Apples and Plums are so very different. As another example, he alluded to the result of the prizes offered some years ago for the best essay on the mode of preventing the Potato disease. He then referred to the modes of producing varieties of Potatoes, taking first what he considered the principal method employed by cultivators—namely, the selection of tubers. Next came cross-breeding—namely, the fertilisation of one variety with the pollen of another, which was frequently erroneously termed hybridising. Third, true hybridisation—namely, the cross-fertilisation of one acknowledged species with another of similar rank. As a fourth means grafting was noticed as a possible mode of increasing varieties. Mr. Alexander Dean, in reply to Dr. Masters, said that it might be true that some practical men neglect the teachings of science too much, but it was quite certain that the scientists were equally neglectful of the practical men, and yet to these science often owed a large debt. He was always willing to learn anything that was beneficial, and if Potato apple and Potato plum were wrong he would be content henceforth to use the term "Potato berry," but it seemed to him that any term generally in use and understood was preferable to one that was not so well known. As to the essay competition mentioned, he believed that at the time scientific men knew very little more about the Potato fungus than the gardeners who competed. With regard to procuring varieties of Potatoes by selection he had never heard of the practice, and although himself a Potato-raiser, he did not remember one variety which had been so obtained. Cross-breeding was the only successful means, and in that way probably 1000 varieties had been reared from seed. There are now so many good varieties in cultivation that he did not think there was much room for improvement, except in finding disease-proof sorts. He had tried grafting, but did not find the results satisfactory, and he was convinced that nothing of importance was to be expected in that direction. Mr. Arthur Sutton said he had never known new varieties of Potatoes to be raised by selecting the tubers. Dr. Masters was surprised that this method was not the principal one adopted, but supposed that in any case selection would be beneficial in maintaining the character of varieties. Mr. W. Earley remarked that selection was undoubtedly advantageous in this way, but useless for the purpose originally suggested. Mr. R. Dean thought extensive experiments in hybridising might be undertaken at Kew, but he understood it would be difficult to accomplish satisfactorily. Mr. Ap-Thomas, who had resided in Peru for a long period, made a few remarks upon the Potatoes there cultivated, stating that three varieties were principally grown from the coast up to 8000 feet elevation. The Yellow Potato was the principal, and this he had tried in Wales. He had never seen or heard of the Potato disease in Peru.

"The Cultivation of the Potato," by Mr. R. Dean, was the next paper, and it treated in a succinct manner the principal points of the subject. Referring to the propagation for exhibition, he stated that a very successful grower always adopted the following method. Of weak varieties the best tubers only were selected, all the eyes but one being removed; of medium varieties, medium-sized tubers were selected, retaining only one eye; of strong varieties, medium tubers were chosen, but these were cut in two sets, each having one eye. He did not believe in the degeneracy of the Potato, as by well selected tubers it was easy to maintain the character of varieties. As an example of degeneracy, he mentioned the Bedfordshire Onion, which had been gradually deteriorating because the best had been continually sent to market. The tubers for field culture were often turned several times and the eyes repeatedly rubbed off, this also having an injurious effect. A good deep soil is necessary for the successful culture of the Potato, choosing land where manure was applied for a crop of any kind that is cleared off in autumn. This should be well dug and exposed to the air, better crops being obtained from such land than if the digging is left to the spring. No rank manure should be used at the time of planting, but capital crops had been secured from ground occupied with Celery the previous season. Failures in field culture are largely due to shallow ploughing; deep tillage is very necessary, improving heavy soils by burning or mixing it with ballast. He instanced the White Rock Potatoes from Youghal, Co. Cork, grown by the peasantry year after year on the same ground, as showing degeneracy in its worst form. Earthing in garden culture should be done carefully, and though the Jensenian system may not prevent disease, deep covering is beneficial to many varieties. It was mentioned incidentally that of 146 varieties sold by Peter Lawson & Co. 50 years, scarcely one remains in culture.

Mr. Alexander Dean read an interesting paper on "Raising New Varieties of Potato," in which he referred only to the production of new forms by cross-breeding. He commented on the difficulty of obtaining pollen, as comparatively few yielded it in abundance, and some were quite sterile. Several experiments and crosses were detailed which had resulted in obtaining novelties that have secured high honours. Mr. Fenn's efforts to produce a race of fine quality were noticed approvingly, and Mr. Dean thought some of these had never been excelled. Mr. W. Earley gave a few practical observations "On the Advantage of Early Lifting as a Prevention of Disease," which he illustrated by some fine sound tubers he had grown and treated in this way, when others left in the ground were destroyed by the disease.

The meeting concluded with a proposal that a Potato Society might be formed as one result of the Tercentenary gathering, but it was ruled by the Chairman that the matter could not be considered then, and if it were desirable it might be discussed in the columns of the Horticultural Press.

A SELECTION OF FLOWER SEEDS.

ACACIA LOPHANTHA is a useful plant both for room decoration and sub-tropical bedding; the seed should be well soaked before sowing

Amaranthus melancolicus ruber, a useful red-foliaged plant for bedding in warm situations. *Ammobium alatum grandiflorum*, one of the best of the Everlastings, and very useful for bouquets either green or dried. *Aquilegia cœrulea*, *hybrida*, and *chrysantha* are good selections, but all the varieties are quite worthy of cultivation. Aster.—Dwarf German Asters were very successful with us this year. They were perfect pyramids, the flowers being wedged together quite tightly, and they were a fortnight earlier than other sorts. The dwarf *Chrysanthemum*-flowered Aster is a little later and taller, and the flowers are larger but not so numerous. *Victoria* is a tall variety with very fine flowers, as also is *Truffaut's* *Pœony*-flowered; but on account of the height of the last two they are not so well adapted for small beds or near the edges of borders.

Balsams.—Good strains of these are very useful for the conservatory. *Begonia*.—Some excellent flowers may be had from a packet of seed of the *Tuberous Begonias*, and all would be worth growing, for they make good bedding plants if they are planted in a sheltered position. *Brachycome iberidifolia* is one of the prettiest little annuals grown either for beds or borders, and flowers until frost comes. *Calendula Meteor*, a prettily marked Marigold, and quite worthy of a place in the mixed border, being useful for cutting. Candytufts are very pretty in masses, but they are soon over. *Cannas* are useful for sub-tropical bedding; the seed should be soaked eighteen or twenty hours before sowing. *Canterbury Bells* should not be despised for borders; the rose-coloured one is very pretty. *Celosia pyramidalis plumosa* makes a good pot plant both for room decoration and conservatory. It requires careful watering after it has finished growing. *Chrysanthemum tricolor* and *segetum grandiflora* make showy clumps or back rows in borders. *Clarkias* are pretty individually, but are not very showy at a distance. *Collinsias* are pretty and showy, but do not last long enough. *Coreopsis coronata* is attractive; it makes good clumps or rows for the border, and I have seen very pretty beds of them, and they continue flowering until frost comes.

Dianthus Heddewigi is beautifully rich in the markings of the flowers; they are very suitable for planting in small beds or front of borders near walks, as their colours are too quiet to be seen at a distance. *Delphiniums* make very striking clumps for the back of borders or in the shrubbery. *Digitalises* are very good companions for the last-named in shrubberies, and also naturalising under trees where they are not too dense. *Eschscholtzias* are very showy in clumps near the front of borders. *Gaillardias*.—These are hardy perennials. They are best sown in August and planted in autumn, where they are to remain. *Globe Amaranth* is a useful pot plant for conservatory and room decoration, but like the *Celosia* it must be carefully watered or it will damp off in a cool house. I have some now that have been in bloom over three months. *Godetias* make very showy clumps in a mixed border, and they continue flowering until frost kills them. *Helichrysums* are the most useful of the Everlastings for winter decoration. They should be grown on a piece of ground where they can be easily reached, as they should be visited every alternate day to cut them before they are open, as they are not so useful when they show the centre. *Honesty* is very pretty for winter decoration, apart from its usefulness for spring flowering; a few should be grown in all gardens. *Senecio Jacobæa* is useful for clumps where variety is wanted, but I do not care for it as much as some others. *Larkspur The Emperor* is a beautiful strain, but all are very pretty; if they would but live the summer through they would be invaluable. *Limnanthes Douglasi*.—This and the *Nemophilas* are very pretty for spring bedding; but they are generally in their best just as we want to put the summer bedding out. *Linum grandiflorum rubrum* is a very showy plant for sunny borders. *Love-lies-Bleeding*.—A few odd plants dotted about between shrubs or raised borders are very attractive; but the ground should be rich, as they do not grow sufficiently on poor soil. *Lupines* are very ornamental for clumps in borders, but they are soon over and leave gaps at an awkward time for filling.

Marigold.—Good strains of the double dwarf French variety are quite worthy of a bed in the flower garden, they are also useful for rows or clumps. The tall French single striped is very pretty when the flowers are well marked. I have been trying for some time to get them without selfs, but cannot do so. *Mignonette*.—*Machet* and *Miles' Spiral* are good varieties either for indoors or for beds. *Tropæolum*.—The King of Tom Thumb section make very showy beds on poor ground; if the soil is rich the leaves hide the flowers. *Sweet Peas*.—A mixture of these affords a number of flowers very useful for cutting, and should be grown in every garden. *Perilla atropurpurea lacinatus* are useful for summer bedding. *Petunias* are good bedders; they should have a warm situation, and the soil should not be too rich. *Phlox Drummondii*.—Some of these are very beautiful, but they do not do well here, they are apt to die in the middle of summer, leaving very bad gaps. *Pyrethrum*.—*Selaginoides* is the best variety with me. *Stocks*.—*East Lothian* is the best variety for general purposes, and *The Queen* is beautiful for spring and early summer. *Tagetes signata pumila*.—Very useful for bedding, but not equal to the *Calceolaria*. *Zinnias* should find a place in every garden.—J. L. B.

DONERAILE, MALLOW.

ONE of the many places of interest which the lover of horticulture will find worthy of a visit, if pleasure or business should take him to the south of Ireland, is Doneraile, the picturesque seat of Viscount Doneraile, situate about six miles to the north of Mallow Junction, on the Great Southern and Western Railway. After an invigorating cross-country drive upon a jaunting car, the visitor will have no difficulty in gaining admission to the demesne, as, owing to the courtesy of its noble owner

the park is open from daylight till dark. Entering by the main entrance we first notice some noble specimens of Beech and Oak, with some of the finest Ash trees in the country, and the oldest Larches in Ireland. A fine stream, which abounds with trout, winds its way through the entire length of the park, its banks being beautifully planted with Pampas Grass, Rhododendrons, &c. The carriage drive crosses this stream by a substantial stone bridge, and divides to the right and left. Taking the road leading to the mansion, we seek the gardens, which are enclosed with a high wall, and we obtain the guidance of the intelligent gardener, Mr. Swanborough, who first shows us into the principal flower garden, which, at the middle of August, presented a scene not easily forgotten. Over 1100 *Tuberous Begonias* are used in this garden. Passing along the centre walk, we have on each side four long beds, each 60 feet long by 8 feet wide, filled with these lovely flowers. The style of planting is one well worthy of more than passing comment. Each plant is 3 feet apart, with 1½ foot between the rows, thus causing the plants to form squares, which are carpeted underneath with *Mesembryanthemum*, *Lobelias*, *Sedums*, &c. There are several other beds filled with these plants, the favourite varieties being *Madame O. Lamarck*, *Paul Masurel*, *General Roberts*, *Vesuvius*, *Souvenir de William Saunders*, *Massange de Louvrex*, and *Louis Van Houtte*. While a very large collection of all the most approved varieties are grown, some very good seedlings are also in the collection, and not a few are likely to prove worthy of preservation. *Zonal Pelargoniums* are also employed, but we were informed that it is intended to discontinue their use, as they propagate the *Begonias* to take their place, only using the ornamental-foliage *Pelargoniums*. Of late the seasons have been so wet that *Zonal Pelargoniums* are almost useless in this part of the country. Passing through an archway we enter into another flower garden, which contains a rock garden, where a good collection of alpine is grown, *Cactus Dahlias*, beds of *Stocks*, *Asters*, *Zinnias*, and *Scabiouses* were all good, as well as lovely beds of *Heliotropes*, which filled the air with a delightful perfume. Some pretty carpet beds were also seen in this garden. The American garden contains some magnificent *Rhododendrons* and *Azaleas*, with *Gladioli* planted among them; one bed was very attractive, *Lilium auratum* towering up from among the foliage of the *Rhododendrons*. There are some splendid specimens of *Conifers* here, and *Clematises* climbing up the Apple trees were peculiarly attractive. *Chrysanthemums* are well grown, over 300 plants being included. About fifty are grown on the single-stem system, and about three flowers are allowed to expand upon a plant; the others are beautiful dwarf plants. *Japanese* are the favourites, and Mr. Swanborough is a staunch advocate of disbudding. *Pompons* are not much grown, some two dozen only, and these being all trained to a ring fastened about a foot above the pot.

Of the houses, the first is a Peach house with a very long roof; the fruit is all gathered here, and the trees, which are very old, looked remarkably clean and healthy; they are planted in the front, and trained up close under the glass. On the back wall are planted some more trees, and *Tomatoes* are stood between them, these being planted in deep, narrow boxes, and bearing a grand crop of fruit. The front trees are not allowed to grow up high enough to shade those upon the back wall. The next house is a vinery (*Black Hamburgh* and *Foster's Seedling*), which appear to be worn out, and we believe it is intended to do away with the Vines in this house, and convert it into a house for the production of cut flowers. Adjoining this is the late vinery, in which are some healthy young Vines planted in the spring of 1885. In another range of two Peach houses there has been a rather thin crop, owing to the bad weather at the time the trees were in bloom. In the frame ground we find a number of useful pits and frames, containing *Primulas*, *Cinerarias*, *Bonvardias*, *Cyclamens*, &c., all showing the care that is bestowed upon them, a useful little greenhouse being chiefly occupied with well-flowered *Zonal Pelargoniums*. The main range of houses is heated with one of *Cowan's Limekiln Apparatuses*. The first division is a large lean-to greenhouse filled with miscellaneous plants, a fine *Luculia gratissima* occupying a large portion of the back wall, while on the front, trained up close under the glass, is a specimen of *Bougainvillea glabra*, such as is seen in few places. This plant is admired by everyone that sees it. The exotic fernery contains some noble plants, and growing over a large tank is a handsome plant of *Monstera deliciosa* carrying several of its curious fruit. The back wall is covered with *Ficus repens*, *Begonias* of the *Rex* type, *Adiantum cuneatum*, and *Selaginellas*, all seeming quite at home, the wall presenting a verdant mass of tropical plants. On the front stage is arranged a fairly good collection of *Orchids*, among which are to be found most of the popular favourites. From the early vinery a fine crop of *Grapes* was cut this season, and in this house may be found a Vine called "*Isabella*," the berries of which emit a peculiarly strong odour, and when tasted the flavour somewhat reminds one of a *Hautbois Strawberry*. In the Palm house are two fine *Bananas*, the one maturing a large truss of fruit, the other an exceedingly strong sucker from a plant, the fruit of which was cut last April. Here is grown a useful collection of *Palms* and *Hedychiums*, two fine plants in 18-inch pots of *H. coronarium* being very noticeable. The plant stove contains most of the plants generally seen in these houses. On the roof is a fine plant of *Stephanotis floribunda*, which has borne an abundance of flowers. There are also good plants of *Eucharis amazonica* throwing up a large number of strong spikes. Next to this is the Pine stove, in which are a good number of strong plants with some very fine fruit upon them. There is a number of succession *Pines* coming on. *Melons* are well grown, fruits averaging 4 to 5 lbs. each having been obtained.

Passing along the terrace walk, where we see some magnificent Evergreen Oaks, we reach the conservatory, which adjoins the mansion. This

is an old-fashioned house, large span-roofed, and contains two beds planted, with Camellias three-parts of the length, with a walk up the centre. The roof is well draped with climbers, consisting of Tacsonias, Lapagerias, Rhynchospermum, and several others of acknowledged beauty. In front of the window opening into the drawing room is a circular bed, in which are arranged various flowering plants as they come into season. In the centre of this bed is a fine specimen of *Alsophila australis* with a stem 8 feet high. There is also planted in the middle of one of the Camellia beds such a plant of *Dicksonia antarctica* such as is seldom seen; some of the fronds measure over 12 feet in length. A cavern-like entrance is provided to a cool fernery, which is arranged to resemble a natural rockery as much as possible. In this are some good examples of *Woodwardia radicans*, several varieties of Killarney Fern, *Adiantum Capillus-Veneris*, &c. Quitting this house a winding path leads to the sub-tropical garden, where hardy Palms, Tobacco, New Zealand Flax, Indianrubber, Variegated Maize, American Aloes, *Solanum robustum*, and various other plants too numerous to mention are grown in the summer. One striking feature is a group of *Acer Negundo*, which have been taken possession of by Clematises, the purple flowers of the latter and the variegated leaves of the *Acer* presenting a picture not soon forgotten. The condition of the garden generally reflects great credit upon the able gardener and his staff.—HORTUS.

HARD WATER AND BOILERS.

I CAN fully sympathise with Mr. Iggulden and others situated under similar disheartening circumstances. He appears, however, to draw consolation from the fact that they possess a good flow of water into their boilers and pipes to make up for that which is wasted by broken joints, leaking valves, &c. It does not appear to him that the more hard water he allows to enter his boiler the greater the sediment or incrustation that becomes firmly attached to the inner surface. When this deposit of saline matter occurs in a boiler it is very much injured by the increased heat of the surface exposed to the fire, and considerably more fuel will be consumed in raising the requisite heat to be transmitted to the various houses in order to keep up the desired temperature. Not only is there a waste in fuel, but injury to the boiler, for the metal is certain to burn where the sediment is deposited, which results in the many failures and patches that Mr. Iggulden has to attach to the boilers under his charge.

Your correspondent exclaims, "We cannot soften our water," and then leaves the subject to detail the deplorable breakdowns and inconveniences that arise from the use of hard water. Amateurs and less experienced men than Mr. Iggulden may conclude that there is no means by which such catastrophes may be averted. To the amateur with one or two houses, and one boiler only, a breakdown may prove very serious and his plants be entirely ruined while a patch is being put on. First of all gardeners and amateurs should find out whether the water that they use is of such a nature that it will form a deposit on the sides of the boiler when heated. This can be accomplished by a very simple method, for hard waters are very difficult to wash in, as they contain salts, the bases of which are lime and magnesia. All such waters are termed hard, and if used in hot-water apparatuses will deposit a thin or thick coat of saline matter on the inner surface, according to the quantity of water that may be applied to the boiler through the feed pipe. Where water is derived from the chalk it is very disagreeable to wash in, and often contains as much as eighteen grains of chalk in each gallon of water. These mineral salts are not naturally soluble in water, but solubility is due to carbonic acid gas. If this gas can be driven out of the water the salts are precipitated, and the water becomes soft. This can be accomplished in a very large measure by boiling, and also by adding a little lime water. "The lime appropriates the carbonic acid, and consequently the salts originally in the water and the newly made carbonate of lime are precipitated together." Another method I was told the other day, and one that I should say is good, is to place a quantity of petroleum in the boiler before filling it and the pipes with water. The oil, which clings to the metal, prevents the calcareous matter in hard waters from attaching itself, and therefore the water holds it in solution. I may not have given all the necessary details; if not, I hope the person who told me will do so, for he is well able and an experienced writer to this Journal.

In spite of these and all other methods that may be advocated for softening hard waters, my advice is only use rain water in such localities, and it will entirely prevent incrustation, burning the metal, or a waste of fuel. It will also do away with these disheartening breakdowns that appear to result in many cases from the want either of knowledge or forethought.

It may be argued that this is impracticable in Mr. Iggulden's case and in the case of others, for it would prove insufficient to keep his boiler and pipes that are constantly leaking supplied with water. Others, and perhaps your correspondent, may reason that they have no means for storing the rain water for this purpose. Supposing there is not, I think no employer would object to such provision being made, for it would pay for itself in a very short time. Repairing pipes, patching boilers, pulling down and replacing brickwork, in addition to new boilers every few years, means a large and useless outlay that might be remedied and prove vastly advantageous to all concerned. Drawing hot water from the heating apparatus for watering and syringing could be avoided, and then very little water would be required daily, for natural waste by evaporation from the pipes and boiler is not a serious item, for a few cans of water in large arrangements would suffice for filling the supply tank.

Mr. Iggulden seems to dread an upset, but what would this be in comparison with the comfort and freedom from care that would result from a

safe and satisfactory system of heating by hot water? The cost of a new system could readily be estimated, and plans would quickly be forthcoming if solicited. Rotten iron pipes buried in the ground are not worth digging out, for they would not pay for the labour, to say nothing of an unnecessary upset. It appears plainly to me that a new system would quickly pay for itself in the saving of fuel and annual repairs, if only provision was made for feeding the apparatus with rain instead of hard water. Good boilers with the pipes fixed in a satisfactory manner should give no trouble for a period of twenty years. I am not taking into consideration breakage that may arise in any form by negligence in turning on valves, &c. Failure, upset, and inconvenience may arise in well-arranged schemes if the pipes under ground have not the joints packed in a durable and lasting manner. Mr. Iggulden seems to think that joints packed with iron filings are the cause of many of his failures, and it is evident that he does not admire these joints. With what material would he pack the joints underground? Rust joints have been condemned as the cause of failure when failure can often be attributed to other sources. How frequently are iron joints blamed when they break, and the real cause is due to the expansion of the metal. I have seen sockets split and the joints partially drawn in addition to the pipes being twisted in all directions because no provision had been made for expansion, and the cause has been laid to the joints. Rust joints when properly made with a little red lead in a dry state mixed with the filings and a very small quantity of sal ammoniac—too much of the last being often the cause of failure—and the pipes left free after they are fixed, that is, not built in tightly with brickwork, will prove the most durable of all joints. To insure safety one expansion joint to every 100 feet of 4-inch piping on the mains should be used, and failure from broken joints will be practically unknown.

Upright, tubular, or any tube or complicated boiler is unsuitable where incrustation takes place by the use of hard water. No boiler should be used that requires setting in brickwork except at the front or back to form the back flues to the chimney, then manholes, if such they may be termed, should be provided on the top and at each side so that they could be cleaned out annually. If this provision were made an ordinary labourer might readily clean out the boilers and fit the plate again securely. Two boilers should be always set side by side, so that one can be worked while the other was cleaned out or repaired. The "Red Rose" boiler certainly offers every facility for cleaning, as it can be taken to pieces, cleaned, and put together again most readily. But in spite of whatever boiler or provision is made, hard water proves a source of annoyance, and the easiest, safest, and cheapest method of overcoming such difficulties is the use of rain water.—A. W.

ROYAL HORTICULTURAL SOCIETY.

DECEMBER 7TH.

THE last meeting of the year was held in the East Crush Room of the Royal Albert Hall on Tuesday last, when there was a good attendance of the members of the Fruit and Floral Committees, but the exhibits were comparatively few. The meeting terminated with hearty votes of thanks to the Chairmen and Vice-Chairmen of both Committees.

FRUIT COMMITTEE.—Present: Harry J. Veitch, Esq., in the chair, and Messrs. John Burnett, W. Warren, J. Woodbridge, G. T. Miles, S. Ford, James Smith, T. B. Heywood, Harrison Weir, F. Mason, G. Norman, C. Ross, F. Rutland, W. Denning, R. D. Blackmore, Wm. Paul, G. Bunyard, Philip Crowley, and Dr. Robert Hogg. Mr. Thomas Coomber, The Hendre Gardens, Monmouth, sent three grand Pine Apples, two of Smooth Cayenne and one of Charlotte Rothschild, the latter 10 inches high and 6 inches in diameter at the base, beautifully proportioned and well ripened, they all had fine vigorous crowns. A cultural commendation was awarded. Mr. J. Harris, The Gardens, Singleton, South Swansea, showed six medium sized Pine Apples, for which a vote of thanks was accorded. Mr. J. Stewart, The Gardens, Lingford Park, Maldon, Essex, showed several good fruits of a seedling Apple. Messrs. Caldwell & Sons, Knutsford, had a seedling Apple named Lady de Tabley, and Miss Gray showed a seedling Apple, all of which were passed. Mr. W. R. Strong, Wellington College, sent samples of Celery Veitch's Standard Bearer, large and heavy. Mr. J. Hans, 16, Mayold Road, Clapton, exhibited a watering can, with a handle curving over the top and a rose intended to distribute a very fine spray. It was highly commended as an improved form of can.

FLORAL COMMITTEE.—Present:—G. F. Wilson, Esq., in the chair, and Messrs. W. Wilks, J. Laing, H. Bennett, T. Baines, Richard Dean, H. Herbst, J. Walker, J. Hudson, W. Holmes, H. Cannell, G. Duffield, C. Noble, H. Ballantine, W. B. Kellock, J. Dornay, H. M. Pollett, A. J. Lendy, E. Hill, H. Turner, James O'Brien, H. Low, J. Douglas, and G. Paul.

From Mr. T. S. Ware, Tottenham, came plants of the ever-flowering *Primula poculiformis*, a large clump of *Helleborus niger maximus*, the yellow *Primula floribunda*, and the white *Narcissus monophyllus*. A new yellow sport from *Chrysanthemum Ethel*, named Mrs. H. Jones, was also shown, the blooms exactly similar in form to the parent, but of a soft clear yellow. A vote of thanks was awarded for this useful late variety, which well deserved a certificate.

A vote of thanks was accorded to Messrs. C. Smith & Son, Caledonia Nursery, Guernsey, for *Chrysanthemum* Governor of Guernsey, a variety with yellow flat incurving florets. G. F. Wilson, Esq., Weybridge, sent flowers of a *Veronica* like *salicifolia*, cut from plants in the open where the temperature had fallen to 15° Fahr. Mr. W. Smyth, The Gardens, Basing Park, Alton, Hants, showed a flower of *Amaryllis equestris*; and Messrs. Hans Niemand, Birmingham, sent a variegated *Poinsettia*, the leaves prettily edged with white.

A vote of thanks was adjudged to J. C. Bowring, Esq., Forest Farm, Windsor Forest, for a seedling *Cypripedium*, a cross between *C. villosum* and *C. insigne*, the dorsal sepal green margined with white and spotted with purple, the petals and lip glossy and veined with brownish purple.

F. G. Tantz, Esq., Studley House, Hammersmith (gardener, Mr. J. C. Cowley), showed a plant of *Spatboglotis augustorum* and three varieties of *Anthurium*, one named *Tautzianum* being very highly coloured, for which a vote of thanks was awarded. C. J. Partington, Esq., Heaton House, Cheshunt (gardener, Mr. B. Searing) was adjudged a cultural commendation for a plant of *Odontoglossum crispum* with a large six-branched panicle of flowers.

Messrs. H. Cannell & Sons, Swanley, exhibited a stand of handsome Zonal *Pelargonium* blooms, for which a cultural commendation was awarded. The flowers were large and distinguished by their brilliant clear colours. The best were Queen of the Belgians, white; Mary Caswell, delicate pale pink; Lady Reed, white with a salmon centre; Kate Greenaway, bright pink; Cato, rich scarlet; Olivier, salmon; Swanley Gem, scarlet, white centre; and Lord Chesham, cerise. Flowers of single *Primulas* were also sent. Mr. J. King, Rowsham, Aylesbury, exhibited several pretty *Primulas* and a seedling *Richardia* named *Chameleon* with leaves having a slight metallic lustre. Votes of thanks were awarded. Messrs. Hooper & Co., Covent Garden, had a basket of *Carnations*, very noticeable being the free-flowering rose-coloured *Irma*. Mlle. Carle was a good white, and Chevalier, yellow, with a few crimson streaks. Mr. E. Peters, 2, Somerset Terrace, Guernsey, showed a fine *Nerine*, a cross between *coruscans* and *flexuosa*, large and brightly coloured.

CERTIFICATED PLANTS.

Cypripedium callosum (William Bull, Chelsea).—A species introduced from Cochinchina, and apparently intermediate between *C. Lawrencianum* and *C. barbatum*. The dorsal sepal is broad, white at the margin, and regularly streaked with purple, just like *C. Lawrencianum*. The lip is small, purplish, the petals greenish at the base, with a few scattered black hairs on the margin and a purple tint at the tips. The leaves are marbled with dark and light green.

Lælia anceps virginialis (Mr. H. Heims, gardener to F. A. Philbrick, Esq., Q.C., Oldfield, Bickley).—A handsome white variety, the petals $1\frac{1}{2}$ inch in diameter, the flower 5 inches across, the lip broad with a yellow throat.

Chrysanthemum Carew Underwood (G. Stevens).—A Japanese variety, with long, flat, twisted florets, yellow, bronze and pink. Very distinct in colour and appearance.

Narcissus monophyllus (T. S. Ware).—A pure white-flowered Hoop Petticoat *Narcissus*, the perianth segments narrow and tapering, the crown broad, expanded, and undulated at the margin. The leaves are dark green and grass-like.

Chrysanthemum Mrs. Norman Davis (Mr. E. Mizen, Mitcham).—A bright yellow sport from Princess Teck, of good shape and substance. It will be valuable as a late variety.

SCIENTIFIC COMMITTEE.

Present: Dr. M. T. Masters in the chair, Mr. W. G. Smith, Mr. G. Maw (visitor), Prof. Church, Mr. O'Brien, Mr. Bennett, Mr. Michael, Mr. G. F. Wilson, Mr. McLachlan, Hon. and Rev. T. Boscawen, and Rev. G. Henslow.

Veronica salicifolia.—Mr. Wilson exhibited sprays from this New Zealand species grown at Wisbey, which had perfectly withstood a temperature of 15° in exposed situations. He described it as seeding itself very freely. *Choisya ternata* was, however, cut by the same degree of cold.

Jasminum odoratissimum.—A yellow species, exhibited by Mr. O'Brien, is said to be a native of Madeira; but being of an Indian type, it was suggested by him and corroborated by Mr. Maw that it had been introduced there. He also exhibited flowers of *Coryanthes speciosa*, var., from Major Lendy; *Maxillaria cucullata*, a *Pleurothallis*, suggested by Mr. Ridley to be near *P. ophecephala*.

Masdevallia with larva.—He also exhibited specimens of a species of this Orchid attached by some Noctua.

Xiphion reticulatum, diseased.—Mr. Maw showed specimens which were referred to Mr. Murray for examination and report.

Narcissus, Photographs of.—He exhibited photographs of several species or varieties now believed to be scarce or extinct, taken in the Riviera fifteen years ago from wild plants. They were all of the *Tazetta* group. He also exhibited specimens of the following species:—*N. viridiflorus*, very abundant south of Tangiers; *S. elegans* from the African side, and *S. serotinus* from the European side of the Strait; natural hybrids, like forms between *N. elegans* and *N. viridiflorus*, showing all gradations between the two; *Pancratium humile*, abundant south of Tangiers, with a remarkably elongated scape when fruiting; *Gladiolus grandis*, from near Gizon in the Asturias; and *Tapiranthus* sp. from Morocco.

Parmelia esculenta.—Mr. Maw also showed specimens of this so-called "Manna," an edible Lichen obtained from the country about 100 miles south of Algiers.

Araucaria excelsa.—Mr. Maw exhibited leaves attacked by a form of mealy bug, which first appeared in consequence of the heat and moisture on board ship on reaching Bombay.

A vote of thanks was given to Mr. Maw for his interesting communications.

Early linen paper.—Professor Church exhibited specimens of the earliest known linen paper made in Europe. It was a portion of an episcopal register of 1273, from Auvergne; another, dated 1289, consisted of entries of revenues, in which some of the original rag could be detected. It consisted of six strands of warp and six of woof. The size used was entirely starch, which appeared to be from Wheat. The earliest authentic linen paper hitherto known is from a memorandum of the fourteenth century, now in the British Museum. The Moors are said to have made linen paper in the thirteenth century, all earlier paper being made of cotton.

Variegated foliage.—Professor Church described some analyses he had made of Oak foliage, taken from a tree at Kew Gardens, which bore one albino branch, about 20 feet from the ground. A full account will be found in the December number of the "Journal of the Chemical Society," 1886. The following is the analysis:—

	Albino foliage.	Green foliage.
Water	73	58
Organic matter	24	40
Ash	2.7	1.6
Potash	50	29

	Albino foliage.	Green foliage.
Iron	0.82	1.2
Phosphoric acid (same in both)		
Lime	8.25	24.5
Manganese	2.1	2.36

He found starch, but no dextrine in the green spots on the variegated leaves; but erythro dextrine in the white parts, probably derived from the green by migration.

Seakale with Sclerotia.—Mr. W. G. Smith exhibited specimens in which large oval black bodies were attached to the stems. The fungus to which they belonged could not be determined from them in that condition.

Prehistoric Wheat.—He also read a communication upon and exhibited several specimens of carbonised Wheat from Salisbury and elsewhere, to show the comparative sizes of these ancient Grasses and of average English Wheat; while those regarded as Romano-British appeared to be somewhat smaller, others were quite equal in size to living kinds, as also are those derived from the tombs of Thebes in Egypt.

Fuchsia with petaliferous sepals.—Mr. Henslow exhibited a specimen of a semi-double *Fuchsia* remarkable for its thick red sepals bearing small dark purple petals at their very apex. He suggested as an interpretation of this unusual occurrence, that the fibro-vascular cord of the petals had become fused with the midrib of the sepal, so that instead of the petal being produced at the normal position it had become carried up, somewhat as are the anthers in *Primroses*, the filaments of which, or rather their vascular cords, are combined with those of the petals to which they adhere, and are superposed.

CHRYSANTHEMUMS ON WALLS—PROTECTED.

EARLY-FLOWERING VARIETIES.—We are now nearly at the end of the first week in December, and in the south of Ireland only once has the temperature fallen below the "freezing point," and that not sufficient to injure the blooms, not to say the foliage, of outdoor *Chrysanthemums*. The result has been for more than three months I, and I presume numbers of others, have been able to cut outdoor *Chrysanthemums* for various decorative purposes. I grew almost all the early bloomers, and by that I mean those that flower before mid-October. Out of sixty or so of those a large number are so small as to be only worth growing as curiosities or for variety, where at that particular time large quantities of cut flowers are desired. Another large group are semi-double, and are not generally appreciated, and of the remainder some have their colours so dead or undefined that most growers still further sift them. After the above discrimination and sifting of early sorts that no collection should be without, I would include—premising I am merely giving my own experience—of whites *La Petite Marie*, *Mdlle. Lacroix*, *La Vierge*, *Madame C. Desgranges*, and *Sœur Melanie*. A friend has spoken highly of three hybrid (white) *Pompons*, *St. Mary*, *Mrs. Cullingford*, and *Virginia*, but, except to say I shall have them next year, I cannot personally speak. Of yellows I reject all but the lemon yellow sport from *Madame Desgranges*, *G. Wermig*, and a very useful, tall, and free-growing Japanese, *M. Pynaert Van Geert*, together with a local and very floriferous hybrid *Pompon* to be seen here in all the villa gardens, that very much resembles *Flora*, but I think larger, to which Mr. Owen recently drew attention. If I were to include any other yellow it would be *Précocité*. Of red, rose, and blush colours there should be *President*, *Salter's Early Blush*, and *Davis's Blushing Bride*, *Madame Jolivat* and *Isidore Ferral*; to this might be added *Alex. Dufour*, rich rose purple, generally in bloom by mid-October. I will merely add three rich crimsons, Japanese *Henri Jacotot*, *Simon Delaux*, and *Roi des Précoces*. This would make about a score, and certainly skims the cream of the early bloomers, not including singles or those you recently figured, of which I cannot yet speak. The Japanese I have named will do best by a wall—a south wall best ripens and matures the wood, and this is the secret of fine foliage and fine blooms—especially if there is any overhanging protection to ward off rain; but it must be distinctly understood outdoor *Chrysanthemum* blooms never damp or decay like those in the confined moist night atmosphere of a plant house, ventilation at night being unusual. I have a wall some 200 feet long covered with blooms even now on which a single bloom has not damped off, and on a leaf of any plant there has not appeared a particle of mildew. Many of your readers have seen them, and with this letter I am cutting a box of blooms which you will no doubt consider small as compared with those I might have sent you a month ago from the first crown or terminal buds.

Besides having no damp and no mildew, wall *Chrysanthemums* give little trouble in proportion to the vast quantities of cut flowers produced by them, and still more as compared with those grown for exhibition. But I would not for a moment be understood as in any way decrying the great merit due to those who produce the large, massive, deep, and finely shaped exhibition flowers, and I am proud to say a local gentleman carried away first prize in all sections in Dublin against all comers. But I would ask, Why should not all who have walls not otherwise utilised have them brilliant during the dull months of October, November, and December? I am satisfied if you and your contemporaries draw attention to the matter, and point out what can be done, and how it can be done, those months in the British isles, outdoors as well as indoors, will not be the gloomiest of the year. Glass is cheap, I may be told, but I am now alluding to walls where glass or greenhouses cannot be erected for one reason or another, but that might, nevertheless, be brilliant with *Chrysanthemum* blooms. There are numbers of such in all the universities, colleges, and public schools, the making bright and gay of which would itself be an educational process; gentlemen have courtyards and the outside of garden walls often unused. Then humbler folk might be thought of in asylums, industrial and reformatory schools, barrack-yards, workhouses, cemetery walls, not to mention the unused walls of villa and

suburban gardens, now bare, bleak, and gloomy during the months referred to. Now, in all those places at least the foregoing early varieties can be grown; in fact, those I have named can more or less successfully be grown in any beds or borders. If Chrysanthemums were as largely grown as I think they could and ought to be, nurserymen's orders would be multiplied a hundredfold. But although the early bloomers are very welcome and might desirably be first taken up by young beginners, the real aim should be, where possible, to have the best varieties, and the number of those I have found to fail with me under the subjoined circumstances are very limited, several hundreds tried.

Preparation.—Given a wall as I noted already, the southern aspect is best, the next consideration is the preparation of the space for them to grow in. I excavated a border nearly 3 feet deep and as many wide, removed the soil and stones, and buried at the bottom several loads of fairly rotten manure, covering with lime rubbish—any who can get this, or brick rubbish, should use, say a sixth or so—and a quantity of rich maiden loam. Now, with good treatment and a border such as this, or even less if it cannot be had, I have yet to learn of any variety that will not fairly succeed therein. The next two months is the time to see about the matter, the sooner the better; in fact, cuttings may be taken now any day when they can be had. I may be told it is too soon, but in many cases this is not so. First, the longer your plants have to grow the finer will be your blooms; and secondly, a cutting fit to take and root now would be worthless a month or two hence. But I do not intend going over the cultural details, and will pass on to some peculiarities of treatment.

General Treatment.—In such a border the growth will be robust and strong, and if not wanted tall they must be stopped a few times; some prefer light lines of wire paling to tie or train to, say three or four. I find it looks best nailed with red tape or shreds as growth proceeds. In this way every inch of space can be covered and superfluous branches thinned out. The brilliant leathery foliage is quite a sight, especially when watered regularly. But under those circumstances it may be borne in mind, unlike pots, there is little danger of the plants suffering if watering is deferred, and this is a most material point. Constant syringing two or three times a day in very hot weather is, however, most desirable. To have fine blooms thinning is indispensable.

Protection.—Frost threatened in the beginning of October, and I considered heavy rains had better be warded off as well as wind and storms. How could it be conveniently done? That was the question. I could not use glass, even if I did not mind the expense of getting sashes for 200 feet. I made a curtain of medium quality calico, to fall down by night, or at any time I choose during bad weather, and folded up by day. It can be tied at the bottom when dropped down, and, so far, has been a perfect success, and I am sure will keep frost out better than glass, being a better non-conductor.

I had intended saying something of the varieties I found to yield the finest blooms—indeed, some varieties did much better than the same in pots—but I must not now intrude further.—W. J. MURPHY, *Clonmel*.

[We have received a box of bright and beautiful blooms from our correspondent.]

PHLOX AMÆNA.

It is of such rare occurrence to have any of the alpine Phloxes in flower in the end of November that we have thought it would not be out of place to give you a practical illustration of what this lovely alpine is capable of performing when its requirements are well suited. We have lifted a small tuft from the open ground and potted the same for your inspection. This has been one of the prettiest alpine in our nurseries at Hampton throughout this season, having been continuously in flower since the middle of last May, and up to November 29th we found the fading blossoms of a week ago, and umbels of fresh buds springing forth, which in a day or two will be aglow with their lovely pink blossoms, and this notwithstanding that we registered 16° of frost not quite a week before. We are not aware that it is prone to such persistent flowering, and our own experience is fully endorsed by that of our manager. It is certainly most lovely when seen *en masse*, carpeting the ground with its dense creeping green tufts, which are smothered with its pleasing flowers. We may add that it has had no special treatment other than receiving a good dressing of cow manure at planting time. Bedding Violas still continue to yield flowers, but the recent frosts have shattered them considerably.—COLLINS BROS. & GABRIEL, 39, *Waterloo Road, S.E.*

[The Phlox was extremely pretty, the pink flowers being of large size and most freely produced. Grown in pots the plant would be very attractive for the edges of stages in greenhouses at this time of year. The Violas, of which some blooms were also sent, were very bright and fresh.]

WATERTIGHT' ASHPITS—HOT v. COLD WATER.

THE article contributed by Mr. Burton in the autumn of 1884 does not contain anything to which I take exception, for the question of vapour now under discussion is not raised. He merely refers to watertight ashpits and the cleanliness that arises from keeping water in them.

The subject at first was the preservation of the fire bars by the aid of hot v. cold water, but it has now assumed a totally different aspect, for the combustion of the fuel has been brought to the front in place of the furnace bars. Both are of vast importance, and I acknowledge with thanks the various contributions that have appeared up to the present. While

on the subject of combustion, Mr. W. Taylor's hint was a good one, and Mr. J. Riddell gives valuable information in his article, for which I specially thank him, he having gone into the matter in a thoroughly scientific manner. I said in my first reply to Mr. Burton that when water was kept below the furnace bars the fire burned brighter and the draught appeared better. There is no doubt about this, for the double amount of oxygen contained in the air in the water will largely assist in facilitating combustion, provided a good supply of air is admitted as well. I have no doubt that sufficient oxygen is not admitted in many cases to convert the carbonic oxide that is formed into carbonic acid before it makes its escape, but the thickness of the fire and the manner in which it is banked at night has a very great effect upon the perfect combustion of the fuel. This may be successfully accomplished by day, but in very few gardens indeed are the fires so managed at night that it can be said combustion is perfect, even with draught and a supply of vapour. Perhaps waste, as regards the combustion of fuel, is in no case greater than in locomotive engines which, I believe, have an artificial blast from the steam, and it is estimated by Mr. Andrew Murray, as stated by Hood, "that 150 cubic feet of air should pass through the furnace for each pound of coal consumed in order to produce perfect combustion." Nothing approaching this quantity need be passed through our furnaces; nevertheless, it is very questionable if sufficient is admitted at night when the fires are banked, filled to last till morning, probably half a ton of fuel being placed on or nearly so. Waste may be prevented during the day, but at night it is impossible when the fire is left so as to keep the temperatures right say for ten hours. It would indeed be both interesting and instructive to hear how banking is accomplished and the fire managed so that perfect combustion will take place at night, then many besides myself will learn a valuable lesson in stoking.

It appears from that valuable article of Mr. Riddell's that hot water beneath the furnace bars, while it aids combustion, does not act beneficially in the preservation of the bars. I take it, then, that the water evaporated by the high temperature Mr. Burton thinks beneficial, that the bars are doubly subjected to destruction. The "temperature of maximum strength of cast iron has been estimated at about 300°; after this temperature is once passed it decreases in strength considerably and becomes much weaker to resist the strain to which it is subjected. It has been also found that iron exposed to the fire loses its "fibrous texture," and presents a "crystallised appearance," and that wrought iron exposed to the "steam of water for a considerable time also becomes crystallised," the same effect has been "observed without the presence of steam." Cast iron must decrease wonderfully in strength if the temperature of an "ordinary furnace," as stated by Murray, is about 1000°; Tredgold places it about 800°. It is clear, then, that the bars are weakened by heat; the more intense it is the weaker they become, and the more are they burnt. Steam or vapour, instead of preserving them, appears to assist in their destruction by bringing about oxidation, vapour then assisting, by adding intensity to the fire, in burning them more than they otherwise would be, and rusting them in the bargain. The repulsion between iron and water has been proved to exist, even at moderate temperatures, and to increase rapidly as the temperature rises, and red-hot iron repels it completely. This is another reason why I could not accept the hot vapour theory as an agent for the preservation of the bars. Mr. Burton concludes that hot vapour—the temperature of which it is impossible to estimate, for it must become heated in its passage from the surface of the water to the bars—keeps the bars cool, how can it if they are hot and repel it? Cool water must act more beneficially in the preservation of the bars than that, for it would assist in keeping or cooling the air necessary for combustion that entered by the ashpit door. The cooler the air in the ashpit the cooler it must be when it reaches the base of the bars. If this is so, then cold water must prove more beneficial than hot, but not for the thorough combustion of the fuel. I said I should not be surprised if the advantages arising from water in the stokehole proved to be more imaginary than real, and I think so still, as far as the protection of the bars are concerned. If hot water aids in increased heat, and rusting the bars to pieces, so must cool water act in the same manner, though to a less extent.

I thoroughly believe that if the bars are to last in large furnaces where the heat is intense they must be cast on a totally different principle than has been the case for most hot-water apparatus (for gardens) used up to the present time. The following quotation is from "Hood on Heating" (page 91), I think if acted upon will be the means of preserving the bars much longer than if water is evaporated beneath them. "When a rapid draught and quick combustion are required the furnace bars may very advantageously be made narrow and deep, so as to allow a large proportionate space for the entrance of the air. Instead, therefore, of using furnace bars $1\frac{1}{2}$ or $1\frac{3}{4}$ of an inch wide, with half an inch air space between the bars, they may be made about three-eighths of an inch in width and about $4\frac{1}{2}$ or 5 inches deep, tapering at the lower edge to about one-eighth of an inch and made with shoulders as usual, to allow about half-inch air spaces. Bars of this kind will have many advantages in particular cases. They will allow more than twice the quantity of air to pass through than the other bars will do, and therefore twice the quantity of coal can be burned on each square foot of the bars; and they will last longer than bars of the ordinary construction."

The author (Hood) at the end of 1842 suggested the use of these bars in locomotive engines, which is the most severe test they could be put to, and the result has been completely successful owing to the extreme thinness of the bars; the air passing between them keeps them always cool, which is impossible if the bars much exceed this thickness. The great depth of the bar gives the necessary stiffness; and the result of nearly

twelve months' trial, and with nearly twenty locomotive engines, was a very great increase in the durability of the furnace bars, in addition to the obvious advantage of admitting much more air into the furnace. Some of the bars, after having been used for ten months, and with which the engines ran nearly 20,000 miles, were still perfectly good after having done nearly four times the work of ordinary bars. A slightly larger bar is given for locomotive engines—that is, from 5 to 5½ inches deep and half an inch thick, tapering to a quarter of an inch. Further he goes on to say, "When the old form of furnace bar is used, and they are required to bear a very intense heat, their durability is increased by making a longitudinal groove in the upper surface about three-eighths of an inch deep. This groove becomes filled with ashes, which being a slow conductor of heat, preserves the bar from the intense heat of the fire." The preservation of these bars depends entirely upon the air entering to keep them cool, and therefore cold water in the ashpit would certainly effect this better than warm; hence my idea for a flow in and out as stated.

I must now turn to Mr. Burton's article, page 431, and repeat, as I have done above, that I do not attribute much importance to water in the stokehole for the preservation of the bars. Mr. Burton has no right to assume that the bars used under the large boilers here twist because the cool water does not prove sufficient to prevent them. I have never said in any of my articles that I used cool water in the stokeholes here, and therefore your correspondent's assumption and conclusions drawn therefrom are groundless. I may state plainly that no water is used below the boilers here, or will it be until the advantages arising from its use in the preservation of the bars has been proved. For twisted and hoisted bars I gave what I believed to be the true reason—namely, the expansion of the metal, and the principle upon which the bars are cast. I am certain that they are too thick, and the air has not that cooling effect upon them that it would if they were thinner. I may just state that I have used bars under my large boilers 5 and 5½ inches in depth, the majority has been 4½ inches; they are 4 feet in length, 1½ thick. I have had them 1½ inch, tapering to half an inch at the base. Across the ends, including the shoulder on each side, they are 2 inches, across the central shoulder 1½. I have had the bar grooved, and used them without, and I have found practically no difference, neither has the extra depth of the bar proved beneficial. The bars burn only for 1 inch or a little more below the fire, the thinner portion of the bar being perfectly good. They twist badly, which, I believe, is due to expansion and the great heat of the metal, the air admitted having no effect upon keeping them cool. I believe if thinner bars were employed they would last double the length of time, for the air admitted necessary for perfect combustion would keep them cool.—WM. BARDNEY.

ON MUSCAT GRAPES SHRIVELLING.

I WAS very much interested in a note recently published on the above subject, and as I have been troubled with the same evil as your correspondent, Mr. Williamson, I venture to say a few words in reference to Muscat Grapes shrivelling. It is without any doubt one of the best Grapes we have in cultivation, and I do not hesitate to say that it is the most difficult one to grow up to the required standard. I have in my charge a lean-to house of Muscat Grapes. The aspect is full south, with inside and outside borders. The Vines are planted inside, about 3 feet apart. Before the time of starting them we give the border a good watering, and again when necessary, and I might say the usual treatment was bestowed upon them in every respect, but nevertheless they shrivelled. It is my firm opinion that the cause of this evil is in a great measure the age of the Vines and the condition of the border. For instance, we will take newly planted Vines of the same variety that are just commencing to fruit. These will in all probability continue giving satisfaction for several years without either shrivelling or shanking, but at the end of this time it often happens that both these evils appear. It is understood by all growers that the latter evil arises from the bad condition of the roots; then why not attribute the former evil to the same cause? This, I believe, is the case, and it is not the fault of the atmospheric moisture at all. Mr. Williamson, in writing his paper, states that he has tried a dry atmosphere, but without success, and he goes on to say that he watered the inside border, with an idea that the roots lacked moisture, but notwithstanding this, they gradually went backward. To my mind this proves that it is not the want of moisture at the roots, nor, on the other hand, the fault of atmospheric moisture, for at the time it was beneficial to several of the varieties it was altogether unsatisfactory to the Muscats; and I might say the same by the one in my charge, although there are only two varieties grown in the same house—viz., Muscat of Alexandria and Bowood Muscat. These receive similar treatment, but without success, so therefore I come to the conclusion that it is in a great measure the fault of the border, or, I should say, the stagnant condition of the soil round the roots have got into, and it remains to be found out whether such be the cause of this evil or not.

Your correspondent also draws attention to the colouring of Muscats, and with reference to this, my experience teaches me that they require all the sun that can possibly be brought to bear on the berries after the stoning process is over, at the same time allowing a free circulation of air with a temperature of from 75° to 80°. The laterals should be cut away at the first signs of ripening, which would have the advantage of permitting both sun and air free access to the bunches. Some growers prefer the extension system for Grapes, but I fail to see any advantage in this, or in fact any satisfactory results attending this system, for it would be impossible to admit the necessary amount of sun that these Grapes

require to bring them up to the standard both in flavour and colour, so I adhere to the system under discussion, having learned from experience that good results can be obtained.—R. KIRBY.



HARDY FRUIT GARDEN.

PRUNING and training Pears, Apples, Plums, and Cherries should be done whenever the weather is favourable, it being important to have this done while the sap is at rest and before spring. Shorten all spur growths to two or three buds, thin out crowded shoots and thin out spurs where there is any tendency to crowding. Far better is it to have fruiting wood well apart than to have much thinning of fruit. Train young growth with careful precision, and remember that it is only while a tree is young that we can impart an elegant form to it. Such elegance is, however, highly desirable, contributing as it does to the attractions of a fruit garden. Train the lower branches of young palmette verriers and fan-trained trees at such an acute angle that the free flow of sap may contribute unchecked to the robust vigour it is so important to impart to them before upper branches have made much progress. Avoid imparting the horizontal form to any fruit tree; it is as unnatural as unsatisfactory. For a fruit tree to be fruitful as well as healthy in every part of the branch growth, the end of every branch must point upwards; then, and only then, can we be certain that the sap action will be free and unchecked in every part of the tree. Shorten the leading shoots sufficiently to induce a free lateral growth; see also that there is no crowding of lateral growth or branches. Great caution is necessary in pruning old fruit trees to not remove old spurs if they are healthy, and leave two or three more buds upon the young growth than is done upon that of younger trees. Fruit before all things is our aim, and so long as an old tree continues fruitful we need not mind if the spurs stand out far from the branches; to remove them is to risk the loss of fruit altogether. Thin the growth of standards, and any trees not subjected to close pruning. If we remember that in pruning our object is to secure a free admission of light and air to every part of the tree, we shall take care to thin all growth that is likely to shade the interior of the tree. Avoid using shreds and nails for walls; far better is it to strain wires against the wall and tie the branches to them. There are then no holes in the wall for the larva of insects.

FRUIT FORCING.

VINES.—*Earliest House.*—In the earliest house the temperature will need to be increased to 60° at night in mild weather, 55° in severe weather after the eyes break, gradually increasing it so as to have it 60° at night when the Vines are in leaf, 65° by day in severe weather, and 70° to 75° in mild weather with moderate ventilation. The evaporation troughs need not be charged with liquid manure provided there is fermenting material within the house; but, if not, they may be filled with liquid manure, 1 lb. guano to 20 gallons of water being suitable for the purpose. In addition to this, the available surfaces in the house, such as floors and surfaces of borders, may be sprinkled in the late afternoon; but this is not equal to the fermenting materials turned frequently and fresh added as required. To Vines in pots the liquid should be applied at the temperature of the house. Tie up the Vines in position as soon as growth has commenced, and before the shoots are so long as to be damaged by the process. Sprinkle the house two or three times a day in clear weather, avoiding too damp an atmosphere on the one hand, and a dry one on the other. Disbudding should not be practised until the fruit shows in the points of the shoots.

House to Afford Fruit in May.—The house or houses for this purpose should be started without delay. In order to obtain a good break, and to save fuel, a bed of leaves and stable litter placed on the floor of the house, turning a portion of it daily, so as to supply ammonia to the atmosphere, is useful. The outside border must also have the needful protection from cold rains and snow, two-thirds of leaves to one of stable litter affording a less violent but more lasting heat than dung. Provided the outside borders were covered with bracken, straw, or litter in early autumn, so as to throw off the wet, the temperature will be considerably warmer than that of borders exposed, and in their case covering with hot litter may be dispensed with; but a covering of warm litter after the Vines break is preferable, especially for borders that are all outside. The inside borders may be rendered thoroughly moist by applying water, or in the case of weak Vines liquid manure at 90°. Start with a night temperature of 50° in severe weather, 55° in mild weather, and 65° by day, except the weather be severe, when 55° will be more suitable, and, though this is but slow work, it is better in the end than a high, forcing heat; indeed, we do not advise those temperatures to be exceeded until the growth commences. Maintain a moist atmosphere by syringing occasionally, but avoid excessive moisture and keeping the rods dripping wet, which excites the production of aerial roots from the rods. Depress young canes to the horizontal line or below, to insure the regular breaking of the buds.

Midseason Houses.—The Vines will be pruned and at rest; if not, complete the work and cleansing the houses without delay. Where the

Grapes are partially cut the remainder may be removed with a good portion of wood attached, and that inserted in bottles of water with a piece of charcoal in each, will keep admirably in a dry room, from which frost is excluded. This will liberate the Vines for pruning and the house for cleansing, repairs, and painting. There is nothing so invigorating to Vines as a long and complete rest, which early pruning effects more than anything else.

Late Houses.—Late Vines that have the foliage all off will only require sufficient fire heat to exclude frost; even a temperature of 50° dries the atmosphere too much to preserve thin-skinned Grapes, such as Muscat and Black Hamburgs; 40° to 50° is sufficient, keeping the house closed in damp weather, and seeking to ensure a dry and equable atmosphere.

PINES.—*Young Stock.*—Well-ventilated pits or small houses properly heated are most suitable. Such plants at this season often suffer irreparable injury from being kept too close and warm, the plants becoming drawn and weakly. At night 60° should not be exceeded, but a mean between that and 55° secured at night, which, with 65° in the daytime, will keep all young stock gently growing, admitting a little air at the top of the house at 65°, leaving it on all day, but do not let the temperature fall below that point, and when the sun raises the temperature to 75° a free circulation of air should be allowed. The bottom heat must be kept steady at 80°, avoiding a very damp atmosphere; moderate humidity will suffice. Apply water only when the plants become dry, and then give weak liquid manure. Keep the plants near to the glass, and allow them plenty of room.

Plants for Affording Fruit in May and June.—Considerable judgment and skill are required to maintain with limited means a successful supply of ripe Pine Apples throughout the year. The cultivator with hundreds of successions may do it readily enough, but the gardener with his tens or twenties is often at his wit's end how to act so as to have fruit at the right time. Where a supply of ripe fruit is required in May and June, and plants are not showing fruit, it will be desirable to select from those started last March, which have completed a stout growth, and are now in a state of rest, such as show the best indications of starting into fruit when subjected to a higher temperature both at the roots and in the atmosphere. If the plants cannot have a structure to themselves they should have a light position in the house where the fruiterers are swelling. In the fruiting department 65° will be ample at night, 5° lower in the morning in cold weather, and 70° to 75° by day. Take every opportunity of collecting leaves whilst dry, and whenever a favourable opportunity offers push forward whatever may be necessary in renewing or augmenting the fermenting beds.

FIGS.—*Early Forced Planted-out Trees.*—The earliest house, with the trees in inside borders, should now be closed with a view to having ripe Figs in May, but where the earliest Figs are had from trees in pots, starting the trees planted in borders may be deferred until the new year, so as to afford a succession, yet if the trees planted out be now started they will afford a closer succession to those being forced in pots. Apply water to the roots at frequent intervals until the soil is thoroughly moistened, introducing thoroughly sweetened leaves and stable litter in ridge form into the house, to produce a moist genial atmosphere and induce gentle excitement as well as to economise fire heat. Commence with a temperature of 50° at night, 55° by day, and 65° from sun heat, syringing the trees and every available surface in the morning and early in the afternoon unless the weather be dull and cold, when the morning syringing only should be practised. Admit air moderately whenever the weather is mild, closing the house with sun heat at 65°, or if it exceed that with full ventilation close the ventilators when the sun heat begins declining.

Earliest Forced Trees in Pots.—They must not be over-excited by too much bottom heat, but as the fermenting material settles more should be added and pressed firmly, being careful not to allow the heat about the pots to exceed 65°. When the buds are swelling freely the temperature may be increased to 55° at night, 60° by day, by artificial means, admitting a little air above that, and allowing an advance to 70° to 75° by sun, with corresponding ventilation, closing at 65°. Sprinkle the trees and house morning and afternoon, or in the morning only if the weather be dull.

Young Pot Trees intended for Early Forcing.—Those that require to be grown for forcing another season should be shaken out and repotted, starting them into growth shortly or at once, so that they may make the necessary growth and complete it early, so as to have time to root before being forced for fruiting. Brown Turkey is the best all-round Fig. White Marseilles and Negro Largo are excellent. Very early Figs may be had of Early Violet, but the fruit is small, still it is worth place for affording early dishes. Bondance Precocoe, Black Marseilles, Angelique, and White Lochia are also good for pots and forcing, and Dwarf Prolific, which is very similar, if not identical, with Brown Turkey.

Strawberries in Pots.—When the crowns commence swelling and the trusses appear, the temperature may be advanced a few degrees by day. A temperature of 50° to 55° is sufficiently high at night. Syringing the plants gently in the early part of bright afternoons will be advantageous. Examine the plants daily, and supply water to all those that require it. Keep a sharp look-out for aphides, and if any appear fumigate the house on two consecutive evenings. Another batch of plants should be placed in a house from which frost is excluded, the decayed leaves being removed, and the surface soil loosened and top-dressed with horse droppings. The drainage must be attended to, and if necessary rectified, and the pots washed. The plants may be introduced during the next three weeks to a Peach house or Strawberry house, if such be available, following the

instruction given in a former calendar. Vicomtesse Hericart de Thury La Grosse Sucrée, Sir Harry, and President are suitable varieties. Plants for introducing later on will be quite safe in their quarters outdoors plunged in ashes to the rim, and a light covering may be given of dry fern or litter in severe weather, removing it when the weather is mild. If placed in frames the plants should have the lights drawn off in mild weather, in mild wet weather the lights should be tilted. The plants cannot be kept too cool. See that none suffers for want of water.

CHERRY HOUSE.—Pruning the trees must be attended to. Full-grown trees regularly stopped during growth will require very little pruning. Any that have grown considerably should be cut back to an inch of the base of the current year's growth, and the worn-out or decayed spurs must be removed. The terminal shoots in the case of trees not full-sized must not be shortened unless the extremity of the trellis is reached, and the central shoot or shoots of young trees will require to be cut back as may be necessary to originate shoots for filling up the space regularly. The fan mode of training is the most suitable, as it admits of replacing any shoots that may fall a prey to gumming. The trees and house should be thoroughly cleansed. Keep cold by free ventilation.

PLANT HOUSES.

Justicia flavicoma.—Some of the most forward of these plants will be showing their flower trusses, and if wanted in full beauty as early as possible they should be introduced into a temperature of 65°. Few plants are more valuable for conservatory decoration, as they last a long time in beauty. When the first flowers fade they are not long if returned into a heated structure before they flower a second time from the same truss. In fact, they will flower three times in succession, and each time produce a larger and finer truss of bloom. The remainder of the stock should be kept about 55° at night.

Poinsettias.—Under the same treatment these will have finished their growth and commenced forming their bracts. They are much larger in size and more brilliant in colour if they are developed in brisk heat than will be the case if allowed to remain in an intermediate structure. When allowed to develop under moderately cool conditions they retain their foliage and last considerably longer in the cooler atmosphere of the conservatory. When developed in strong heat they must be gradually and carefully hardened before they are removed to the conservatory, or their foliage flags, turns yellow, and eventually falls. The foliage must be retained if the plants are to display their true character and beauty. Euphorbias, Plumbagos, and Linums are coming forward rapidly, and may be subjected to the same treatment as advised for Poinsettias.

The Forcing House.—The glass, woodwork, walls, floors—in fact, every part, should be thoroughly cleaned in readiness for the introduction of many plants that will presently need warmth to force them into bloom. A good heap of litter from the stables and dry leaves should be thrown into a heap in a shed and prepared by frequent turnings for a week or ten days before the beds are made up inside the house. Thorough preparation before taking this material into the house not only insures the heat lasting double the length of time, but the paint of the house is not injured by the strong ammonia that rises from it. When the rank steam has been expelled before the beds are made up the house may safely be used for plants in a very short space of time afterwards. During the dull sunless days of autumn and winter the majority of plants used for forcing come forward more quickly and better by the moist gentle warmth arising from fermenting material than by the aid of dry heat from hot-water pipes. Azaleas, such as *A. indica*, *A. narcissiflora*, *A. Deutsche Perle*, and *A. amœna*, are in a forward state, and will need no forcing, for the buds of many have already commenced bursting, the result of assisting them to make their growth early.

Bulbs.—Roman Hyacinths that were potted early come forward rapidly in gentle warmth after this date, and a succession may be maintained by introducing a pan, box, or a few pots once a fortnight according to the demand. The earliest Dutch varieties are *Homerus*, single red, and *La Tour d'Auvergne*, double white. These, if potted when advised, will have been removed from the plunging material and have become green in a cold frame. A few of both may be introduced into a temperature of 50° until they display signs of starting. Nothing is gained by placing them into brisk heat to force into bloom. No treatment is more certain to ruin them, for they are unduly forced out, and commence expanding their bells at the top of the spike instead of the base. They should be started gradually until they are growing, and then given a temperature of 60°, in which they will unfold their spikes in good condition. Early Tulips, such as scarlet *Duc Van Thol* and white *Pottebakker*, will also be ready for starting. These should have the same treatment as the Hyacinths until it is certain they have commenced growth, when they can be forced in brisk heat. When once growing Tulips will stand more heat than Hyacinths. We have frequently forced them into bloom in a close propagating frame where the night temperature of the house does not fall below 65°. This course is not advised, but when the blooms are required it may be safely practised.

Spiræa japonica.—Those planted outside last autumn may now be lifted and placed into 5 and 6-inch pots. The whole of our stock has developed large flowering crowns except those left outside for flowering for cutting late in the season. One or two of the rows prepared for forcing will be left out for this purpose next season, while those that flowered outside should be lifted. These will have small crowns only, and may be cut into two, three, or four pieces, according to their size, and replanted at once in rich fertile soil, 1 foot apart, in an open sunny position. They will develop their crowns in one season, and be in

admirable condition for lifting for forcing next autumn. It is useless to plant for this purpose those with strong flowering crowns, for after flowering the crowns divide, and in autumn the majority are too small for flowering and require another season's growth.

Dielytra spectabilis.—These should also be lifted and potted the same as *Spiræas*. Any moderately rich soil will suit them. The roots with small crowns should be replanted for another season. If the stock of these is limited some of the stronger roots may be divided, or those forced last year in pots. It is a good plan, when there is any uncertainty about sufficient stock for planting, to retain some of the plants that flowered late in pots. Such are valuable under the circumstances for lifting in autumn to be divided and planted for another year. When the stock for planting is ample these and *Spiræas* are conveyed to the rubbish heap directly they are past their best.

Lily of the Valley.—Home-grown plants may be lifted and the flowering crowns selected, and either potted a number together in 5-inch pots or placed into pans or boxes. Replant the small crowns without delay on deeply dug heavily manured ground. Dibble them in singly in rows 4 inches apart, and about 1 or 2 inches from plant to plant; the crown should be about half an inch below the surface. It is surprising what large flowering crowns will be produced in two years by such simple treatment.

THE BEE-KEEPER.

HONEY EMPLOYED IN COMB-BUILDING.

THE whole subject of comb-building, the secretion of wax, the honey required to produce a certain quantity, together with the changes it undergoes during secretion, comb-building, and after manipulation, covers a wide field for investigation and research, both in a practical and scientific point of view and interesting in all its details. It requires an abler pen than mine to thoroughly describe it, not having, as I had expected, sufficient data at this time to give an accurate report, through accidents, how much honey it takes for the bees to secrete and build comb sufficient to produce 1 lb. of wax.

So far as I have seen, "Felix" and myself stand isolated from those who believe and reiterate that bees require 20 lbs. of honey to produce 1 lb. of wax. We both seem to take the view that a swarm of bees placed in an empty hive during a honey glut will gather 20 lbs. less in a given time than one placed amongst fresh empty combs. It takes 20 lbs. of honey to produce 1 lb. of wax." Is that the case? I say, No emphatically. By the accidents that frustrated my designs in the experiments made this autumn for the purpose of informing the readers of this Journal, not only the amount of honey, but that of sugar as well, required to produce 1 lb. of wax, I have for a time been deprived of details that would have been an interesting narrative of facts. However, I have paid particular attention to the workings and progress of a number of fed swarms after being exhausted of any honey they contained.

Although these swarms varied in strength, there has not been any appreciable difference in their productions. If the swarm was strong, more comb was built than by weaker ones, but these latter stored a greater weight. The summer-like weather we have had during October and November favoured the experiments (if they can be so called), as the mild weather permitted of no waste by the syrup being left untouched, as it often does for long when the temperature is low, and places strong and weak swarms on an unequal footing.

The results, after feeding each swarm with 34 lbs. best cane sugar and 5 ozs. comb-foundation as a help, are—first, a hive is occupied with comb that if filled and sealed with honey would give nearly 3 lbs. of wax. I may here in parenthesis say that the seals of the combs contain the greatest elaboration of wax, and when we hear the advocates in favour of the extractor putting it, that the returned *mutilated combs* (italics mine) are equal to a saving of from 100 to 200 per cent., we know it is misleading. Not only must the lost time of repairing the mutilated combs be taken into account, but the seals as well, which, as every housewife who has the experience knows, are what swell the cake of wax, and with-

out which the nectar as gathered by the bees is not honey proper as it is found in sealed combs. Heather honey is, to a certain extent, exempt from the deteriorating quality, though unsealed. Its greater consistency, together with its nature otherwise, seems to exclude both air and water, although not sealed, but which Clover honey is only freed from after sealing.

Second, Five combs, or equal to five, are thoroughly sealed out, and which, according to measurement, contain exactly 34 lbs. of sealed syrup, or what would be if it was honey, representing the same weight as was fed to the bees before it was converted into syrup by adding water. Paradoxical, no doubt; but that is not all. The bees brought forward about 5000 cells, which all hatched, and many of these hatched cells were refilled with brood. Still another thing. One filled and sealed comb collapsed, which would at the least represent 3 ozs. wax, although the syrup was fed back to the bees, thus reducing the wax supplied to the bees to about 3 ozs.

The foregoing facts show that the bees had 34 lbs. of sugar, from which they at the least have built combs that will if melted produce 2 lbs. of wax, produced at least 5000 bees, and have still 34 lbs. of syrup left—say 16 lbs. of sugar—and have lived two months upon the syrup as well, which we might say other 4 lbs., thus showing a loss of only 12 lbs. of sugar, which has been converted into wax. Six pounds of sugar to each pound of wax produced figures much under 20 lbs. But now comes the puzzle. We know that the scales of wax secreted from sugar are of a coarser-looking nature; the combs are more brittle, and rot more readily than do those secreted from honey. But how are sugar and honey to be classed? Is 1 lb. of honey to be classed with 1 lb. of dry sugar or 1 lb. of syrup after the sugar has been reduced?

If the latter, then we must allow the hive to have been fed 60 to 68 lbs. of syrup, which will show that it takes from 10 to 15 lbs. syrup to produce 1 lb. of wax, but will it take the same weight of honey?

I am not prepared to answer that question accurately, but this I know—that bees fed with 20 lbs. of honey, when located in an empty hive, will build combs that three-quarters of a pound of wax might be extracted, and have 12 lbs. or more honey stored; but I cannot give an exact statement of results. It is a subject, however, that we ought not to let slip until by experiments we can prove everything in a satisfactory manner, and be able to say with accuracy how much honey or sugar it takes to produce 1 lb. of wax, and to test thoroughly the relative producing qualities of honey and sugar so far as the production of wax is concerned.

The bees sometimes drop large quantities of wax while they are in the act of building combs. This is a loss we cannot help, but we can by covering the hive properly, economise the heat so conducive to comb-building and prosperity of the bees at all times, thereby saving much that would be otherwise wasted.—LANARKSHIRE BEE-KEEPER.

THE COTTAGER'S STRAW HIVE—HOW TO GET SECTION HONEY FROM IT.

A SLIGHT mistake has been made in the woodcut, fig. 65, page 463. It is very important that the edge of the blocks at *a* (fig. 65) should be chamfered off to the extent of about a quarter of an inch. If this is not done the foundation will stick more firmly to the block than to the section, and consequently be of no use. To experts this may seem a primitive mode of fixing foundations, but it is simple, and will answer the cottager's purpose very well. It will be observed that there is a space of about a quarter of an inch between the top of the sections and the lid of the box (fig. 66, page 463). This space is left for a quilt. These I make by taking two pieces of cheap calico, placing a layer of wadding between them, and stitching them together. When done with a sewing machine they are neat, and, what is of more importance, they are warm.

In the accompanying sketch (fig. 73) I have represented one of the small dome-shaped hives so often met with. They are generally made without any opening at the top, and are used by cottagers for late swarms to be destroyed in the autumn, or, what is better, the bees driven from them and united to other stocks. Even these small hives may be made more useful if a hole is cut in the top, and one of the boards referred to in a former paper fixed to it either by pieces of wire, as represented at *a*, or by three long screws passing through the board into the straw hive

(b b). Before fixing the board either way it is well to wrap some listing, or strips of anything soft and warm round the top of the hive, so that there will be no opening to cause a draught between the hive and board.

The usual form of straw stock hives have a rim of straw round the top within which the straw cap fits when upon the hive. To adapt box supers to these hives it is necessary to cut those rims off. These hives are more flat on the top, and there is less trouble in fixing the boards to them. When once fixed the boards ought to remain permanently on the hives. The hole in the boards and the corresponding hole in the hive (c) should not be less than 3 inches in diameter. As will be seen, the centre bar of the super when placed on the hive comes across the centre of the opening, having a semicircular space on each side for the bees to enter the sections.

To those who use large hives of either straw or wood, a 10 lbs. super will be looked upon as too small to be worth hothering with. Supers must, however, be kept in proportion with the hives. It is a great mistake to make supers larger either way than the body of the hive, both on account of economy of heat and keeping the bees in their natural cluster form. Rather let small supers be piled one on the top of the other, as so

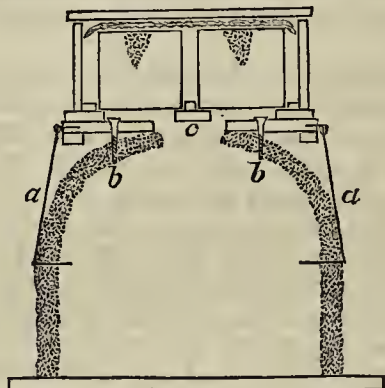


Fig. 73.

well discussed in last week's Journal by "Felix." With two 10-lb. boxes for each hive the cottager will be satisfied if he gets them filled, and it may be some encouragement when I say that this summer I have had better results in proportion from small straw hives than from good-sized bar-frame hives. The little boxes should be covered up with old hags, and kept dry by similar means to that applied to the ordinary caps. When the supers are removed place a thin piece of board over the opening, a half brick placed on it will keep it in its place, and if a little dry grass is packed round it, and an old sack tied over, with some waterproof covering over all, the hive will be snug for the winter.—A COTTAGE BEE-KEEPER.

THE WEATHER AND BEES.

DECEMBER opened with keen frost and snow. Up till the 5th all insect life had disappeared. On that day the thermometer rose from 15°; the lowest temperature we have had, to 50°. Many of the bees were roused from their short winter's repose, and from their appearance I believe many of them will have commenced breeding, being about two weeks earlier than the average of years, while some hives have continued breeding the whole season.—A LANARKSHIRE BEE-KEEPER.

TRADE CATALOGUE RECEIVED.

G. Stevens, St. John's Nursery, Putney.—*Catalogue of Chrysanthemums*



All correspondence should be directed either to "THE EDITOR" or to "THE PUBLISHER." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

Creepers for West Side of House (R. C.).—*Bignonia radicans* major, *Lonicera helgicum*, *Jasminum officinale*, *Wistaria sinensis*, *Cydonia japonica*

Berberis stenophylla, *Crataegus Pyracantha*, *Clematis Jackmani* and *C. Henryi*, with *Roses Gloire de Dijon* and *Cheshunt Hybrid* are good.

Aquatics (W. G. X.).—The water is much too deep for the generality of aquatics, which should not be more for the varieties following than 2 to 3 feet:—*Aponogeton distachyon*, *Nuphar advena*, *N. lutea*, *Nymphaea odorata*, *N. odorata*, *Pontederia cordata*, *Stratiotes aloides*, *Sagittaria sagittifolia*, and *Vallisneria spiralis*. *Nymphaea alba* will succeed in deeper water than most aquatics. Kinds that succeed in shallow water are *Butomus umbellatus*, *Alisma Plantago*, *Ranunculus Lingua*. Bullrushes are fine, especially *Typha minima*.

Late Peaches (C. H.).—Salwey is the latest of Peaches, and ripens with certainty under glass with fire heat. Late Peaches, however, ripen earlier when fire heat is used, and should only be used in case of an unfavourable autumn. Late Peaches meet a ready sale. Perhaps the best are *Sea Eagle*, *Gladstone*, and *Comet*. They are large, bright in colour, and highly flavoured. All, even *Comet*, ripen before *Salwey*, which is not large, and we do not advise its being grown for market. The most esteemed is *Sea Eagle*, which is simply superb. *Comet* is later, ripening a week to ten days in advance of *Salwey*, and *Gladstone* ripens with *Sea Eagle*.

Conifers (W.).—For a mixed chalk and loam soil *Taxus baccata* (common Yew), 30 feet; *T. baccata erecta*, 15 feet; *T. baccata fastigiata*, 15 feet; *T. baccata elegantissima*, 20 feet; *Pinus Cemhra*, 15 feet; *P. Benhamiana*, 30 feet; *P. austriaca*, 30 feet; *Picea nobilis*, 30 feet; *Juniperus chinensis*, 15 feet; *Cupressus Lawsoniana*, 25 feet; *C. Lawsoniana argentea*, 18 feet; *C. Lawsoniana aurea*, 25 feet; *C. Lawsoniana erecta viridis*, 18 feet; *C. nutkaensis*, 25 feet; *Thuja Lobbi erecta*, 18 feet; *T. occidentalis Vervœniana*, 24 feet; *Thuja (Biota) orientalis*, 18 feet; *T. elegantissima*, 12 feet; *T. aurea*, 9 feet; *Abies Engelmanni glauca*, 30 feet; *A. polita*, 30 feet; *Picea Pinsapo*, 24 feet; *Cedrus atlantica*, 45 feet to 60 feet; or *C. Libani*, same distance.

Rose Cutting Failing Grafting Roses (Auricula).—You would have succeeded far better if you had adopted a simpler method of propagation. The great majority of Roses strike freely in sandy soil in the open air, inserting them in November or even now, in the manner described at the foot of page 505 last week and continued to the next page. They may be inserted now in prepared soil in cold frames, or in pots in those frames, to remain there till callused, or longer if you wish; but when the cuttings are callused the pots may be plunged in gentle heat, say about February or March, and the roots will extend the more rapidly. Unless you have suitable houses for growing Roses you will not succeed so well by grafting now as you would in February. Nor are you likely to make much progress by grafting on bits of Briar roots much smaller than the scions. They should be at least as large as the scions, with fibres attached to them. No clay is required if the scion is secured with worsted or matting, and the junction quite covered with soil. We prefer young well rooted Briar plants raised from seed or cuttings, as stocks whereon to attach Roses that we desire to increase by that method. You are attempting too much, and expecting too much from a paucity of materials. We have not answered your question as to why your Rose cuttings did not callus in heat: it was because the sap could not descend to form the callus, but was forced upwards by the heat, and the cuttings necessarily collapsed under the unnatural strain to which they were subjected.

Propagating Indianrubber Plants (A Young Grower).—The following methods, successfully practised by an old grower, will answer with you if carefully carried out:—The present time is suitable for propagating this plant, either by shoots taken off with a heel or by eyes. When it is propagated by eyes they should be taken with a leaf attached to each, and be placed in silver sand to keep them from bleeding. Insert them in small pots well drained, in a mixture of peat and cocoa-nut fibre, and plunge in a strong bottom heat of 90°, with a little sand under each cutting. If they are not placed in a strong bottom heat the eyes will not break. When the eyes have rooted and commenced growing they should be repotted into 48-sized pots, in equal parts of turfy loam and peat, with sufficient sand to keep the soil open. The plants should be placed in a temperature of about 70°, and be syringed frequently; occasionally sponging the foliage is also highly beneficial. The plants should never be allowed to become potbound until they have grown to the allotted size, when they will be greatly benefited by liberal supplies of liquid manure. During their growing season they should never be allowed to become dry at the roots, as dryness causes the leaves to turn yellow and spoils the beauty of the plants. Shoots taken off with a heel will make plants much quicker than raising them from eyes; and it is the safest plan, for if strong bottom heat is not afforded, the eyes, as before mentioned, will not break into growth. When only a few plants of rapid growth are required we advise that they be raised from cuttings, but when a great number of small plants are required, which is not unfrequently the case now Indianrubber Plants are fashionable, the mode of raising them from eyes must be resorted to. Plants are now in great demand, and are being rapidly increased by the above modes in most nurseries, and they have a large sale in Covent Garden Market.

Blanching (G. L.).—You ask, "What is the cause of blanching?" We might laconically answer, "The absence of light;" but as you know that as well as we do, we presume you wish to know why leaves are blanched in dark places. It is occasioned by their being neither able to decompose the water they imbibe, nor to inhale carbonic acid. In the dark plants can only inhale oxygen, and thus, deprived of free hydrogen and carbon, on the due assimilation of which by the leaves all vegetable colours depend, and saturated with oxygen, they of necessity become white. An excess of oxygen has uniformly a tendency to whiten vegetable matters; and, to impart that excess to them is the principle upon which all bleaching is conducted. An over-dose of oxygen causes in them a deficiency of alkaline or an excess of acid matter, and light enables plants to decompose the acid matter, and to restore that predominance of alkalinity on which their green colour depends. Sennebier and Davy found most carbonic acid in blanched leaves; and all green leaves contain more alkaline matter than the rest of the plant which bears them. Every cook knows that a little alkali—carbonate of soda—added to the water, improves the green hue of her boiled vegetables. That this is the cause of the phenomenon is testified by direct experiment. Blanched Celery and Endive, and the white inner leaves of

the Cos Lettuce, contain about one-third more water than the same parts when green; and if submitted to destructive distillation do not yield more than half so much carbon. Then, again, if a plant of Celery is made to vegetate in the dark, under a receiver containing atmospheric air, with the addition of not more than one-twenty-fifth part of its bulk of a mixture of carburetted hydrogen, and hydrogen such as is afforded by the distillation of coal, that plant, though it becomes paler than when grown in the daylight, still retains a verdant colour.

Constructing a Fruit Room (F. W. J.).—A high and dry site is most suitable, and if it admit of being sunk a couple of feet it will be an advantage, the soil taken out being placed against the side walls, which need not be more than 4 feet 6 inches above the floor line. This will give space for three shelves, including the floor, which may be 3 to 4½ feet wide, and have a pathway of 3 feet width. This will give an internal width of 9 to 12 feet. The house can be wider, so as to admit of centre shelves, with a pathway all round. With a roof of straw or reed thatch it would be practically frost-proof, the eaves being brought over a foot or more, similar to a thatched cottage roof. The ends could be thatched, and two doors provided, with a vacuum or space between the outer one thatched. The ventilators should be at the apex, glass outside, and wood shutters inside lined with straw, the shutter opening inwards and the glass part outwards. The wall, if there was any fear of damp, could be cemented, also the floor. It should be in the full sun—an open airy situation. Such structure would have the advantage of an equable temperature, particularly suitable for Apples and Pears. It would also serve for Grapes, but they would need a division to themselves, as damp would probably need expelling, artificial heat to admit of ventilation being necessary. A Grape room is too dry for the satisfactory keeping of Apples and Pears, for if suitable for the latter the Grapes would be liable to decay, and if suiting the Grapes the Apples and Pears would shrivel. You can have a wood house, having the sides of 4½ inches by 2½ inches battens for the framework, covered on the inside with half-inch deals tongued and grooved, and on the outside with three-quarter-inch feather-edge boards, overlapping so as to throw off the wet, and fill the space with dry sawdust rammed tight. The roof would be best thatched, but making provision for light and ventilation. If you have a slate or tile roof it would require to be underdrawn, and you will need artificial heat for the Grape room. In the other a covering of clean dry straw would give the needful protection. Such structure would be best with a north aspect.

Names of Fruits.—The names and addresses of senders of fruit to be named must in all cases be enclosed with the specimens, whether letters referring to the fruit are sent by post or not. The names are not necessarily required for publication, initials sufficing for that. Only six specimens can be named at once, and surplus fruits beyond that number cannot be preserved. (Old Subscriber).—Apples: 1. Old Nonpareil; 2. Sweeney Nonpareil; 3. Minshall Crab. Pears: 1. White Doyenné; 2. not known; 3. Beurré Derouineau. (George Morall).—Grosse Calebasse, a fine specimen. (Subscriber).—1. Forelle; 2. not known; 3. Suffolk Thorn; 4. Waltham Abbey Seedling; 5. Cox's Pomona; 6. Bergamotte Cadette. (W. M. Yardley).—1. Golden Reinette; 2. Yorkshire Greening; 3. Norfolk Beefing; 4. Beauty of Kent; 5. Striped Beefing; 6. not known. (P. H. Wright).—Pear, Maréchal de Cour; 1. Blenheim Pippin; 2. Alfriston; 3. Tower of Glamis. (A. Parry Rogers).—Golden Noble. (George Randall).—1. not known; 2. Scarlet Nonpareil. (Manx).—1. quite rotten; 2. Louise Bonne of Jersey; 3. not known; 4. Nouveau Poiteau; 5. Auchan. (J. H. Cheshire).—1. Blenheim Pippin; 2. Hollandbury; 3. Beurré Diel; 4. quite rotten; 5. Winter Nelis; 6. not known.

Names of Plants.—We only undertake to name species of plants, not varieties that have originated from seed and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in firm boxes. Slightly damp moss or soft green leaves form the best packing, dry cotton wool the worst. Not more than six specimens can be named at once. (A Fifteen-years Subscriber).—We have not seen the flowers to which you refer. (W. F. G.).—The Ferns are *Gymnogramma corysophylla*, *Doryopteris palmata*, and *Adiantum mundulum*. (Houndswood).—1. Insufficient to be determined. 2. *Trichopilia tortilis*. 3. *Maxillaria picta*.

COVENT GARDEN MARKET.—DECEMBER 8TH.

BUSINESS very stagnant with prices easier. Large arrivals of Nova Scotia and Canada Apples to hand, as also St. Michael Pines. Grepes more than sufficient for the demand.

FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples	½ sieve	1 6 to 4 0	Melon	each	0 0 to 0 0
„ Nova Scotia and			Oranges	100	6 0 12 0
Canada, per barrel	10 0	13 0	Peaches	per doz.	0 0 0 0
Cherries	½ sieve	0 0 0 0	Pears	dozen	1 0 2 0
Cobs	100 lb.	60 0 70 0	Pine Apples English ..	lb.	1 6 2 0
Figs	dozen	0 6 0 9	Plums	½ sieve	1 0 2 0
Grapes	lb.	0 6 3 0	St. Michael Pines ..	each	2 0 5 0
Lemons	case	10 0 15 0	Strawberries	per lb.	0 0 0 0

VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Artichokes	dozen	1 0 to 0 0	Lettuce	dozen	1 0 to 1 6
Asparagus	bundle	0 0 0 0	Musbrooms	punnet	0 6 1 0
Beans, Kidney ..	per lb	0 6 0 0	Mustard and Cress punnet		0 2 0 0
Beet, Red	dozen	1 0 2 0	Onions	bunch	0 3 0 0
Broccoli	bundle	0 0 0 0	Parsley	dozen bunches	2 0 3 0
Brussels Sprouts ..	½ sieve	1 6 2 0	Parasips	dozen	1 0 2 0
Cabbage	dozen	1 6 0 0	Potatoes	cwt.	4 0 0 0
Capsicums	100	1 6 2 0	„ Kidney	cwt.	4 0 0 0
Carrots	bunch	0 4 0 0	Rhubarb	bundle	0 2 0 6
Cauliflowers	dozen	3 0 4 0	Salsafy	bundle	1 0 1 0
Celery	bundle	1 6 2 0	Scorzoneria	bundle	1 6 0 0
Coleworts	doz. bunches	3 0 4 0	Seakale	per basket	1 6 2 0
Cucumbers	each	0 3 0 4	Shallots	lb.	0 3 0 6
Endive	dozen	1 0 2 0	Spinach	bushel	3 0 4 4
Herbs	bunch	0 2 0 0	Tomatoes	lb.	0 6 1 0
Leeks	bunch	0 3 0 4	Turnips	bunch	0 4 0 0

PLANTS IN POTS.

		s.	d.	s.	d.			s.	d.	s.	d.
Aralia Sieboldi ..	dozen	9	0	18	0	Ficus elastica ..	each	1	6	7	0
Arbor vitæ (golden)	dozen	6	0	9	0	Fuchsia ..	per dozen	0	0	0	0
„ (common) ..	dozen	6	0	12	0	Foliage Plants, var.	each	2	0	10	0
Asters	per dozen	0	0	0	0	Heliotrope ..	por dozen	0	9	0	0
Bedding Plants, var.	doz.	0	0	0	0	Hydrangea ..	per dozen	0	0	0	0
Begonias	dozen	4	0	9	0	Ivy Geraniums	per dozen	0	0	0	0
Chrysanthemum ..	dozen	4	0	12	0	Lilium anatum	per doz.	0	0	0	0
Cockscombs ..	per dozen	0	0	0	0	Lobelias	per dozen	0	0	0	0
Cyperus	dozen	4	0	13	0	Marguerite Daisy	dozen	6	0	9	0
Dracæna terminalis	dozen	30	0	60	0	Mignonette ..	per dozen	3	0	6	0
„ viridis ..	dozen	12	0	24	0	Musk	per dozen	0	0	0	0
Erica, various ..	dozen	9	0	12	0	Myrtles	dozen	6	0	12	0
„ hyemalis ..	per dozen	12	0	24	0	Palms, in var. ..	each	2	6	21	0
„ gracilis ..	per dozen	9	0	12	0	Pelargoniums, scarlet, doz.	6	0	9	0	
Euonymus, in var.	dozen	6	0	18	0	Pelargoniums	per dozen	0	0	0	0
Evergreens, in var.	dozen	6	0	24	0	Primula sisensis	per doz.	4	0	6	0
Ferns, in variety ..	dozen	4	0	18	0	Solanums ..	per doz.	9	0	12	0

CUT FLOWERS.

	s. d.	s. d.		s. d.	s. d.
Abutilons	12 bunches	2 0 to 4 0	Lily of the Valley, 12 sprays	0 0 to 0 0	
Arum Lilies	12 blooms	4 0 6 0	Marguerites	12 bunches	2 0 6 0
Asters	12 bunches	0 0 0 0	Mignonette	12 bunches	1 0 3 0
Azalea	12 sprays	1 0 1 6	Narciss, Paper-white, bunch	4 4 0 6	
Bouvardias	per bunch	0 6 1 0	„ White, English, bunch	1 3 1 6	
Camellias	12 blooms	2 0 4 0	Pelargoniums, per 12 trusses	0 9 1 6	
Carnations	12 blooms	1 0 3 0	„ scarlet, 12 trusses	0 4 0 6	
„	12 bunches	0 0 0 0	Roses	12 bunches	0 0 0 0
Chrysanthemums 12 bchs.		2 0 6 0	„ (indoor), per dozen	0 6 2 0	
„	12 blooms	0 6 2 0	„ Tea	dozen	0 9 3 0
Cornflower	12 bunches	0 0 0 0	„ red	dozen	1 0 2 0
Dahlias	12 bunches	0 0 0 0	Parma Violets (French)	4 0 5 9	
Epiphyllum	doz. blooms	0 6 0 0	Primula (single) ..	per bunch	0 4 0 6
Encharis	per dozen	4 0 8 0	„ (double)	per bunch	1 0 1 6
Gardenias	12 blooms	4 0 6 0	Pyrethrum	12 bunches	0 0 0 0
Gladioli	12 bunches	0 0 0 0	Stephanotis	12 sprays	6 0 8 0
Hyacinths, Roman, 12 sprays		1 0 1 6	Stocks, various ..	12 bunches	0 0 0 0
Lapageria, white, 12 blooms		2 0 4 0	Tropaeolum	12 bunches	1 6 2 0
„	12 blooms	1 0 2 0	Tuberose	12 blooms	1 0 1 6
„ longisporum, 12 blms.		6 0 8 0	Violets	12 bunches	1 0 1 6
Lilac (white), French, bunch		6 0 8 0	„ Czar, French, per bunch	1 3 1 9	



SOUND PRACTICE.

Do farmers generally realise the importance of sound practice? Do they grasp fully the import of the term? Are they striving for improvement, or do they think the sort of improvement we advocate possible? Such and kindred questions have forced themselves upon us after hearing the debates of a certain Chamber of Agriculture, for in no speech we have heard has there been any reference to the possibility of obtaining some relief under the depression by any effort at improvement in the practice of farming. Assistance from without in the guise of State aid is the sum and substance of every resolution that is passed; anything like self-help is never mentioned, and we may therefore assume that the speakers would have it taken as a foregone conclusion that their practice is as near perfection as possible. Yet an appeal for aid to the Government or the country must naturally give rise to the inquiry, What have you done to help yourselves? Is your practice so sound that no effort of which you are capable can lead to better results?

Home farmers are frequently told that they are happy in the enjoyment of privileges beyond the reach of tenant farmers, that they have the landlord's long purse to draw upon, and therefore do not feel the pinch of hard times. But anyone concerned in the management of landed property must know that home farmers have now to work under the disadvantage of reduced expenditure, for reduced rents have so seriously affected the proportions of the proverbial long purse that economy and retrenchment cannot be ignored. Nor is this the only difficulty which has fallen upon the home farmer under the depression, for he has had on many estates to take charge of farm after farm thrown upon the landlord's hands by bankrupt tenants. No light matter is this, for such farms are usually in deplorable plight, the

land undrained, foul with weeds, and poverty stricken, and if under his lease or agreement the tenant was bound to keep up repairs in buildings, gates, and fences, they too will probably be found much dilapidated. It may be asked, How could the landlord or his agent suffer the tenant to be so negligent? Truth to tell, under the depression a tenant has had no money to spare for such purposes, and any attempt at compulsion would end in the farm being left upon the landlord's hands. Everything in reason that can be done is done for tenants now; rents have been reduced from 25 to 50 per cent., a helping hand is extended to every deserving tenant in a variety of ways, all repairs are taken in hand by the landlord, and new covenants have none of the old vexatious clauses or restrictions to a particular system of cultivation. But landlords have done much more than this; they have striven to show by example and precept how in some measure to meet our difficulties by better cultivation of the soil, by the acquisition of a thorough knowledge of the science as well as the practice of agriculture. Some have done what they could to improve the breed of cattle, sheep, and horses; others have done much for the promotion of improvements in culture—notably, Major Sergison, the Duke of Norfolk, Sir Spencer Wilson, the Marquis of Huntly, the Duke of Richmond, Sir Thomas Ackland, and many others. Both Major Sergison in the south-east of England, and Sir Thomas Ackland in the west have had elaborate trials of manures made upon their own estates. The last-named gentleman has recently published a 6d. pamphlet on "Practice and Science in Agriculture," in which he offers much useful information to farmers, and he enumerates certain cheap books which ought to be in the hands of every farmer at all desirous of self-improvement. Of these we may mention, "Chemistry of the Farm," by R. Warington; "Life on the Farm—Plant Life," by Maxwell T. Masters; "Life on the Farm—Animal Life," by Professor Brown, all published at 2s. 6d. each, by Bradbury, Agnew, & Co. "Science Primer—Chemistry," by Professor Sir H. Roscoe, 1s., published by Macmillan; "Lectures at King's College," by F. J. Lloyd on "Agriculture," 12s., published by Longmans; "Agricultural Chemistry and Geology," 6s. 6d., by Professor Johnston, published by Blackwood; and "First Year of Scientific Knowledge," by M. Paul Bert, 2s. 6d., published by Relfe Brothers, Charterhouse.

We enumerate these works with the prices and names of publishers, because we have often known earnest inquirers at a loss for such information, and we certainly desire to assist them. To them and to farmers generally we say, If you would have the respect, the assistance, and sympathy of all other sections in a community of which you form such an important part, do not rest content with a statement of your grievance, or an appeal for help, but show by your efforts at improvement—your general sound practice—that you 'trust and try.' It is certain that we have not yet attained to perfection in our practice, and we should certainly do well to try and see if anything we do cannot be done in a better way. Better in the sense of economy, certainty, and profit, for after all that is the safe test to apply to all our work. Do results show that our efforts at improvement lead to greater abundance, better quality in our farm produce? If so, we are certainly gaining knowledge that will eventually lead to sound practice in the fullest sense of the term.

WORK ON THE HOME FARM.

The spread of swine fever far and wide through the land is but another instance of the tendency to slovenly practices among farmers of the easy-going habit of following in the footsteps of our forefathers. Because the pig is an unclean animal, it by no means follows that it should be kept amidst filth as is so generally done. There can be no doubt that with clean styes and wholesome food we can avoid infectious disease if we are only careful enough in our purchases. It has long been a standing rule with us to keep newly purchased animals of kinds apart from others for a month or two, and thus avoid all risk of contagion. Extra care is taken now if cattle are bought, for we have repeatedly known cases of foot-and-mouth disease among cattle bought in December. The risk may be less now than formerly, as cattle are driven less and less by road, and are not so liable to become foot-sore and low in condition. See that all possible

care is taken of horses during winter. It is customary in the eastern counties for farm horses to lie out under open sheds in the horse yard at night. We do not approve of such a custom, and certainly consider that old or delicate horses should have the shelter of a stable at night. Even when young horses in robust health are left out regularly, the matter must not be left to the discretion of an ignorant horsekeeper. When horses have been a long journey with a heavy load, they return hot and tired, and to turn them out into an open yard involves much risk of serious illness, which is easily avoided by the exercise of due care. The recent loss of two horses at two of our off farms has led to the issue of stringent orders and rules to our bailiffs whom we are obliged to trust in such matters upon distant farms. Some of the labourers upon the home farm are now engaged in the grubbing and clearance of superfluous trees and hedgerows, which serve no useful purpose, but rather spoil crops and waste space. In this work a row of common land drain pipes is laid along the ditches before they are filled in, but all the work is done by measure and quantity. Piece work is best both for master and man, and we have all work that we can so done. See that there is no accumulation of water upon low-lying parts of winter corn fields. Open furrows sufficient wide and deep should be made at once after the corn is sown, and the ends finished by a man with a spade to ensure an unchecked flow of water to the nearest ditch.

THE SMITHFIELD CATTLE SHOW.—We have been requested to inspect the products of several exhibits at this Show, and incorporate any remarks to which they might be entitled with our report of the Exhibition. In reply, we have to inform our friends that the directors of the Show have again omitted to accord us any facilities for the purpose in question, no reporters' tickets having been received at this office. A correspondent, however, favours us with the following brief note on some exhibits which he thinks chiefly interesting to our readers. "The seedmen are well represented, all the leading firms having large and imposing stands in the gallery. Messrs. Sutton & Sons, Reading, have a great number of handsome roots, comprising fine samples of the Champion Swede, Berks Prize Mangold, Golden Tankard Mangold, and the Mammoth Mangold, one specimen of the last named weighing 73 lbs. Grasses, miscellaneous seeds, &c., are all well shown. Messrs. J. Carter & Co., High Holborn, contribute an abundant display of Mangolds, Swedes, &c., all of high quality, but the great feature of their stand is the collection of Tobaccos in various stages, from the raw leaf to the prepared product. This attracted much attention. Messrs. Webb & Sons provide an admirable display of their well known selections of Mangolds, Swedes, Wheats, and various other farm crops, very tastefully arranged. Samples of Tobaccos, which have also been successfully grown by this firm, together with the usual garden, vegetable, and flower seeds. Messrs. Harrison & Sons, Leicester, have a stand representing a number of their specialties, both in farm and garden crops. In the gallery and on the ground floor is a capital display of farm implements and machinery, comprising many excellent inventions and improvements. Very notable is a capital corn, seed, and manure drill, named the "Excelsior," which is shown by the Chadborn and Coldwell Manufacturing Company, 223, Upper Thames Street, and which was illustrated in your pages some time since. It is an admirable machine and obtained the approval of many practical men who inspected it. Another portion of the hall is devoted to the exhibitors of patent or special manures, and amongst them the stand from Messrs. Wood & Sons, Wood Green, London, was particularly interesting, containing a variety of manures and composts prepared for special plants."

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude, 111 feet.

DATE.		9 A.M.					IN THE DAY.					Rain
1886. Nov.—Dec.		Baromet- er at 33 ¹ / ₂ and Sea Level	Hygrome- ter.		Direction of Wind.	Temp. of Soil at 1 foot.	Shade Tem- perature.		Radiation Temperature			
			Dry.	Wet.			Max.	Min.	In sun.	On grass		
		Inches.	deg.	deg.		deg.	deg.		deg.	deg.	In.	
Sunday	28	30.404	43.3	42.5	N.	44.0	47.9	41.4	50.0	38.7	0.041	
Monday	29	29.610	48.1	47.9	S.W.	44.0	50.4	43.0	65.2	41.3	—	
Tuesday	30	29.665	36.4	35.4	W.	43.6	45.2	35.3	65.3	28.2	—	
Wednesday ...	1	29.907	33.2	31.9	W.	41.8	42.7	30.5	64.2	23.2	0.014	
Thursday	2	29.896	29.4	28.0	N.W.	40.4	34.9	28.2	61.3	21.5	—	
Friday	3	30.092	23.6	23.2	N.W.	39.2	33.7	21.7	48.8	15.4	0.092	
Saturday	4	29.778	38.1	37.3	S.E.	38.2	42.2	22.3	44.1	18.2	0.278	
		29.907	36.0	35.2		41.6	42.4	31.8	57.0	26.6	0.425	

REMARKS.

28th.—Cool and fresh, but not bright.
29th.—Wet early, but gradually cleared, and fine bright day and night.
30th.—Bright and fine.
1st.—Cold and fine, with much sun, shower at 5.30 P.M.
2nd.—Cold and generally bright, slight snow at 1 P.M.
3rd.—Very cold and generally fine, a little fog at times.
4th.—Sleet began about 6.15 A.M., turning to rain, which continued till about noon, fine after, brilliant night.
Rather a cold week, owing to the sharp frost on the 3rd. This frost remarkably resembled that of December 11th, 1885, for which the figures will be found to have been taken the columns as in the above table:—

1885—Dec. 11th	30.507	24.2	23.6	N.W.	37.5	33.8	22.3	51.7	15.4	
1886—Dec. 3rd	30.092	23.6	23.2	N.W.	39.2	33.7	21.7	48.8	15.4	0.092
Difference	— .415	— .6	— .4		plus 1.7	— .1	— .6	— 2.9	plus .92	

With the exception of the barometer the agreement is marvellous, and the remarks on the weather agree equally. The note on December 11th, 1885, is "Very cold but bright, slight fog at night." The note for December 3rd, 1886, will be found above in its proper place.—G. J. SYMONS.



16	TH	Royal Society at 4.30 P.M. Linnean Society at 8 P.M.
17	F	
18	S	
19	SUN	4TH SUNDAY IN ADVENT.
20	M	
21	TU	
22	W	

THE CLAIMS OF THE ROSE.

ALMOST before the great flower of autumn has faded preparations commence for bringing out in its fullest and irresistible charms the undoubted summer queen—the Rose. The National Rose Society appeals to the sympathies of a larger and wider constituency than can be claimed by any floral occupant of the garden; it has therefore a corresponding claim for the support of individuals and the co-operation of local organisations that are desirous of extending and perfecting the culture of a plant that is so amenable to improvement, and which gives such a splendid return to all who treat it generously and well.

The annual meeting of the National Rose Society is regarded by not a few of the readers of this Journal as one of the events of the year. The existing position of the Society and its prospective work are matters in which a large amount of interest is centred. It is pleasant to learn from the report that will be found in another column of the harmonious gathering of the 9th inst., that affairs have been so well managed as to show a clean balance sheet, notwithstanding some special outlay and a slight falling off in subscriptions. It is well to give prominence to this, both as affording evidence of judicious administration that should insure confidence and invite support, and as enforcing the desirability of a strong effort being made to more than restore what has been lost, and enable the Committee to work effectively in achieving their object—the widely extended and superior culture of the Rose.

Much has been accomplished in the past, but a wide field is open for future action, and it would be to the advantage of all to see it well tilled. Without Roses our gardens and our country would be deprived of one of their principal charms. Let Roses, then, be increased till they are seen everywhere, and the best method of contributing to that increase is to present them in the greatest possible numbers and highest developed forms at public exhibitions. The issue may then be left to the influence they will exert on the minds of those who inspect them. If a supply creates a demand in anything it is in Roses. The blooms are lingered over, longed for, even clamoured after, at the close of exhibitions, and few deeper regrets are experienced than by the gardenless visitors who are entranced by the peerless beauty of the blooms that they cannot join in producing. But there are thousands who can share in this delightful occupation who, until they see what can be accomplished, have no incentive to excel or to acquire those varieties that endear them to all discriminating tastes.

We have said the National Rose Society appeals to the widest of constituencies. It does so in virtue of the commanding nature of the flower, the extended culture and higher development of which it is established to promote. Though we have Roses in abundance at Christmas, specially grown under artificial conditions to meet the floral requirements of the festive season, yet the Rose of summer, which is seen

in all its splendour at exhibitions, would rebel against any such nurturing care. Its hardiness and ready adaptability to various positions enable it to be grown almost everywhere by whoever will study its simple wants and provide them. It is the most generally admired and widely cultivated of all flowers, and that is the justification of its claim to pre-eminence. And it is grown better—that is to say, more uniformly and generally better—now than at any time anterior to the establishment of the Society that has done so much for its increase and improvement during the past ten years. Undoubtedly grand examples were seen previously, and it may be some equal to the best that are now produced; but in the former period magnificent stands—of Teas, perhaps, especially—were the exception, whereas now they are the rule at all the chief exhibitions. This is the best evidence of progress coupled with the great increase of exhibitors. There are also more Roses than ever there were in gardens, grown not for public display, but for home adornment. This is a gratifying circumstance, and the more so because they are not limited to the gardens of the affluent or of the clergy, all of whom can scarcely be included in that category in these unsettled days. Doctors and lawyers, soldiers and sailors, merchants and shopkeepers, farmers and artisans, are growers of Roses now, and amongst all these classes are to be found successful exhibitors. This must be regarded as encouraging, for perhaps no one has known a man to become less worthy from association with the Rose; but instances could be cited of homes made brighter and happier, and villages rendered more agreeable by the abounding presence of Roses in gardens large and small.

No section of the community has done so much to popularise the Rose and to incite to its higher culture as that of the clergy. To them the perfecting of one of the most variedly beautiful and sweetest of gifts that could be sent to gladden the heart of man is congenial occupation. They indulge in it because the pursuit affords them wholesome mental and physical exercise, and because it is good in itself and fraught with good to others. The clergy have been pioneers in the work which it is so desirable to help onwards, for they have introduced Roses into remote villages and obscure hamlets; and the love thereby implanted has spread round the centres like the waves that extend in widening circles from the pebble thrown into the stream. This parochial system of distributing Roses has given an enormous impetus to their culture, until the demand has become so great that it may be safely said hundreds of persons are engaged in their production, and numbers of families dependent on them as the main source of their livelihood. This is a reminder to the few stern utilitarians who fail to see that any substantial good is derived from the culture of flowers. Happily such persons are becoming more and more scarce, and the sooner they dwindle to the vanishing point the better will it be for all.

And, besides the high measure of intelligence and practical skill brought to bear on growing Roses by the clergy of this kingdom, they are the chief inaugurators of societies and managers of shows. Nor is this all. They are also the head teachers through the press of the art of Rose-growing, adding to technical knowledge of the subject the requisite literary taste that renders their contributions so agreeable. But they are closely pressed now in this respect by the increasing number of lay admirers, who possess similar educational advantages with themselves, and have become expert growers and successful exhibitors. The pages of this Journal have been enriched in the past by the best examples of Rose literature to be found in our language, and its character will be maintained by old friends and new, who are zealous in upholding the supremacy of the flower they love so truly and grow so well.

It has been announced that before the commencement of the Jubilee year, the Queen will be petitioned to create a new Order, to mark the event. This Order, it has been sug-

gested, should be called *The Rose*, and it is intended by those who are pressing the matter forward that the recipients should be distinguished in literature or art. Who more worthy to be invested with this Order than gentlemen whose literary attainments are proverbial, and whose possession of the art of growing and of popularising *Roses* is universally recognised? It would not seem inappropriate for the Royal Horticultural Society and National *Roso* Society to join in the petition on this subject, if the proposition be carried out.

MEALY BUG ON VINES.

ALL who have had any experience of this pest on their Vines assert it is the most objectionable of all, as, although it does not injure the foliage like thrips or red spider, it congregates in the bunches and makes them totally unfit for use. This is the most serious drawback in having mealy bug on Vines, and nothing could be worse, as, no matter how fine the berries and bunches may be, they will invariably disgrace the grower if sent to the table with any of these repulsive insects clinging to the stems and berries. When once they get into the bunch it is a most difficult matter to get them out again; in fact it cannot be done without disfiguring the bunch so much that the cure will almost be worse than the disease. We have known attempts to be made to wash them out, and this may have been accomplished to a certain extent; but just think of how a washed bunch of Grapes would look on the table, and it will be understood how undesirable this plan is. To sprinkle them with any insecticide spoils the bloom, and some of the wash is generally left on the berries. This is far from agreeable, and none of those cures should be trusted to make the fruit acceptable. The only satisfactory way is to destroy the vermin before they have any chance of coming in contact with the bunches, and the time to do this is when the Vines are pruned and cleaned.

As these operations now demand attention the present is a suitable time to call attention to the matter, and I may say no surface cleaning will ever eradicate them. I have seen surfaces of the Vines, woodwork, floor, and every visible part made perfectly clean, and the hope was expressed that the bug had at last been exterminated; but this was all a mistake, as many of them or their eggs were safely secreted under the protection of the bark, and as soon as this began to crack and open, as it always does when the Vines advance in growth, the insects were liberated and were quickly in possession. Many give their Vines a rough cleaning at pruning time, and then paint them with some kind of mixture, thinking that insects which were not killed in cleaning will meet their death when they come in contact with the dressing; but this does not soon follow, and very often it never happens, as they remain dormant until the Vines are well into growth, and by that time the dressing has lost its virtue and they can come in contact with it with impunity. If they are to be eradicated at all it must be done wholly at cleaning time, and no after chances must be trusted to, and they will never be killed unless the place they now occupy is reached. The only way of doing this is to clean the loose bark most carefully and completely from the rods. Not a fraction of it should remain, and when all is thoroughly cleared their destruction is easily attained.

My one cure is inexpensive but sure. It is petroleum. There is no insecticide to equal this for destroying mealy bug. Whenever it touches them, even in a diluted form, they shrivel as if submitted to fire, and those who would rid their Vines of mealy bug must depend entirely on it. As soon as the innermost harbours of the bugs have been exposed the oil should be applied, but not in its full strength. One wineglassful to one gallon of hot water makes a strong and deadly mixture, and if a piece of washing soda about the size of a pigeon's egg is added it may be applied more easily. It should be stirred well up, and then give the rods a complete washing with it. A sponge may be used, and the same part should be washed again and again before passing further down the rod; and as soon as the bottom of the rod has been reached the rod may be sponged again with clean water heated to 90°. This will remove any danger of the oil injuring the Vine, and a few minutes are quite long enough for the oil to be on the rod to destroy the insects, as they cannot withstand it for an instant. In cases where the bugs are very numerous I should have no hesitation in using double the quantity of oil already named to one gallon of water. We should squeeze the sponge hard against the rod each time it was drawn from the bucket, and another should follow with clean hot water to wash the oil off immediately afterwards. No insects should escape then unless they were under the bark. Besides washing the rods with the oil at the strength indicated, a quantity of it must be at hand in a jelly mug, and this should be worked

into every hole and crevice about the woodwork, wirework, or walls to destroy any which may be lurking there. The oil may be used at its full strength in this case, and the whole of the woodwork and glass be washed with water and oil mixed in the same proportion as was used for the rods. The most severe cases of attack by mealy bug may be rectified at one dressing by following these directions closely, and this is more than I can say of any other practice I have any knowledge of.—J. MUIR, *Margam*.

GROUPING CHRYSANTHEMUMS IN COLOURS.

JUDGING from the interesting report at page 503 of the New York Horticultural Society's Exhibition of Chrysanthemums, the Americans are ahead of us in making their shows effective. Managers of exhibitions on this side of the water ought to feel indebted to you for the means of getting access to the hints embodied in that report, and might well consider if it be not possible to americanise to some extent these popular November institutions. There would be little difficulty, for instance, in grouping plants after the work of judging has been completed, or the plants might be allowed to remain in position during the first day of the show in order to give growers and others interested an opportunity for critical examination of the exhibits. Before the time of opening on the second day there would be plenty of time to re-arrange the whole of the plants into groups. The Chrysanthemum holds a place so far in advance of most plants for effecting telling arrangements that it does seem a pity that something in the way indicated is not carried out. An important feature of the Exhibition referred to seems to have been the massing of the various colours in separate groups, and it is somewhat curious that a correspondent in the same number at page 494 in a short note recommended the grouping of colours in masses; so that we have at least the beginning of what is at once a novel and successful method of utilising the brilliant blooms of the main-season varieties.

The Journal has been so often first in lending its pages to further the introduction of anything new and good in connection with gardening, that I may safely rely on a little indulgence while I press on gardeners before the Chrysanthemum fever has abated the consideration of the above method of arranging their home plants. Though I have had a houseful of plants grouped in different shades and colours, I have nothing whatever to say against dotting and mixing colours, for I have also a house arranged in that way, and when well done the effect is telling and pretty; but it most certainly is not so effective, and fails altogether in massiveness when compared with the system I wish to induce growers to think over, and at the proper time to try for themselves. But of course it must be conceded that the kind of structure one has to work with must determine to a great extent the method of arrangement, some houses being quite unsuitable for any other method than that of dotting, and in such circumstances it would be unwise to attempt to mass the colours. Even in more suitable houses we have to work at a disadvantage on account of various drawbacks which it is impossible to remove and which must be put up with.

The structure in which I have this season grouped a selection of plants is an early vinery over 50 feet in length, and with a width on which to stand the plants of 9 feet. We began our arrangement by blocking up the further end of the house with large bushy plants of Mrs. G. Rundle, their tops reaching very near to the glass roof. The back row was then formed, yellow sorts being used for this purpose, the taller ones going next the Rundles, and grading lower and lower until at the door end they would be about 5 feet in height. The line was composed of soft shades like Mr. G. Glenny, alternated with darker shades such as Gluck, Mrs. Dixon, and Jardin des Plantes. Then beginning again at the end bank of Mrs. Rundle a large group of various shades of bronzy reds and yellows was put in. These consisted of sorts like Lord Wolseley, Sir S. Carey, Mr. John Laing, Réverie, Source d'Or, William Robinson, L'Île des Plaisirs, Barbara, &c. Next these we place whites, as Lady Selborne, Jeanne d'Arc, and Fair Maid of Guernsey; then a dark mass of Rex Rubrorum, and others. James Salter, Alfred Salter, M. Brun, Her Majesty, &c., formed another group. Le Chinois formed a small group of itself. Mrs. G. Rundle, Empress of India, and Timbal d'Argent represent another mass. Prince of Wales, President, Balmoreau, &c., another; then Lady Hardinge, Prince of Anemones, and A. Salter form another. Hiver Fleuri, Triomphe du Nord, and Chevalier Damage respectively made small groups. The dwarfier kinds for the front consisted of such kinds as Cedo Nulli, La Nympe, Aurore Boreale, and various Pompons, the whole being so arranged as to rise with a gentle slope from the door end to the back, and also to the other end, so that the eye took in the whole arrangement at a glance. One good feature of employing different sorts of one colour

together may be pointed out. By doing so, while the effect is secured looking at the arrangement as a whole, when examined critically, we have not only difference of shade but the equally interesting varieties of form which give to *Chrysanthemums* so much of their distinctiveness; and by the simple process of eliminating a few plants and replacing them with others of the same colour, but of a different form, the whole tone of the arrangement is changed. Thus, if we replace Mrs. Rundle with *Fleur de Marie*, or add *Venus* or *Acquisition* or Mrs. Pethers to a group of lilac, or draw out a few dull sorts and refill with *Val d'Andorre*, *General Bainbridge*, or *Cullingfordi* what a difference is at once made; and, of course, to the resourceful man there is no end to the harmonies he may extract from a well-chosen selection of good plants. He may grade maroons, reds, bronzes, oranges, yellows, to creamy whites like Mrs. Forsyth, and clear whites like Elaine. From white he may arrive by means of blush, soft lilac, deep lilac, light and dark purples to a contrast of bright yellow or of scarlet shades. Or he may work by way of light browns, amber, chestnut, up to red; and at any stage by simply introducing some novel form, such as the *Anemone*-flowered or some peculiar colour, at once add a good feature and secure from sameness at very slight trouble. In any case no hard-and-fast line of working should be laid down, and above all the plants ought to be allowed as much freedom of growth as is consistent with good effect.—B.

ORCHIDS IN PLANT HOUSES.

In many places where choice flowers for buttonhole and other bouquets, &c., are constantly in demand, a difficulty often occurs, particularly during winter, in supplying from a miscellaneous collection flowers suitable for the purpose. Nothing can be more desirable where such is the case than a selection of Orchids. Many of the loveliest of these readily adapt themselves to the conditions of an ordinary plant stove, a great boon where special structures cannot be devoted to their culture. Indeed, it has been my practice to grow such as I note here under like conditions, though having Orchid houses proper.

In making this selection I have taken into account vigour of constitution, quality as well as quantity of bloom produced, freedom in blooming, and last, but in many cases not least, the consideration of cost; and whilst upon this subject, I may say that "although fabulous prices are still paid for rarities," Orchids generally are as cheap as any class of plants, and certainly much cheaper, "comparatively speaking," than much softwooded stuff that is now popular.

Dendrobium nobile is already extensively grown, and is decidedly one of the most deserving. It can be had in bloom from the New Year to the end of April by having a succession of plants. I have had a good supply from November to the end of May. To attain this, numbers of plants are required, which should be grown in a light position, the pseudo-bulbs thoroughly ripened, and placed as their growths are matured in a cool place—say on a shelf in vinery or Peach house. It is well, however, to first bring them from the stove into an intermediate temperature for a few days before placing them in cool quarters, where they will require no water further than to prevent shrivelling. For forcing early, select those with the best developed buds, and before placing in warmest house, let them remain for a short time in an intermediate house and still keep them dry; very little water will be required until flowering is over and growth again proceeding.

The same remarks apply to *D. Wardianum*, which also can be flowered in the same manner as *D. nobile*, and, though it is not wise to retard growth too long, I have seen this in full bloom in June. This, with *D. crassinode*, *D. Devonianum*, and *D. chrysanthum*, which are well worthy a place, should be grown in baskets or perforated pans suspended from the roof so that the growths are quite a foot from the glass; they like a light position, but are apt to be injured by the fierce rays of the sun. *D. nobile* I prefer growing in pots. They all require abundance of water, and syringing twice daily. The best mode of potting has often been detailed in the *Journal*, but I would emphasise plenty of drainage and very little besides. Any peat or sphagnum used should be made very firm.

Cœlogyne cristata is another desirable Orchid, its delicate flowers being suitable for all decorative purposes. It is not particular as to temperature, intermediate or warm house suiting it equally well. It should, however, be in a light position, so as to make its pseudo-bulbs firm to insure flowering; when growth is completed remove to a cooler house, not cold, and suspend watering.

Cymbidium eburneum is entitled to a place for its large white fragrant flowers, which are freely produced, and will succeed well in stove or intermediate houses. The majority of *Cypripediums* also will do well in the stove, the best, perhaps, for our present purpose being *C. insigne* and its variety *C. i. Maulei*. *Miltonia spectabilis* I

have found very useful, but it should not be syringed heavily, nor when at rest should it be dried too much.

Our list would not be complete without including the too much neglected *Sobralia macrantha*; its flowers equal in beauty some of the finest *Cattleyas*, and though they last but a few days, they are succeeded by others on the same stem for a considerable time. It is, moreover, easily cultivated, and requires a little stronger compost than other terrestrial Orchids.

There are many others that could be enumerated that would thrive under like conditions with a little more attention than the foregoing. No extra trouble, however, need be taken with those named; but it must not be supposed that satisfactory results can be obtained without several good plants of each, say three or four 10-inch pans of *Cœlogyne* and *Miltonia*, two or three pots each of *Cymbidium* and *Sobralia*—the latter should have plenty of pot room. If a few good plants of each of the *Dendrobies* can be obtained for a start, there will be no difficulty in getting a good stock in the course of a year or two. The old pseudo-bulbs may be taken off and pegged firmly on to sphagnum-surfaced pots, filled with drainage and kept moist, where they will soon grow; or better still, instead of cutting the pseudo-bulbs off, layer them on the pot in which they are growing, then when they have made root and top-growth they can be taken off and potted separately in small pots. A good plan to increase the stock of *Dendrobies*, especially *D. nobile*, is to grow one or two plants in a shady position, where they will make soft wood, and instead of flowers a quantity of young plants will be the result. These should be allowed to root well, and can then be taken off with a portion of the pseudo-bulb and potted.—BRADWEN.

AN OLD LECTURE ON POTATOES.

AN unpublished lecture on Potatoes having fallen into our hands we have no hesitation in publishing it in an abridged form; first because it is the production of an old friend, Mr. Robert Fenn, and secondly because it conveys information as sound as is presented now by modern teachers on this subject. Mr. Fenn was one of the first to advocate a more rational method of culture than prevailed at the time his lecture was delivered thirty-three years ago in the Mechanics' Institute of Woodstock; and he is the raiser of some of the best varieties in cultivation.

In nature all plants seem to enjoy a soundness of constitution which bids defiance to disease—no failure of crops or falling off of blooms prematurely. Age after age views the inhabitants of mountain and plain luxuriating in wonted vigour, and rarely dying out before a progeny to continue the species has been secured. Such is the disposition of plants if left to Nature, but man desires their service and company—the flowers please his eye, and their produce gratifies his taste; but as he cannot always travel from "Indus to the Pole" to admire and collect them, he has attempted to domicile his favourites with himself, and often with success, though not always; for like spoiled children these pets are often capricious, and even with all the care and kindness their guardians can employ, they become subject to various incurable maladies, disappointing the hopes of their possessors. But what are most flowers and fruit in nature, without cultivation, compared to the progeny which has been improved from them? The *Dahlia* in its wild state might command a passing glance from the traveller, or the Crab Apple a single trial of its sour austerity, but under cultivation the one offers a display beautiful in the extreme, and the other affords a profusion of the most delicious fruit. Those who sneer therefore at the cultivators of plants know not their own mental organisation nor its harmony with the vegetable world, but they arraign and scoff at the great Author of both. For—

"Not a plant, a leaf, a flower but contains
A folio volume. We may read, and read,
And read again, and still find something new—
Something to please, something to instruct
E'en in the noisome weed."

Each plant has its own soil and climate, and in cultivation we endeavour to place it as far as it is possible under the same circumstances; and the nearer we can bring these circumstances to those of Nature the better will our plant thrive with us. In some cases this is impossible as when we attempt to cultivate a cold alpine plant on warm soil near the sea level. As regards the Potato one thing, from experience in the cultivation of this vegetable, is clear; for, many years after its introduction to Britain there was no sickness in its ranks. Nature now steps forward to prove her triumph over Art; but although the evil is upon our Potato crop, let no one shrink from its cultivation, for no one can say that the plague will not be stayed.

The Spaniards first visited South America in the year 1492, and there is no rational doubt of this being the earliest period in which

the Potato became known to Europeans. The wild Potatoes, both in size and flavour, are far inferior to the cultivated varieties. Best Potatoes are cultivated in Peru at an elevation of 7000 feet above the level of the sea, a much lower atmospheric pressure than this in which we cultivate them in Britain; and I imagine this may be one of the causes of its sickness, for the plant is in general less liable to disease in our hilly districts than it is in the low grounds. Dr. Ischudi in his travels in Peru tells us their best Potato is called Papa amarilla. It is small and round with a thin white skin, and when bisected the colour is a clear bright yellow; there is much demand for it in the markets there, and the other sorts he says are very well flavoured. In 1619 Potatoes were here a desired yet expensive luxury; for in that year of James I.'s reign a small dish of them provided for his Queen's table cost 1s. per lb., when money was at least twice as valuable.

In 1664 was published a pamphlet, the first ever devoted to the subject, bearing this title—"England's happiness increased, or a sure and easy remedy against all succeeding dear years, by a plantation of the roots called Potatoes, whereof (with the addition of Wheat flour) excellent, good, and wholesome bread may be made every year, eight or nine months together, for half the charges as formerly. Also, by the planting of these roots, 10,000 men in England and Wales, who know not how to live or what to do to get a maintenance for their families, may, off one acre of ground, make £30 per annum. Invented and published, for the good of the poorer sorts, by John Forster, Gent., of Harslop, in Buckinghamshire." He says that the sorts he recommends for general cultivation are the Irish Potatoes. He recommends a dry well-drained soil for them, to be enriched with dung if necessary, and explains how the Potato may be raised from the seed instead of the roots. Mr. Forster then considers the Potato as a political question, and recommends the King, Charles II., to order an importation of the root from Ireland, and that every man in every parish shall grow an acre or two; and that, out of every £30 worth grown in the parish, £5 shall be paid to the King! and concludes with directions for making Potato bread, Potato biscuits, Potato pudding, Potato custards, and Potato cheesecakes. Worlidge writing in 1687 merely suggests that Potatoes may be useful for swine or other cattle. In 1693 Sir Robert Southwell, President of the Royal Society, communicated to that learned body the fact that his grandfather first cultivated the Potato in Ireland, and that he obtained it from Sir Walter Raleigh.

Miller, in 1771, only mentions two varieties, the red and white tubered, which had been noticed by writers a century before, and as late as about 1770 the Potato was not known generally in the south-western counties. The late President of the Horticultural Society, Andrew Knight, Esq. (whom I knew very well), said he could just recollect the time when the Potato was unknown to the peasantry of Herefordshire, whose gardens were then almost exclusively occupied by different varieties of Cabbage. Their food at that time chiefly consisted of bread and cheese, with the produce of their garden, and tea was unknown to them. Famine at last gave the great impulse to the cultivation of the Potato, and during the latter part of the eighteenth century its excellent qualities became generally understood there.

(To be continued.)

THE CATTLEYA AND ITS CULTURE.

At a recent meeting of the Birmingham Gardeners' Society, Mr. E. Cooper, gardener to the Right Hon. Joseph Chamberlain, M.P., read an instructive paper on the Cattleya. Alluding to the varieties first cultivated, reference was made to the fine hybrids raised by Messrs. James Veitch & Sons, Chelsea, the work of Mr. Dominy, and of other hybriders and raisers, such as Mr. Seden and others, and, to come closer home, of the work in this respect being done by Charles Winn, Esq., and his gardener Mr. Barnes. Mr. Cooper spoke of his first acquaintance with the Cattleya some twenty-five years since when in the gardens of Lord Leonfield, and at that time there were but few Orchid growers, these plants being generally cultivated in mixed collections of plants. Removing to Dale Park, Mr. Cooper found a larger collection of Orchids, where a house was devoted to them, and afterwards to Dangstein, Lady Dorothy Nevill's seat, where for the first time he found a house devoted to Cattleyas and Lælias alone. On taking charge of Mr. Chamberlain's gardens twelve years since, there were but three Cattleyas in the collection, but the Highbury collection of the present day is known to be a very extensive one, and containing almost every fine species and variety, Cattleyas being for the greater part grown in pots or baskets or pans, some few varieties doing best on blocks. The soil used is good fibrous peat with the dust part taken from it, used in fair sized lumps, a portion of sphagnum, broken crocks, and charcoal; the charcoal most preferred being that from hard wood, such as oak, ash, or elm, burnt

in the old-fashioned way in heaps, not in kilns. Clean pots, clean crocks, and the plants potted moderately firm, more so than most other Orchids, and the centre of the plant and soil kept above the rim of the pot.

In repotting established plants, Mr. Cooper found it best to remove carefully the whole of the old soil and cut away any dead roots, then repot, first covering the crocks with sphagnum to secure good drainage and working the soil amongst the crocks. In potting newly imported Cattleyas nearly the same treatment was followed, only using more crocks and charcoal and less peat and sphagnum. Some good growers pot newly imported plants in crocks only, but Mr. Cooper's practice has led him to continue potting as described, and keeping them for a week or two in a shady part of the house before potting them, and after potting, giving them nearly the same treatment as the established plants, only giving them less water. Some sorts experience had shown him are best grown in pans or baskets suspended near the glass, keeping the foliage about 6 inches from the glass, especially such sorts as *C. gigas*, *C. Dowiana*, *C. Sanderiana*, *C. speciosissima*, and *C. marginata*. *C. citrina*, at Highbury, is not grown with the other Cattleyas, but with the Mexican Orchids, and fully exposed to the sun; a few others are found to do best on blocks, such as *C. superba*, *C. Acklandiae*, and *C. Schilleriana*. Mr. Cooper has often found it a good plan when a Cattleya became unhealthy to put it upon a block for a year or two. Repotting is done directly after flowering and before they begin to make new roots.

Watering should be done carefully, using rain water if possible, and watering only the soil, not the foliage or the pseudo-bulbs. A light, airy, well-ventilated house was advised, but avoiding cold draughts of air, the underneath ventilators being just against the hot-water pipes. Mr. Cooper finds it beneficial to Cattleyas to admit top and side air night and day even in cold weather, and never closing the houses only for an hour or two in the growing season in the afternoon during the spring and summer months, say from March until the end of September, the growing season, when they should be kept warmer and the atmosphere moister, but on no account should evaporating pans on the pipes be used, but plenty of water should be used on the stages and floors. Pans of liquid manure are stood about the house, but no manure is given to the plants. The temperature should be from 60° to 65°, and in very hot weather may be 70° at night. During the winter months moisture should be withheld from the houses and be kept dry, having only sufficient water to prevent the pseudo-bulbs from turning yellow and shrivelling, and the temperature from 50° to 55° at night and 60° to 65° in the day. Some of the Cattleyas finish making their growth during the winter, and these should, if possible, be kept at the warmest end of the house.

Insect pests have to be dealt with, especially scald, green fly, and thrips, but the most destructive of all is the Cattleya fly or borer. At Highbury some imported plants were terribly infested, and for months repeated fumigations were tried without effect. This insect pierces the young growths before they really start into growth and deposits its eggs, and the growths are swollen, and to the uninitiated fine strong growths are welcomed, but many of them will rot off, and the others only partly develop themselves. The young grubs, after being hatched in the young growth, feed on the interior, forming a cavity, and when the insect is fully developed, it eats its way out and goes through the process of depositing further eggs. Mr. Cooper found it necessary to cut away every bit of growth affected by this borer, and by closely following up this remedy the collection was free from it, but only after much damage had been done. Mr. Cooper strongly advises all buyers of imported Cattleyas to place them in another house for a time and thoroughly examine them. Green fly is easily killed by fumigating, and two moderate applications better than one very strong one. Sponging with strong tobacco water and soft soap mixed for scale, or Fir tree oil, which is most effectual in removing scale.

RHUBARB FORCING.

"A WORKING GARDENER" reminds me at page 520 that 50 per cent. of those who force Rhubarb could not do so in the manure yard for want of room. It may not be always convenient to use such places, and therefore I named the frame ground, but it did not occur to me that by making use of the manure in the yard that I was reducing the space in it. Your correspondent overlooks the fact that he is not forced to take anything into the yard but the Rhubarb roots, and these are placed on the manure.

But I will not confine him to the manure yard. What about the frame ground, a portion of which is generally at liberty this time of the year? and your correspondent must have some such place to mix his fermenting materials, if for nothing more. If he has plenty of leaves he can wheel them in there as they are collected, and when of sufficient bulk to ferment he can place the roots on them and cover the pots over with more, using

litter to prevent the wind blowing them about. Should this plan not meet his views, I would suggest that he should take the roots to where he stores his leaves, and where is the labour involved in any of these methods?

"A Working Gardener" says that as much labour would be necessary in lifting and planting the roots as in forcing as he described in his first letter. But a man will plant in an hour as many roots as would serve a large establishment a whole year, and if the ground is in good heart to produce any other crop, it will grow Rhubarb, if two or three spadefuls of manure are mixed with the soil where each plant is to be in order to give it a good start. Taking up the roots is a small item of labour compared with the excavations advocated. Besides, these trenches just take up as much ground as a row of Rhubarb, or one year's supply. I may here add that roots after their second year's growth should be as good as older ones for forcing. Assuming that up to this stage the labour of each method is equally balanced, your correspondent has yet to get his materials and turn them over the orthodox number of times, wheel them to the Rhubarb bed at the rate of two cartloads for each root; and that is not all, for if heavy rain or a fall of snow succeeds his operations, the probabilities are that the heat will be "washed out" of his fermenting material, and some fresh manure has to be added, all of which must, as I said before, be wheeled away after forcing is over, and then there are the trenches to be filled up.

"A Working Gardener" appears to be averse to the use of a manure bed for forcing Rhubarb, and infers that the sticks would be flavoured with the manure. Market gardeners never use anything but a hotbed of manure for the purpose, and have long ago recognised the economy of lifting the roots and placing them on the manure, but I never heard that their produce was tainted with it. It is, however, possible for it to be so affected if the sticks have to force their way through the manure, as is

and care, so judiciously exercised and carried out with such exceedingly good taste, that we cannot help the impulse which prompts us to put our few mentally made notes, made on the occasion of a recent visit, into some more tangible form of expression.

Upon the occasion referred to we took train upon a bright autumn day and booked for the nearest point to which the railway train can take the visitor—some three or four miles from the mansion. The approach to Jodrell is most effective, as there is a broad sweep of lawn faultlessly laid which at once attracts attention by its breadth of beautiful velvety turf. A broad belt of well selected carefully planted trees skirts the high road and secures that privacy and harmonious blending which can only be secured by the graceful form of a natural line of living trees. The belt is fringed with ornamental trees, choice shrubs, and remarkably fine Rhododendrons.

We have only got thus far when the gardener, Mr. Gough, meets us, and very kindly takes us under his charge to point out the features of the place as they present themselves. It is very evident that the same skill which helped to make Baron Hill famous in the gardening world has been actively at work in and about the grounds at Jodrell, and the same heartiness of manner and cordiality of hearing shows that time has not blunted the enthusiasm or chilled the warmth of his heart. He is full of zeal as ever, and seems to bring before us the vivid reality of things as they were. "Here we took away this and that, and made it as you see it. There we found a little clump of pretty shrubs would claim the attention of a passing glance, whilst here a badly planted group of stunted growth broke the line of symmetry and concealed the line of beauty which helped to make the corner complete. Yes, and the lawn we are now standing upon was, twelve months ago, a bare field, and now we have lawn and carriage drive where before there was but the unattractiveness of a piece of poor pasture."

So do we have the story of the place's development told us as we proceed, and now we get round to the outhouses, and stay a moment to admire the fine stables, where we are told the popular squire, J. E. Reiss, Esq., has over twenty horses, for this is a hunting country, and runs with "the Cheshire" are brisk, and for the most part over heavy ground, so that for a keen sportsman a large reserve is needful for the possible demands of "a brilliant season." Here is the Hall itself, with its added "new wing," the design of which is quite in keeping with the architecture of the older portions, and with the natural surroundings of the home.

But in the gardens and grounds lie, for us, the chief charms of attractiveness, and here, in front of the dining-room window, we find a very imposing arrangement of beds filled with Daisies and Silenes, giving a quaint prettiness to the raised mounds which show their dainty occupants off to such advantage. They are planted out upon gradually rising bosses, and are thus brought into a more effective prominence. The additions and improvements are by no means confined to the grounds, however, for we now find ourselves confronted by a handsome glass structure, recently erected by Messrs. Allen & Co. of Holmeschapel, and which makes a most beautiful conservatory. Though so recently built it is already well stocked with remarkably fine specimens of Chrysanthemums, Salvias, and other late-flowering plants. The fernery and grotto really deserve more time than we can afford to give to their inspection now, but we notice the rockwork in the latter is covered with fine specimens of *Adiantum farleyense*, *A. cuneatum*, &c., with here and there, in graceful repose, the drooping fronds of *Pteris argyrea*, the bright silver in striking contrast and pleasing relief to the other Ferns in the subdued light. In the stove there are some fine specimens of *Anthuriums*, and some well coloured *Dracenas* and *Crotons*, the back wall being covered with the variegated leaves of *Begonia Rex*.

Then there is a Camellia house filled with fine and well-trained specimens, all of which are crowded with buds, and give promise of an abundant supply of bloom during the winter, whilst the stages arranged round the house are full of healthy plants of *Cinerarias* of a splendid strain, all in the "pink of perfection" as to health and cleanliness. *Pelargoniums*, in bloom, and *Primulas* have a house also to themselves, and just now they are in all the gorgeous splendour of full flower.

We must leave much unseen as we hurry on to the vineries and find here, as elsewhere, every foot of space utilised, for upon every available shelf and ledge we find Strawberries for forcing vigorous and healthy. Mr. Gough is specially proud of his vineries, and justly so. We could scarcely credit the fact that the foundations were not dug until the later months of 1885, and now there are Vines bearing splendid bunches of fruit fit for the show table. These Vines are planted in the centre of the house to provide temporary supplies, whilst in front are those intended to remain permanently. Canes planted this spring—Black Hamburgs, Alicantes, and Lady Downe's—are carrying seven or eight bunches of fruit of 2 or 3 lbs. each, colouring beautifully, and bearing evidence of the care and skill bestowed upon them. On each side of the vinery are the Peach houses, built at the same time, and the young trees so recently put into position have made splendid wood, and are full of fruit buds. We must see the kitchen garden if only for the sake of some specially commendable Celery, Endive, and other such necessities of the culinary corner, which Mr. Gough so wisely guards carefully, knowing its value where the house demands are so large and constant. The walls



Fig. 74.—*Silene pendula compacta flore-pleno*.

likely to happen when forced in the way advocated by your correspondent, as it is a most difficult matter to see all the crowns at covering time. The plan recommended by me obviates all this, as the crowns are visible, and by severing the roots they can be made to fit the pot or box, and if crammed well together half as much more produce will be got from each pot than when the roots are not lifted. Lukewarm is the temperature required in forcing Rhubarb, and to be of service it must be underneath the roots, and not above them.—W. P. R.

SILENE PENDULA COMPACTA FLORE-PLENO.

VISITORS to the St. Osyth seed farm of Messrs. James Carter last year were impressed with the extraordinary display of the flowers seen there, and amongst them this new double pink Silene. Each plant formed a perfect cushion of bright pink blooms, deeper in colour than the well known single variety, and the long lines represented ridges of flowers that were "quite a sight." A plant of the aspirant to popular favour is figured in the new edition of the "Vade Mecum" of the firm in question, a very handsome issue, excelling in character those of its long line of predecessors. Messrs. Carter have obliged us with the illustration of this distinct annual, that will be equally adapted for pots in the greenhouse lines to borders, or massing in flower beds where a cushion-like surface of glowing pink is required. It is quite hardy, and on that account if raised in the autumn will be valuable for spring gardening. Sown in the open ground in early spring it flowers in the summer.

JODRELL HALL, CHESHIRE.

THAT Jodrell Hall is one of the landmarks of the east of Cheshire is sufficiently indicated by its name. The old hall irresistibly suggests the old family traditions with which that name in the past has been so closely associated. We now find the place so enriched and beautified by skill

of the kitchen garden are covered with fruit trees, and the whole place is the essence of order, compactness, and completeness.

November days are short, or we should have spent more time in looking more carefully at the many striking things everywhere to be seen, but we console ourselves with the cordial invitation of our genial guide to go over again when the days are longer, and when the sunshine has caused the outer world to cast aside its more sober garb of greys and greens, and to put on its richer covering.—J. S. D.

NATIONAL ROSE SOCIETY.

DECEMBER 9TH.

THE annual general meeting of the above Society was held on Thursday, December 9th, in the Covent Garden Hotel, Henrietta Street, W.C., the Hon. and Rev. J. T. Boscawen presiding. There was a good attendance of members, for in addition to the Hon. Secs., the Rev. H. H. D'Ombraim and E. Mawley, Esq., and the Hon. Treasurer, T. B. Haywood, Esq., the following were present—The Revs. J. H. Pemberton, T. N. Flintoff, A. Foster-Melliar, F. Page Roberts and Alan Cheales, with Messrs. G. W. Piper, T. B. Hall, E. B. Lindsell, R. E. West, J. D. Pawle, T. W. Girdlestone, F. Cant, G. Bunyard, G. Prince, C. E. Cuthell, J. T. Strange, J. Bateman, A. G. Slaughter, B. R. Cant, E. Wilkins, F. R. Burnside, H. Appleby, R. Bloxam, G. Paul, A. Turner, J. Burrell, W. Rumsey, and Capt. Christy.

The Vice-President took the chair shortly after 3 P.M., and the business was commenced by Mr. Mawley reading the circular calling the meeting. The minutes of the last annual meeting were then taken as read in the usual way, Messrs. T. W. Girdlestone and G. Paul being appointed scrutineers of the ballot for officers and Committee for 1887. Printed lists were supplied to the members, and in reference to them Mr. B. R. Cant remarked he thought it would be desirable that members should have the privilege of proposing persons for election at the annual meeting even though their names were not on the list. It was explained that any of the names could be struck out if desired and others substituted, but it was preferable that the persons should be nominated at the previous Committee meeting, and a rule to this effect was considered advisable to facilitate business.

The Rev. H. H. D'Ombraim then read the annual report which follows, and T. B. Haywood, Esq., read the financial statement appended:—

REPORT OF THE COMMITTEE FOR THE YEAR 1886.

IN presenting this Report, the Committee wish to remind their Members that the Society has now completed its first decade; and in looking back upon the hopes expressed at its foundation, they cannot but feel that those anticipations have been, in many respects, more than fully realised. The Society has from the very first enjoyed the confidence of the Rose-growing community generally, and has already effected a considerable improvement in the management of local Rose Societies, and their methods of exhibition, besides bringing about the almost entire discontinuance of two-days Rose Shows. Indeed, its influence in these respects has even extended to other Special Societies in this country, as well as to some of those recently started on the Continent and in our Colonies. It has also, besides leading to the wider cultivation and exhibition of Show Roses, helped much to encourage the growth of those Garden varieties which find such favour with many horticulturists at the present time.

The past year has in no way come short of its predecessors in the success which has attended the Society's operations. Its two Exhibitions, the Metropolitan Show at South Kensington, and the Provincial Show at Birmingham, have, as usual, brought together very fine collections of Roses, as well as a large number of visitors more or less interested in the culture of our National flower. The Exhibition at Birmingham was particularly interesting, as it was new ground for the Society, and the fixture being well timed in the season, there was an unusually large display of fine flowers. That at South Kensington was one of the most extensive the Society has yet held, but owing to the hot dry weather which prevailed on the Exhibition day and for some time previous to it, the individual blooms were not, as a rule, so large as are usually seen there.

The medals struck from the Society's new dies have been much appreciated, and are on all hands admitted to be greatly superior in design and execution to those previously issued.

FINANCIAL STATEMENT.—With regard to Finance, the Committee are unable to report so large a balance as last year. This, however, will be found to be almost entirely due to the large expenditure on the dies for the New Medals, and to the additional prizes awarded this year at both the Metropolitan and Provincial Exhibitions. The total receipts have amounted to £590 14s. 7d., and the expenditure to £583 15s. 7d., leaving a balance for the financial year of £6 19s.

ARRANGEMENTS FOR 1887.—In making arrangements for 1887, the Committee still hope to hold their Metropolitan Exhibition as usual at South Kensington, where the Superintendent of the Royal Horticultural Society's gardens, Mr. Barron, hopes so to arrange the staging in the Conservatory that the flowers may be displayed to better advantage, and at the same time be more convenient for both exhibitors and visitors. In order to carry out the original intention of the Society as a National one, the Committee have entered into arrangements with the Royal Caledonian Horticultural Society for the Provincial Show to be held in Edinburgh on the 13th of July. The Lord Provost of Edinburgh has kindly consented to take an interest in this Exhibition, and every endeavour will be made to render this, the first Show the Society has held out of England, in all respects a successful one.

MEMBERS' PRIVILEGES.—The privileges of members are the same as in former years; subscribers of £1 being entitled to two private view tickets and also to four transferable tickets, admitting at the same time as the general public. Members subscribing 10s. are entitled to one private view ticket, and also to two transferable tickets. Each one of these tickets will be available at either of the Society's Exhibitions. Members who are sub-

scribing for the first time in 1887 will receive a copy of the Society's Illustrated Catalogue of Exhibition and Garden Roses.

It is again the pleasing duty of the Committee to express their best thanks to those kind friends who have undertaken in different parts of the country to act as the Society's Local Secretaries; for it is unquestionably in a great measure through their exertions that the number of members has been so well maintained.

It may be interesting to give here the amount received in subscriptions during the past nine years, as this will show the gradual but substantial progress the Society has made during this period:—

	1878	1879	1880	1881	1882	1883	1884	1885	1886
	£	£	£	£	£	£	£	£	£
Subscriptions received	213	217	239	247	273	274	280	298	292

BALANCE SHEET—YEAR ENDING 30TH NOVEMBER, 1886.

1885.	RECEIPTS.	£	s.	d.	£	s.	d.
Dec. 1.	Balance at Bankers	..	..	..	40	19	1
	Subscriptions (including 21s. for 1887)	..	..	..	291	17	6
	Donations	..	..	..	5	0	0
	Affiliation Fees and for Medals from Affiliated Societies	..	..	..	66	0	0
	From Royal Horticultural Society	..	..	..	80	0	0
	" Birmingham Horticultural Society	..	..	..	100	0	0
	For Prizes for 1887—						
	Rev. J. H. Pemberton (Special Prize)	..	..	..	£3	0	0
	Adml. Strange (Two Prizes of 10s. each)	..	..	..	£1	0	0
	Catalogues Sold	..	..	..	3	0	0
					3	18	0
					£590	14	7

EXPENDITURE.										£	s.	d.
Prizes, South Kensington Show	..	..	..	..	..	..	..	..	254	0	0
„ Birmingham Show	..	..	..	..	..	..	..	..	152	0	0
Medals	..	..	..	..	..	..	..	..	7	14	2
„ for Provincial Societies	..	..	..	..	..	..	..	..	52	17	0
New Medal Dies	..	..	..	..	..	..	..	..	20	0	0
Printing, Stationery, and Advertising	..	..	..	..	..	..	..	..	28	7	6
Postage, Telegrams, Messengers, and Sundry Expenses	..	..	..	..	..	..	..	..	28	8	11
Secretary's Travelling Expenses to arrange Shows	..	..	..	..	..	..	..	..	6	17	6
Expenses, South Kensington Show	..	..	..	..	..	..	..	..	7	18	6
„ Birmingham Show	..	..	..	..	..	..	..	..	6	19	0
Cleaning and engraving Challenge Trophies	..	..	..	..	..	..	..	..	3	15	0
Assistant-Secretary and Accountant	..	..	..	..	..	..	..	..	20	0	0
Nov. 30. Balance at Bankers	..	..	..	..	..	..	..	..	6	19	0
										£590	14	7

T. B. HAYWOOD, Treasurer.

Audited, and found correct, 1886, Dec. 4,

F. T. WOLLASTON, } Auditors.
J. D. PAWLE, }

The report and financial statement were submitted to the meeting by the chairman, who proposed that they be adopted, remarking that the Society's progress was very satisfactory and the decrease in the subscriptions for the present year was much smaller than might have been expected at such a period as this. The Rev. Alan Cheales seconded the motion in a few appropriate terms, observing that their 400 members and twenty-five affiliated societies afforded conclusive evidence of the Society's firm position in the floricultural world. The proposal was carried unanimously.

It was stated in reference to the metropolitan show that it was hoped it could be held in the conservatory at South Kensington; but as there was some uncertainty about the matter, inquiries had been made at the new National Agricultural Hall, Olympia, near Addison Road Station, Kensington, as to the possibility of some arrangements being effected with that company. Probably, in the event of the conservatory not being available for the purpose, the Society might transfer their exhibition to the former place, which is very conveniently situated. The Provincial Show, to be held at Edinburgh next year, is expected to be very successful, as the Royal Caledonian Society has devoted a substantial sum to its support, and the Lord Provost had promised his influence. In regard to the Provincial Show of 1888, the Hon. Sec. stated an application had been received from Darlington, and as the previous exhibition held there had been so successful it was considered advisable to repeat the experiment.

A subject was introduced that caused some discussion amongst the members—namely, as to whether it was desirable the Challenge trophies should be offered alternately at the provincial and metropolitan shows, so as to give both northern and southern growers an opportunity of gaining these honours. The Rev. H. H. D'Ombraim, the Rev. J. H. Pemberton, Mr. T. B. Hall, Mr. B. R. Cant, and Mr. G. Paul took part in the discussion, and the general opinion was that this alternate system should be adopted, making the show at which the "trophies" were offered the principal exhibition of the year, but the whole matter was referred to the Committee for a final decision. Mr. B. R. Cant, in reference to stocks for Roses, read an extract from a letter speaking very favourably of Roses on the Manetti stock, and he wished that a few of the leading amateurs would undertake a trial of the seedling Briar, Briar cutting, and Manetti as stocks side by side, and state the results.

The following list of Committee and officers for the year 1887 was then returned by the scrutineers. President, the Rev. Canon Hole; Vice-Presidents, the Hon. and Rev. J. T. Boscawen, Rev. J. M. Fuller, Robert Hogg, LL.D., James McIntosh, The Lord Provost of Edinburgh; Hon. Treasurer, Thomas Burt Haywood; Hon. Secretaries, Rev. H. Honeywood D'Ombraim, Edward Mawley; General Committee: H. Appleby, Rev. H. A. Berners, Rev. H. B. Biron, R. Bloxam, G. Bunyard, J. Burrell, Rev. J. B. M. Camm, B. R. Cant, F. Cant, Rev. A. Cheales, Captain Christy, E. Claxton, J. Cranston, Rev. A. Foster-Melliar, Rev. F. Gall, T. W. Girdlestone, W. J. Grant, T. B. Hall, G. P. Hawtrey, J. Shirley

Hibberd, C. F. Hore, W. J. Jefferies, E. B. Lindsell, M. T. Masters, F.R.S., Rev. F. Page-Roberts, G. Paul, F. C. Pawle, J. D. Pawle, Rev. J. H. Pemberton, G. W. Piper, G. Prince, W. Rumsey, J. Sargent, A. Slaughter, A. Turner, R. E. West, E. R. Whitwell, E. Wilkins, Rev. W. Wilkes, W. H. Williams; Hon. Auditors, J. D. Pawle and F. T. Wollaston.

It was proposed by the Rev. J. H. Pemberton, and seconded by Mr. A. Slaughter, that the best thanks of the Society be communicated to the Committee of the Horticultural Club for the use of their rooms during the past year. A similar vote of thanks to the officers and Committee was proposed by Mr. R. E. West and seconded by Mr. J. Burrell, and the meeting concluded with a vote of thanks to the Chairman, proposed by Mr. T. B. Hall, seconded by Mr. E. B. Lindsell, and carried unanimously.

The annual dinner was held at 6 P.M. the same evening, the Hon. and Rev. J. T. Boscawen in the chair. There was a large attendance of members, and a very enjoyable evening was spent. Several toasts were proposed, among others that of the "National Rose Society," which was proposed by the Chairman and responded to by Mr. E. Mawley; that of "The Executive Committee," proposed by the Rev. H. H. D'Ombrian and responded to by Mr. T. W. Girdlestone; and that of "The Press," proposed by the Chairman and responded to by Dr. Masters. An interesting discussion afterwards took place on the Chairman suggesting that the Society should in some way celebrate the Queen's Jubilee—a prize essay, a Jubilee medal, illustrations of the fifty most beautiful Roses, a challenge trophy for the provincial exhibitions, and other suggestions being made as appropriate to the occasion. It was ultimately decided to leave the matter in the hands of the Committee to determine on the form the celebration should take.



THE Royal Horticultural Society has issued the report of the PRIMULA CONFERENCE AND ORCHID NOMENCLATURE CONFERENCE as part 2 of vol. vii. of the Society's Journal. These reports contain a considerable amount of useful and interesting information, especially in regard to the Primula Exhibition and Conference, the various papers read being given in full, together with Mr. Dewar's list of Primulas and synonyms.

— THE usual monthly dinner of the HORTICULTURAL CLUB was held on Tuesday last at their rooms, 1, Henrietta Street, Covent Garden. There were present the Hon. and Rev. J. T. Boscawen, Messrs. T. F. Rivers, W. H. Pearson, A. H. Pearson, Jefferies, G. Bunyard, Rev. W. Wilks, &c. The subject for discussion was opened by Mr. T. F. Rivers on Pears and their culture, and a very interesting discussion followed, in which many important facts were elicited.

— THE WEATHER recently has been extremely variable, the remarkably low depression of the barometer last week being attended by severe storms, which have done considerable damage to trees in many parts of the country. Mr. J. H. Steward, of 406, Strand, writes:—"During the depression of the barometer on the 8th and 9th inst., a minimum pressure was reached—that is, lower than we have previously recorded—viz., 28.32 inches. This was at six o'clock on Thursday morning. The nearest to this is just ten years ago, when the barometer registered on the 4th December, 1876, 28.42 inches, or one-tenth of an inch higher." In some parts of the north of England it is said the barometer fell to 27.4.

— MR. JAMES CYPHER, Queen's Road, Cheltenham, sends a box of ORCHID FLOWERS, representing some of those now rendering his houses attractive. They are all examples of the best culture, one of the most noticeable being *Dendrobium bigibbum*, with large flowers, seven in a spike and very highly coloured; *Dendrobium Goldieanum* is very richly coloured, of a fine rosy crim. on shade; the white and useful *Dendrobium Dearei* is also represented by some fine flowers. Of *Cypripediums* there is a large-flowered variety of *C. Spicerianum*, and one with twin flowers. *C. insigne* Chantini and *C. insigne punctatum violaceum* are both beautiful varieties, a very dark and large-flowered variety of *C. Seideni*, and a brightly coloured *C. biflorum*. *Oncoglossum Rossi* in several good varieties, *Calanthe Veitchii*, *vestita rubra*, and *Sandhurstiana* are also included, all fresh and excellent. In this nursery *Masdevallia tovarensis* and a dark variety of *Laelia anceps* will shortly make a beautiful display, large numbers being grown of each.

— THE SHEFFIELD AND WEST RIDING CHRYSANTHEMUM SOCIETY held a very successful quarterly meeting of the members on Wednesday evening last, when Mr. W. K. Woodcock read a short paper on "The Propagation of the Chrysanthemum," and a very interesting discussion followed. A statement was made by the Secretary relative to the late Show in the Corn Exchange, by which it appears the accounts are all paid as due, and that the Society is in a satisfactory position, and looking forward to increased prosperity in the coming year.

— WE learn that MR. JOSEPH SOUZA, lately gardener to Sir A. Seton-Stewart of Touch by Stirling, has assumed the charge of the gardens of Mr. Haseltene, Walhampton Park, Lymington, Hants. Mr. Souza is widely known beyond the district he has left as one of the foremost in his profession. Nowhere could more skilful garden-work in all departments be seen than at Touch. His services were in constant demand as a Judge at the Exhibitions of the Royal Caledonian Horticultural Society and other shows. Mr. Souza carries with him the best wishes of his many friends.

— MR. JOSEPH MALLENDER sends the appended SUMMARY OF METEOROLOGICAL OBSERVATIONS AT HODSOCK PRIORY, WORKSOP, NOTTS., for November, 1886:—Mean temperature of month, 40.7°. Maximum on the 1st, 57.1°; minimum on the 26th, 28.1°. Maximum in sun on the 1st, 100.9°; minimum on the grass on the 19th, 21.9°. Mean temperature of the air at 9 A.M., 41.7°; mean temperature of the soil 1 foot deep, 45.5°. Number of nights below 32°—in shade 6, on grass 16. Total duration of sunshine in month forty-nine hours, or 19 per cent. of possible duration. The brightest day was the 24th, 6.6 hours. We had fourteen sunless days. Total rainfall 1.15 inch. Maximum fall in twenty-four hours on the 5th, 0.38 inch. Rain fell on fourteen days. Wind mostly in a westerly direction. Average velocity of wind 9.1 miles per hour. Velocity exceeded 400 miles on one day, and fell short of 100 miles on six days. Approximate averages for November;—Mean temperature, 41.7°. Rainfall, 2.04 inches. Sunshine (five years) fifty-four hours. A mild and dry month, but not so warm as in 1881, nor quite so dry as 1884. Sunshine rather below the average, but more than the last two years."

— A CORRESPONDENT writes—"If we except Mr. J. Cypher of Cheltenham there are no more uniformly successful exhibitors of plants in the West of England than Mr. G. LOCK, gardener to B. W. Cleave, Esq., Newcombe House, Crediton, Devon, and no gardener is more respected by all who have been much in his society. As a proof of the esteem in which he is held by all classes, notably at Crediton, a movement has originated among his admirers for the purpose of presenting him with a well-earned testimonial. I have frequently admired the excellence of the specimen plants exhibited by Mr. Lock, but only recently had an opportunity of seeing them at home, where they and all other departments are equally creditable to his skill as a gardener."

— CALANTHES.—"I am aware," writes "W. K. W.," "that the note from your Sheffield correspondent on this subject is quite correct, in that these plants are not this year as satisfactory as usual in more than one Sheffield garden, but I am also pleased to know that such is not the case in all. With us they are much finer this year than we have before had them, and are now carrying very fine spikes of flowers, having also made large and fine pseudo-bulbs. I attribute the improvement to having, for the first time this season, grown the plants through the summer and autumn on a shelf almost close to the glass, where they obtained a maximum of light (without direct sun) with a high temperature and free ventilation; also throughout the growing season a liberal supply of water was given to them daily in the evening overhead from the hose pipe. I feel certain, from my own knowledge of the facts, that more than one case of comparative failure with them this season in Sheffield is owing to the plants having been kept too far from the glass, not receiving sufficient light and free ventilation, and to the fact that dark and foggy days have been unusually prevalent this autumn in the district."

— MR. WM. STRATON, Annfield, Broughty Ferry, writes as follows in reference to AURICULA SHOWS IN SCOTLAND:—"I see the meeting for the purpose of fixing the dates of the southern shows has been held. As this seems to be the usual time for such fixtures being made, I would like, with your consent, to bring a suggestion before your Scottish readers. There is a considerable number of Auricula growers north of the Tweed, and I think if the matter is promptly taken up a very creditable show might be obtained. I would suggest Edinburgh as the best centre, and Wednesday and Thursday, 11th and 12th May, as

the best date for holding it. I give that date from my notes of several years, as being nearest to the full bloom. I will undertake to send from thirty to fifty plants, not necessarily for competition."

— THE Show of the HULL AND EAST RIDING CHRYSANTHEMUM SOCIETY FOR 1887 will be held on Thursday and Friday, 17th and 18th November.

— "D., *Deal*," writes as follows respecting MR. CHARLES P. WHEATSTONE:—"Although the subject of the present brief notice never took any prominent part in horticulture, yet as a good gardener and a genial companion he will be missed by very many, especially by the members of the Horticultural Club, at whose meetings he was a constant attendant. The son of Sir Charles Wheatstone, who has done so much to revolutionise the world by the discovery of the electric telegraph, he inherited many of his qualities, but while he loved his garden the passion of his life was 'the gentle craft'; indeed it is, I think, not to be doubted that his intense interest in it and the exposure he underwent shortened his days. Apparently a strong man, he was taken at the early age of thirty-eight, and there are many of us who have been accustomed to meet him who will deplore his loss. I obtained some fishing for him more than once on the Duke of Edinburgh's lake at Eastwell, and the manner in which he went to work showed that he was a thorough devotee. Many, I am confident, will sympathise with his wife and daughters on their bereavement."

— GARDENING APPOINTMENT.—Mr. John Copson (late gardener to Colonel Stratton Bates, Down Ampney House, Cricklade), has been appointed gardener to T. Tempest-Radford, Esq., Bevere Manor Gardens, Worcester.

— THE spring Show of the BOTANICAL AND HORTICULTURAL SOCIETY OF DURHAM, NORTHUMBERLAND, AND NEWCASTLE-UPON-TYNE, will be held in the Town Hall, Newcastle, on the 20th and 21st April next. No summer Show is intended to be held, but a large autumn Show in the grounds of the Royal Jubilee Exhibition, to be held in Newcastle next year, the dates of this Show being 30th and 31st August and 1st September; this is in conjunction with and will form part of the attractions of the Exhibition.

— "JUVENIS" writes—"One of the sweetest little flowers at this season of the year, and which is deserving of more general cultivation, is the ROMAN HYACINTH. The cultivation is simple, and the clusters of beautiful white flowers with their delicate perfume amply repay all the expense and trouble incurred. The bulbs should be sown in August and brought on in succession. The soil should be light and rich, placing five bulbs in a 6-inch pot. After being potted they must have a good watering, and be covered with a thick layer of sand or ashes in any cool place, a corner of a shed suiting them admirably. In this they can be left for about six weeks, at the end of which time the pots will be found to be full of roots and the shoots starting strongly. Having been kept shaded for a few days to allow the young shoots to get their natural colour, they must then, if desired as soon as possible, be removed to a house with a temperature ranging from 50° to 60°. With this treatment, at the end of six weeks from the time when they were removed from the sand they will be in bloom. If, however, they are not desired so soon, and this treatment is not convenient, they can be grown quite as well without artificial heat, a cold frame alone being necessary if the frost be excluded. With this treatment they will be a few weeks later, but sturdier accordingly."

— "ROSA" wishes to know "why EUCOMIS PUNCTATA is a sacred flower among the Egyptians. Egyptian sailors who were kindly treated at Alderney, where they were wrecked, gave some of the bulbs to the farmer who housed them, whence her's came?"

— THE *Journal des Roses* for December gives a coloured illustration of the new TEA ROSE MADAME CHAUVRY, which is described by M. Pierre Cochet as a seedling obtained by M. J. Bonnaire of Montplaisir-Lyon. It is said to have resulted from a cross between Madame Berard fertilised with William Allen Richardson, the seeds having been sown in 1883, and the first flowers were produced in 1884. The plant is strong and free-flowering, with large flowers of a nankin-yellow colour, tinged with coppery yellow as they expand, and they are usually about 4½ inches in diameter. The buds are very beautifully formed, and will be useful for bouquets. The description does not state whether the

variety is fragrant or not, but it is interesting, and judging from the plate should be a useful Rose.

— THE EDINBURGH CHRYSANTHEMUM SHOW was held on the 7th and 8th inst., when there was a moderate exhibition of blooms. The Lord Provost opened the Show about half-past twelve o'clock, in the presence of a considerable number of ladies and gentlemen. Mr. Alexander Milne, President of the Society, presided. After referring to the objects of the Society, the Lord Provost remarked that the present popularity of the Chrysanthemum had induced the Council of the Scottish Horticultural Association to hold this Exhibition for the purpose of still further her improving the culture of this favourite flower. Touching on the history of the Chrysanthemum—"the Golden Flower of the Greek," he remarked that it was originally introduced from China in 1754, but was lost by some accident, and was re-introduced by way of Marseilles in 1789, reaching London in 1795. It was not till the beginning of the present century that it attracted attention as a florist's flower. The artists and poets of China and Japan had lavished much of their finest and best thought and labour in representing this flower. In Japan there was an Imperial Order of the Chrysanthemum, which, it had been announced, was to be conferred on the Prince of Wales by a special envoy from the Emperor of Japan. In China a liquor was distilled from the flower, which was regarded as an *elixir vite*, and a powder made from it was prescribed as a cure for drunkenness. He wished they had some of it in this country. The principal prizes were secured by Mr. J. M'Hattie, Newbattle Abbey; Mr. J. Cowan, Dunedin House; Mr. J. Carruthers, Hillwood; and Mr. R. Muirhead, Whitehouse Terrace.

WATERTIGHT' ASHPITS—HOT v. COLD WATER.

MR. BARDNEY has been kind enough to look up my notes on stoking, November 27th, 1884, and takes no exception to anything therein; but, perhaps, I had better remind him that the question of draught is also hinted at. When that hint was thrown out vapour was not admitted accidentally, and I quite expected the subject to be taken up and enlarged upon much in the way it has been on this occasion.

What I write is with a desire for progress, and if able correspondents refute my theories clearly I shall be only too pleased to drop mine and adopt theirs. It is true Mr. Bardney never said he adopted either the cold or hot water system, and his omission had not escaped my notice. In my first notes, October 14th, page 338, I wrote, "I hope, however, others who may have the system in operation will very kindly favour us with their opinions." On page 339 I wrote, "Mr. Bardney having doubtless tried his plan may be able to remove a little of my unbelief." It will thus be plain to all that I only invited opinions from those who had the system in operation. I felt some doubts about Mr. Bardney on this point. Thanking him for the admission, I have faith that his opinions will change directly he gives both systems a trial, because I contend that if our bars remain sound over hot-water while Mr. Bardney's expand and twist without water, I am still on the right side. If Mr. Bardney has consulted the history of inventions he must have noticed that more advancement in science has been made through practice than by gleanings from volumes of theory.

The opinions of your able correspondent, Mr. Riddell, that a certain degree of oxidation will go towards freeing the clinker from the bars has apparently assisted Mr. Bardney with a dash of finality against my theory, notwithstanding that Mr. Riddell goes far beyond my limits of vapour by suggesting the probable advantage of having a jet playing under the bars. We might have reasonably expected Mr. Bardney to seek some other authority for a confirmation in favour of an anti-vapour theory. I observe that Mr. Riddell has not said he has water in his ashpits.

I had noted this particular point in Mr. Riddell's article, but we may fairly consider that few would accept the benefits of combustion at the expense of destruction of the bars. It is contrary to the natural theory of metal oxidation, which does not take place with hot metal. If anyone will take two pieces of bright iron, or unpolished iron or steel, make one hot, let the other remain cold, dip both in water, returning the heated piece immediately to the full influence of the fire, and at the same time place the cold piece in a cool corner again, it will be proved that no oxidation will take place upon the heated piece, but upon cold piece. May I ask, Did ever anybody see a rusted new horseshoe allowing, say, a few hours or days for use? and yet they are placed in water and removed often before cool. Those initiated in metallurgy will know that wrought and cast iron is most perishable when exposed to the action of the air in cold state. The primary cause of rust is inactivity. Mr. Riddell, I think, will agree that a boiler and bars set, but not in use, would not remain sound longer than one in regular use. Those with fire occasionally suffer by far the most, owing to the violent changes that take place. Our bars have been in use nearly four years and are equally as square, smooth, and sound as two spare bars laid over the boiler at that time; further than this, we are strongly of opinion that the clinker does not actually lie quite closely upon the bars, a kind of soft white ash appearing to separate them, which acts probably as a non-conductor of heat.

I will endeavour to point out as briefly as possible the beneficial action of the vapour as aiding combustion. It is well known the dross in its intensely heated state seeks to escape between the bars. In the case of vapour acting upon this the change is very conspicuous; instead of its remaining in one mass from above, the action causes a continual gathering into small particles in various forms, principally, to my mind, through the agency of the soft ash before mentioned is partially dissolved in the vapour and immediately becomes detached, falling into the water, the consequence of this being that the mass of clinker as it forms becomes perforated, thus admitting the oxygen, and combustion is continuous by day and night, the comparative small amount of attention adding considerably to economy.

As to cold *versus* hot air in combustion, so far back as 1829, 3 tons of coke was found to do as much work by the cold-air blast as 6 tons 13 cwt. of coal. While, again, by hot blast at 450° Fahr. 1 ton 18 cwt. of coke was found equal to 4 tons 6 cwt. of coal. It will thus be seen that by hot air combustion was increased. Combustion is or should be the primary aim in all firing. Mr. Taylor, I think it was, remarked that less draught in the chimney was needed with the assistance of vapour. This is our experience.—E. BURTON.

GROS COLMAN GRAPES AT CHISWICK.

A FEW weeks since I began to think my Gros Colman Grapes were not going to colour so well as usual, and in response to my inquiry you, Mr. Editor, referred me to the Gros Colman growing at Chiswick, and the report you sent I found on my visit to be accurate. A crop of Gros Colman is always worth looking at. Mr. Barron received me courteously, and it afforded me some satisfaction to find we so much agreed, not only in the treatment of this grand all-round Grape, but also on the merits of several other varieties. I did not expect to find the Gros Colman growing and doing so well in such "a case" as I call the house; farther north I am sure it would not do, even at Chiswick I can see, good as the crop has been, a more modern structure would make them more at home. All Grapes are cut from the upright portion of the Vine, about 5 feet in height, nearest the glass, as they do not keep so well as the bunches suspended overhead. Looking from either end, with the half crop cut, was a very interesting sight. I have never seen more uniform bunches for size, no shoulders—just such bunches as would keep and be valuable in spring. Their berries were good without being extraordinary, and colour very good for Gros Colman. I do not suppose I shall ever see a house of established bearing Vines all as black, say, for instance, Alicante. Those at Chiswick I should call a good colour for the variety, yet there was a certain portion with the tinge of redness so common. I noticed this more particularly at the warmer end of the house, but it was the heaviest cropped. This speaks for itself—light cropping for colour.

I must not omit to remark the healthy appearance of the Vines, also the clean appearance of the Grapes. I should expect these Vines will do even better another year, as now the old Alicantes are being cut out, so that Gros Colman will have it to themselves. Seeing this house with the sun shining sideways gave a very imposing appearance to the Grapes. I did not fail to note that in every case where the best finished bunches were hanging they were the smallest. The smallness of the foliage rather surprised me. The laterals were moderately strong, stronger in proportion than the leaves, yet, as I have said before, the Vines were pictures of health, and the Grapes good. I find Mr. Barron, even at this season of the year, a strong believer in fire heat. No Grapes will stand more now to advantage than this variety. This, again, is another reason why it should not be planted in a mixed house, where it is never satisfactory. I have lately seen some growing. The Vines appear all right, but the less said about the Grapes the better.—STEPHEN CASTLE, *West Lynn*.

THE PAST SEASON'S GARDENING AND SEED LIST.

I WAS pleased to see Mr. Chisholm's note on the above subject. It is one I like to see brought forward at this time of the year, as it gives an opportunity of comparing our own selections with others, more especially when the nature of the soil and the county is given, as I find that some of the most prolific on some soils are not so good as others on a different soil and situation, and generally causes us to alter our seed list and selection when we change into another locality. Our soil here in the Midlands is rather light, but a good depth. As I have to keep the price of the seed bill down as much as possible, I dare not speculate much in novelties, but I generally contrive to have a few each year.

My best sorts this year are—Broad Beans.—Early Longpod and Broad Windsor. Dwarf French Beans.—Sion House, a very good early one. Ne Plus Ultra I have tried this year. It is a good Bean, but I have not sufficiently tested it with others, so I shall grow it again. Negro is a good standard variety, bearing a quantity of long straight pods. Canadian Wonder is a prolific cropper, which comes in when others are getting over. Runner Beans.—Girtford Giant has given a few pods a little longer than Champion Scarlet, but at present I do not see that it is superior to that useful variety. Mont d'Or is very delicate in flavour, and I might also say in health, for it requires a warm situation; but it is worth it where its colour is not objected to.

Beetroot.—Egyptian is an indispensable for an early supply. Nutting's Dwarf Red is a good standard sort, and was quite equal to Pragnell's Exhibition last year with me. Broccoli.—Sutton's Michaelmas White is quite an acquisition to the autumn Broccoli. Veitch's Self-Protecting is a grand variety for autumn and early winter, to be followed by Snow's Winter White, Sutton's Perfection, Leamington, Cattell's

Eclipse, and Sutton's Late Queen. Brussels Sprouts.—Aigburth. Kale.—Scotch for winter and Buda for late spring use. Cabbage.—Myatt's Offenham and Ellam's Early Dwarf. The first is by far the best, but I think Ellam's comes in a little quicker. Savoy.—Although I have given up growing Chou de Burghley my first trial of Gilbert's Universal Savoy is very satisfactory, and I am under the impression it is the very best Savoy.

Carrots.—We have generally had some splendid autumn tints on our Carrots, which we have found very useful for decoration; but this year not one leaf has been coloured. Why is this? I believe it is because no insect pests have injured them. When we lifted them they were by far the best we have ever grown. Until last year we had a great difficulty in getting even a fair crop of Carrots owing to the grub making such havoc among them; but last year, and this too, I selected the poorest ground in the garden, which had been trenched the autumn previous with an ordinary dressing of manure. After being forked over twice in the spring the garden roller was run over twice and the Carrot seed sown the last week in March very thinly, so that no thinning should be required, and although there were a few places rather thick they were allowed to grow undisturbed, as I think thinning makes holes for the insects to get into the roots much more easily than they otherwise would do. After sowing they were raked in and rolled again, the result being a fine bed of Carrots that has been admired by all who saw them. Carrots have often been grown on the same ground, but never had good crops until the last two years. I grow Short Horn for early and Long Surrey for main crop.

Cauliflower.—I have grown several varieties, but find Early London as good as any and much cheaper, although Sutton's King of the Cauliflowers is very good. Veitch's Autumn Giant has been exceptionally good this autumn. It is a grand autumn variety, and should be grown in every garden.

Celery.—I have tried White Plume for two seasons, both with earthing and without, but I shall not grow it again. It is inferior to other varieties when earthed up, and good for nothing when not earthed. Sutton's White Gem and Major Clarke's Red are my present favourites. Celery has grown very well with me this year, and have been almost free from Celery fly. What is the best prevention and cure for this pest? Cucumber.—All sorts have been discarded for Telegraph. Can anyone recommend a better one for frame culture? Endive.—Improved Round-leaved Batavian is the best with me. Lettuce.—Tom Thumb, Paris White Cos, Black-seeded Bath Cos for winter. I am trying Sutton's Winter White this winter. Melons.—Green-flesh, High-Cross Hybrid and Eastnor Castle; scarlet-flesh, Hero of Lockinge and Blenheim Orange are all good.

Onions.—The Queen is a very quick grower, and when sown with other varieties in autumn will come in before them, and is very useful for connecting the spring Onions with the ordinary autumn sorts, and is indispensable for that purpose. Bedfordshire Champion, Brown Globe, and Improved Reading are good. I have tried Rousham Park Hero and Giant Zittau. The last I like the better of the two. Our autumn-sown Onions were all killed during last winter. Leek.—The Musselburgh.

Peas.—These have done unusually well with us this year, and this I attribute to preparing the trenches during the winter. We never had a break from the time they came in until the end of October, and we gathered the last dish from that good old variety Scimitar Nov. 10th, which had kept pretty free from mildew. I have not grown it for several years, but this year it has proved superior to many of the newer varieties. We sow American Wonder in a large span-roofed frame, and find it a very prolific and good flavoured variety; for that purpose much better than when grown in the open. I have discarded several other earlies for William I. I have tried so many sorts it would only take up valuable space to give a list of them. Walker's Perpetual Bearer bears a heavy crop of good flavoured Peas, but with me it is in no way a perpetual bearer. It very much resembles that good variety Dr. Maclean. Sutton's Giant Emerald Marrow bears a good crop of first-rate flavour, but is soon over. Ne Plus Ultra is the sort I rely on for late summer use, as it is a more perpetual bearer than Walker's.

Parsnips.—The Student. These grow to a good size and are good flavoured. Spinach.—New Longstanding does not run to seed as soon as the old summer Spinach does, and is equally good. Tomato.—Vick's Criterion is a good early one for indoors, and Hathaway's Excelsior is a good sort for main crop. Dedham Favourite is handsome in appearance and good flavour, but is not such a heavy cropper as Hathaway's. Turnip.—Extra Early Milan Strap-leaved has taken the place of Purpletop Munich. They are both very quick growers, but poor flavour. Sutton's Early Snowball and Veitch's Red Globe are good sorts. Vegetable Marrows.—These have borne excellent crops this year, while last year they were a failure. Moore's Cream is a large free-bearing sort. We have grown Pen-y-byd this year. It has been very prolific, but we had not the true variety according to the description given.

Potatoes.—We have had good crops of Potatoes this year, and free from disease, but flavour has not been good. We rely chiefly on Hammersmith Kidney for earliest, with Ashleaf for second, then Woodstock, Sutton's Early Regent, Magnum Bonum, Schoolmaster, and Reading Hero. The Schoolmaster is the best flavoured of the late sorts, but does not crop heavily. Reading Hero is the next best in flavour, and a heavy cropper, but not good in shape. I shall be glad if some others will amend my list.—J. L. B.

ORCHIDS AT SHEFFIELD.

ALTHOUGH this is not a month when Orchid flowers are expected to be met with in abundance, still where large collections are grown there

are many now flowering. A few days since I had the pleasure of calling upon several of our Sheffield Orchid growers, and was much pleased, also not a little surprised, at the bright display now to be found in the flowering houses of the respective establishments.

WESTBROOK.—The residence of Mrs. H. Wilson and her son, A. Wilson, Esq., who is a connoisseur in choice and rare Orchids, and the proprietor of the extremely valuable collection here grown. The collection of *Odontoglossums* is especially large, comprising many of the finest hybrid spotted forms of *O. crispum*. The plants are in robust health, making very strong growths, and having stout foliage of a rich dark green colour. A decided improvement in this respect is perceptible during the last few months, and which Mr. Pidsley, the able and thoughtful gardener, attributes it to an alteration they have this season made in the stages in the *Odontoglossum* houses. These previously consisted of stone tables running along each side of the low span-roofed houses with a pathway up the centre, the pots being placed upon these tables in direct contact with the stone. A plan, however, has now been adopted obviating this, which has been for some time before adopted by Messrs. Sander at St. Albans, and which is as follows:—The stone tables have been slightly lowered, and upon them, raised about 8 inches from the stones by light iron legs standing in zinc dishes kept filled with water, is fixed a light wooden lattice-work stage, a thin covering of moisture-holding material, as moss or sand, being placed over the surface of the stone table and under the wooden one upon which the plants are arranged. Mr. Pidsley states that since these alterations, although the temperature is kept at the same point as formerly, a decided change in the atmosphere is perceptible, and is evidently enjoyed by the plants. The following is a list of the various Orchids in flower at the time of my visit:—*Dendrobium heterocarpum*, *Ainsworthi*, and *nobile*; *Odontoglossums crispum* (several forms), *Pescatorei*, *hebraicum*, *Rossi majus*, *Lindleyanum*, *Uro-Skinneri*, *cirrhosum*, *Krameri*, and *nebulosum*; *Oncidium tigrinum*, *cheiroporum*, *Forbesi*, *macranthum*, and *varicosum*; *Cypripedium Spicerianum*, *Roezli*, *Fairrieianum*, *insigne*, *Maulei*, *Chantini*, and *album marginatum*; *Laelia autumnalis* and *albida*, *Cymbidium Lowianum*, *Lycaste Skinneri*, *Cattleya maxima*, *Pleione maculata*, *Maxillaria grandiflora*; *Masdevallias Shuttleworthi*, *Davisi*, and *igneae*, *Tricocentrum albo-purpureum*, *Vanda tricolor*, *Phalenopsis Sanderiana* (fine var.), and *Coelogyne Massangeana*. A fine hybrid spotted *Odontoglossum crispum* had a very strong spike carrying thirty-four blooms. *Cypripedium Fairrieianum* had been in flower for two months, and was still good. A plant of *Dendrobium nobile*, 3 feet in diameter was literally covered with flowers, and was flowering on the current year's growths. A fine collection of *Chrysanthemums* has been grown at Westbrook this season.

OAKHOLME.—The residence of Thos. Wilson, Esq. A visit to these gardens is at all times a treat to those who delight in seeing good examples of plant culture combined with perfect cleanliness, neatness, and good order. Mr. Wm. Hannah, the experienced gardener, has long had more than a local reputation. The large plant stove is bright with large and splendidly coloured specimens of *Crotons*, *Dracenas*, *Alocacias*, *Sphærogyne latifolia*, and *Cyanophyllum magnificum*, several almost perfect plants, having four or five pairs of leaves each, very large, richly coloured, and without spot or blemish; *Adiantum farleyense*, a number of large specimens growing most luxuriantly, and a general collection of stove flowering and foliage plants. Orchids are well grown at Oakholme, and the chief house is very gay with *Dendrobiums Ainsworthi* (several good plants), *cœrulescens*, *nobile*, *Wardianum*; *Odontoglossum crispum*, some fine plants and vars., one carrying over fifty flowers upon one strong branching spike; *Cymbidium Lowianum*, a large plant, with numerous flower spikes; several *Oncidiums*, *Calanthes*, &c.

In a smaller plant stove we were shown several very richly coloured and valuable forms of seedling *Crotons* raised by Mr. Hannah from seed he has succeeded in ripening, and the parentage of which is *C. majesticus* × *C. Weismanni*. These seedlings will be most valuable either as small table plants or for large exhibition specimens. A large number of *Chrysanthemums* are here grown especially for late flowering, as many of these are only just showing colour freely, whilst others are now at their best. A fine display will be maintained with them up to and after Christmas, when they will be succeeded by forced *Azaleas*, *Primulas*, *Schizanthus coccinea*, *Cinerarias*, and *bulbs*.

MOUNT VIEW.—The residence of D. Ward, Esq. The collection of Orchids here is a very large one, filling five or six large houses. The robust health and fine condition of the whole collection throughout testify most unmistakeably to the fact that the gardener, Mr. Page, is no novice in Orchid culture. The Orchids at Mount View have wonderfully improved under his care, and bid fair to become much more widely known and celebrated than at present. Some splendid varieties of *Phalenopsis amabilis* are now in flower, with large numbers of *Lycaste Skinneri*, *Odontoglossum crispum*, and *Dendrobium Wardianum*. Light wooden stages on which to stand the plants are here used as at Westbrook, and the vigour of the plants proves the soundness of the practice.—W. K. W.

THE LATE MR. CHARLES JEFFREY.

THE death of Mr. Pohlman will cause regret to many Auricula growers. In the end of August last sincere sorrow was caused to many by the death of Charles Jeffrey, Falkirk, where for upwards of fifty-eight years he carried on the business of bookseller, respected and esteemed by all who knew him. He was a fellow worker with Campbell, Lighthody, Traill and others who brought the Carnation, the Ranunculus, the Tulip, and other florists' flowers for a time to the ascendant in Scotland, and especially the Auricula; from which their names are not likely ever to be

disassociated. Of these four Mr. Peter Campbell still survives. To the very last Mr. Jeffrey remained devotedly attached to the Auricula. His health had been for some time failing. Only a week before his death, however, Mr. Menzies of Duns and myself enjoyed in his company at Falkirk some hours, such as lovers of that flower know. Little did either of us think when congratulating the genial gentle old man of eighty-four years on his appearance that the end was so near. He was then attending business, and of course showed us his stock of Auriculas, always a most select one, which his brother, as ardent a florist as he, will still maintain. I will afterwards request leave to allude to his success with the Auricula. Meanwhile, in the name of a circle of friends, growers of that flower, a circle in which Mr. Jeffrey formed one of the strongest links, and at a date even yet too early to write composedly of our loss, I would ask space in the Journal, which he prized so much, to record our sorrow at the removal of a valued friend, a genuine florist, one of the truest, kindest, most upright, and most loveable of men.—A NORTHERN AMATEUR.

JAPANESE CHRYSANTHEMUM WHITE CERES.

THIS variety was introduced from the continent in 1882. At the December meeting of the Royal Horticultural Society of that year Messrs. T. Jackson & Sons, Kingston-on-Thames, exhibited a stand of cent blooms, and were awarded a first class certificate. It was then described as a broad-petalled pure white variety, intermediate in character between Elaine and Fair Maid of Guernsey. That is an accurate description of it. It is of a strong robust habit, making fine wood and foliage. The flower buds set in August about the time of the earlier varieties. They swell to a good size, are conical in shape, and the calyx very sealy. Although the variety sets its buds so early, it does not flower in time for the November exhibitions, for it is truly a late-flowering variety, and in a natural way does not flower until the end of November or the beginning of December. It cannot be properly described as a free-flowering variety, or its value would be greatly enhanced. It requires disbudding to three or four flowers, and assisted by a little heat to get them out, the small side shoots hardly ever producing a flower. There is another Ceres, introduced I think in 1883, described as a canary yellow, but it never came into general cultivation. In some trade catalogues there is a variety under this name described as a blush pink, but that I take to be identical with this one under notice, as the outer petals often come blush pink, but it opens pure white. Hence the confusion that has arisen respecting these varieties under the same name, as mentioned by me in the Journal in the autumn, 1884. That year I had some good blooms of it which decorated the table at our first dinner of the Kingston Chrysanthemum Society in December, being first brought out and exhibited by Messrs. Jacksons. We called the variety Jackson's Ceres, to distinguish between the three. I am not able to say who is the raiser of it.—C. ORCHARD.

[Our illustration was prepared from one of the magnificent blooms shown by Mr. Beckett of Elstree, at the National Chrysanthemum Society's Floral Committee meeting recently, when a first-class certificate was awarded for the variety. Twelve grand blooms were shown of great size and substance, exceeding 7 inches in diameter, proportionately deep and pure white. The woodcut is a slightly reduced representation of an average bloom, and correctly depicts the character of the variety as grown by Mr. Beckett.]

HOWICK HOUSE.

THE residence of G. E. Wrigley, Esq., is situated about four miles from Preston. The gardens are approached by a short but neat drive. The grounds surrounding the mansion have been tastefully laid out, and the lawn is fairly extensive and well kept. The system of decoration is varied, which adds a charm and interest to the grounds that is not generally met with since the modern style of flower gardening has been in vogue. Large beds are devoted to Hybrid Perpetual Roses, which have made remarkably strong growths, all the best and newest kinds having been planted. Other beds and borders are furnished with collections of bulbous and herbaceous plants, others with *Rhododendrons* and *Liliums* intermixed; these, with large beds of *Dahlias*, single and double, give some idea of the system of planting and ornamentation that has been adopted. A wall of Peaches bordering one side of the grounds was carrying a good crop of fine fruit. In one portion of the grounds shaded by forest trees *Todea superba* had stood outside unprotected during the whole of last winter. The shrubs and Conifers were healthy and luxuriant, except where they had attained to a fair size, and had their roots in wet cold clay. It appears in this neighbourhood that choice Conifers fail when their roots leave the more fertile soil of the surface.

The glass, which is extensive, is, however, the principal feature of interest in these gardens. The houses contain a large and excellent collection of Orchids, by far the most complete in the vicinity of Preston. The first house, a lengthy lean-to structure, was full of *Odontoglossums* in variety, the whole of the plants having made remarkably large pseudo-

bulbs, with stout leathery green foliage. It would be difficult to find a house of these plants in more promising condition, and I do not doubt from their appearance strong flower spikes with large bold flowers will

in potting these plants annually after flowering—that is, directly they send up shoots from the base. In a span-roofed greenhouse, principally filled with Zonal Pelargoniums—a selection of the best varieties, just



FIG. 75.—CHRYSANTHEMUM WHITE CERES.

be the result. *Disa grandiflora* was quite at home in this structure, having flowered profusely, and throwing up luxuriant growths from the base. Mr. W. Swan, the well-known and successful Orchid grower for so many years at Fallowfield, in whose charge these gardens are, believes

coming into full bloom—were numbers of *Barkerias* in a most flourishing condition. These plants had made stout pseudo-bulbs and had flowered profusely. The cool treatment and abundance of light to which they have been subjected is evidently the treatment that *Barkerias* require if they

are to do well and flower freely. Another point worthy of note with these plants is that they require very little material about their roots; there was scarcely any about the plants in question, and they were rooting freely. In a large span-roofed house devoted to Orchids *Oncidium Jonesianum* was in grand condition and very effective with its white lip and beautifully spotted sepals and petals. The plants were growing on blocks and could not be doing better. O. Rogers was also at home in baskets and upon blocks, the majority having been recently imported; but strong growth had been made, and flower spikes in abundance were ready for expanding their showy yellow flowers. Noticeable were some large pans of *Coelogyne cristata* in grand condition, having made bold plump pseudo-bulbs that will be certain to flower well. *Zygopetalum Gauteri* was in bloom, and *Cymbidium eburneum*, large plants, were in perfect health. The difference between the old and now foliage conveyed at a glance the better condition of the plants since they have been in Mr. Swan's charge.

The favourite *Miltonia Clowesi* was displaying its beauty with strong spikes and large well-coloured flowers. Cattleyas, principally *C. Mossiæ* and *C. Trianae*, filled the remainder of this large house, which were imported last winter, and the growths the plants have made in so short a space of time is remarkable, and shows what can be done by good care and treatment. Many of the pseudo-bulbs are as stout and strong as if they had been imported some years, and the majority have bold flower sheaths that will in spring produce a gorgeous effect. The Cattleyas are thoroughly ripened, but a little yellow in appearance, owing to little or no shade having been employed. The next house, a large span-roofed structure with a bed in the centre and stages round the side—in fact the whole are constructed on this principle—contained many plants of *Cattleya Mossiæ* imported the same time as those mentioned above, and in equally good condition; *C. Skinneri* was in superb condition, with thirty-five growths; *C. bicolor*, many plants in bloom, and amongst them a variety named *C. b. Wrigleyana* with a very dark lip; another *C. b. Measuresiana* was in darkness and colour between the last and *C. bicolor*. *Dendrobium Deari*, with its pure white flowers, was in bloom, and doing well without shade, except that supplied with a little whitening syringed on to the glass; *D. higibbum* was at home under the same treatment, and the same may be said of *D. crassinode*, *D. heterocarpum*, and *D. Goldieanum*, which had made a remarkable growth from the top of an old pseudo-bulb. *D. Wardianum* was miserable, thus showing that while such Orchids as those enumerated flourish, this fails to grow, and finally dies when subjected to too much light during its season of growth. *D. giganteum* was in fine condition under this treatment, while *D. chrysanthum* was in full beauty, and small plants of *Vanda teres* were all that could be desired, and had been flowering freely. It will perhaps be remembered that Mr. Swan grew this plant well at Fallowfield, and showed fine plants on more than one occasion nearly covered with bloom at the Whit-week Shows at Manchester.

Another large house similar to the last was full of *Cattleya Trianae* that had flowered twice in excellent condition; *C. crispa* was good; *Lælia Perrini*, *C. Dowiana*, *C. Gaskelliana*, several plants in flower, and some of the spikes were carrying four large flowers each. *C. Sanderiana* was doing well grown close to the glass; *C. Mendelli*, *C. Percivaliana*, were also in the same excellent condition. A light form of *C. Lawrenciana* has flowered, being white shaded with pink, while the others imported at the same time that have flowered are true to the dark striking character of this variety. *Lælia Dayana* and *Percivaliana* were doing well in this house. In another smaller house a good stock of *Odontoglossum grande* was in flower, while large quantities of *Pleiones* were ripening on the opposite stage in this house. *Crotons*, *Dracænas*, and such plants of a decorative size were grown. East Indian Orchids are not grown on a large scale; nevertheless, *Phalenopses*, *Vandas*, *Aerides*, *Cypripediums*, and others have a place accorded them. The Cattleyas are the chief feature, for they are cultivated on a large scale. Some 2000 imported plants have been potted during the past twelve or eighteen months. Since Mr. Swan has had the care of these gardens no plants could be doing better for the time they have been potted.

It must not be concluded that because Mr. Swan has again charge of a collection of Orchids that he is only a specialist, for such is not the case, for in addition to his ability as an Orchid grower he is a good general gardener, and does well all that he takes in charge. A large house just filled with *Chrysanthemums* displayed at a glance that the culture of these favourite plants are well understood. The majority of the plants are bushes that have been disbudded, and carry from three to twelve large flowers. The plants are grown on the Manchester principle—dwarf, strong, with foliage to the rim of the pots. Mr. Swan's plants, taking them all through, are the best specimens that I have had the pleasure of seeing for some years. The conservatory is attached to the mansion, and was gay with a general assortment of flowering and foliage plants. In a large span-roofed house a strong healthy plant of *Maréchal Niel* Rose and another of *Cheshunt Hybrid* covered the roof. In the house devoted to Ferns in pots *Adiantum Capillus-Veneris magnificum*, large plants, was most conspicuous. This is a beautiful Fern, much better than the old form, and should find a place in every garden. Mr. Swan's ability as an Orchid grower and gardener are too well known to need further comment, and therefore I shall conclude these notes by thanking him for escorting me round the gardens over which he presides.—B.

THE Cattleyas, in common with all other plants in this famous collection, are evidently enjoying the treatment they receive at Mr. Swan's hands. They are in superb health, and promising well for the coming season's display. Mr. Swan informed me that he has counted upwards

of 500 flower sheaths on *C. Mossiæ* alone, which, at a very low estimate, means 1000 flowers; more than 300 on *C. Trianae*, besides hosts of *C. Mendeli*, and other varieties. It is noticeable that during the present year they have never been without Cattleyas in bloom.

Odontoglossums are also a feature there, and an importation of several hundreds of these lately arrived prove that Mr. Wrigley's interest in Orchid-growing is not diminishing. In bloom were several excellent forms of *Odontoglossum Rossi majus*, and amongst other good plants in flower were *Dendrobium higibbum*, *D. superbiens*, and *D. Dearei*. The latter I consider one of the most desirable *Dendrobiums*, on account of its free-flowering and lasting qualities.

A very fine plant and good form of *Cypripedium Spicerianum* was well flowered, and I noticed also a plant of *Aeranthus Leonis* bearing the largest flower I have seen of this class but perhaps over-praised representative of a beautiful family.—BRADWEN.

THE INSECT ENEMIES OF OUR GARDEN CROPS.

THE PLUM.

SINCE several of the insects that are more or less injurious to the varieties of Plum have been described in connection with other fruit trees, our observations upon these may be compressed into one article. It must be premised that of late years at least no very serious amount of damage has been inflicted upon the Plum by insect foes, though the cultivation of this fruit, in spite of the large foreign supplies, has certainly increased, owing to the number of those who now take up horticulture for pleasure or profit. The abundance of Plums in 1886 proved that if insects had had their share of flowers and fruit, they left a large yield for humanity. Unfortunately, it happens sometimes that the food is in one place, but the people in another, and they are not brought together. Thus, while in the metropolis there are always plenty of hungry folk, in some Kentish orchards Plums were allowed to drop from the trees and decay, or given promiscuously to children, so much yet is wrong in our methods.

Smallest of the pests of the Plum is a mite which is, however, only a disfigurer of the leaves. The little galls they produce usually occur on the edges of the upper surface; from these as they mature springs a crop of whitish hairs. These galls are noticeable as early as May, but the mites, by whose punctures they are produced, are very seldom to be seen crawling from their place of concealment. In Germany, besides this species (*Phytoptus Pruni*) they have found another nearly akin, which haunts young trees some seasons, and by its exhaustive effect upon the twigs which it attacks has caused the death of the plant. The red spider, so-called, otherwise *Tetranychus telarius*, a spinning mite, a visitor to fruit trees both under glass and in the open, must be treated with sulphur washes when it appears upon the Plum, for it is hard to kill. Some report it has been easily eradicated if taken in time by quassia liquor, mixed with softsoap.

Next in size and a worse trouble to the cultivator than the mites are the Plum aphides, for this fruit tree has not only its special aphid, but has visitations from several species. Thus the green fly of the Hop, *A. Humuli* or *Malahebi*, often infests the Plum during early summer, multiplying very rapidly. Afterwards they may migrate to the Hop, and possibly when the brood emerges in late autumn to deposit eggs they may do so on low-growing plants. The black fly of the Cherry now and then appears on the Plum, but the particular aphid is a dull green or light brown insect called *A. Pruni*, which when left to pursue its course rolls up the leaves extensively, and exuding a greyish powder as a kind of protection seems to escape those foes which kill some aphides. It is a strong argument for using timely remedies, that when the trees have been suffered to get into a weakly state applications potent enough to kill the fly are likely to hurt the Plum. Also it is not a pleasant reflection to think that during the winter the germs of our next year's pests are reposing undisturbed on the trees, whereas if in the autumn we carefully clear away all needless suckers and straggling shoots, we may be sure that with them we have disposed of a good percentage of aphid eggs.

Aphides are always a source of trouble, specially so in some dry seasons, yet on the average we have most to complain of the numerous insects of the Lepidopterous order that occur upon the Plum. Though less common on this than on some fruit trees, we find within its wood the tough insidious larvæ of the leopard moth (*Zeuzera Aesculi*), which by its channels in the branches leads to their snapping off during the spring gales. Sulphur blown into any holes that may be noticed is serviceable, or the caterpillars can sometimes be killed by inserting a wire. Then two species of weevil, the stem borer (*Rhynchites alliarie*) and the copper weevil (*R. cupreus*) in their round amongst the fruit trees in spring do not overlook the Plum, piercing its shoots to deposit eggs therein, with the result that the shoots collapse, the

last thing done by the mother insect being to cut each one through. The second species, indeed, does not stop short at this injury, but some of them emerging later seek out the young fruit and place eggs in the pulp; the Plum still grows for a little while, but shrivels till it falls. Though *Carpocapsa Wæberiana* has been styled the Plum tree tortrix, I think it is more usually detected on the Peach and Apricot, causing unnatural swellings of sap which may kill the tree. The pretty but harmful moth lays eggs on the trunk; by degrees the tiny caterpillars work their way to the inner bark, where they feed till mature. We find two broods each year, the moths flying in May and September. Catching them is a hopeless matter, but washing the trees during their season with any application deterrent to moths and fatal to larvæ will pay.

Of the caterpillars that are chance or regular residents I believe our most troublesome species is the winter moth (*Cheimatobia brumata*), for not only does it infest the expanding buds in spring, but continues to devour the leaves through May and June, and the Plums towards the time when the caterpillars are full grown are netted over with the webs they spin, which are not easy to clear off. Fortunately hosts of them are killed by the cold winds of April and many birds devour them. The fat-bodied wingless moths are prolific, laying about two hundred eggs. By attending to the soil at the roots many pupæ may be destroyed, and by surrounding the trunks with some sticky substance the ascent of the moths to the twigs and branches in November or December is effectually stopped. The small ermine (*Yponomeuta padella*) a downy little creature with wings studded like courtly robes, occasionally passes its caterpillar life in the Plum, but my experience of it has been that next to Hawthorn it prefers the Apple. It is also a web-spinner, and the cords which the larvæ form are much stronger than those of the winter moth, and they frequently travel from bough to bough in large companies. After their attaining the full size they spin up amongst the twigs they have stripped, except such stragglers as may have been dislodged by the wind, which then retire to odd corners. Should the insect have been previously unobserved, there is no difficulty in so far removing the webs as to greatly diminish the number of the moths, but it is better to look out for the newly hatched broods early in the season, and autumn cleansing of the trees will take off many of the eggs. And then the blue, orange, and black lackey caterpillar, and the familiar caterpillar of the vapourer moth, sometimes wander on to the Plum from some adjacent shrub. In some European countries the brown tail moth is regarded as one of very troublesome foes of the Plum, and this species, called in science *Liparis chrysorrhæa*, was the cause of most absurd apprehensions in England about a century ago, according to Curtis, it being then unusually abundant. We find it now moderately common on the Sloe and Hawthorn, but there is no doubt that some seeming accident might lead to its appearing numerously on the Plum or Pear. About ten years ago I discovered a haunt of these caterpillars in a line of hedgerow in the neighbourhood of Chalk in Kent, and observed a steady increase year by year, which led me to advise measures for their removal, as they might spread to the orchards. Nothing was done, however, but Nature wrought a cure; an unusually wet winter extinguished the hibernating colonies *in toto* at that place.

Smaller still and often unnoticed are several caterpillars of the Tortrix tribe of moths, which make their way into the expanding buds of flower or fruit. *T. angustiorana*, which during the summer appears upon ripening fruit, the Vine included, is also during some springs to be found in multitudes on the buds of Peach, Apricot, or Plum. This is a caterpillar which in colour is of varying shades of green; beside, we may detect the reddish-looking *T. luscana* or the brown and black *T. cynosbana*. Much hurt is done by a moth which lays its eggs upon the fruit only, appearing in May or June, but its dull tints of grey or brown render it unobservable while egg-laying. The young caterpillar lodges in the Plum close to the stone, and the fruit is accelerated in its progress yet falls prematurely. The only effectual remedy is to pick off and destroy any infected fruit that are perceivable, as also all that drop off. A similar plan must be pursued with those Plums that contain the grubs or larvæ of the Plum sawfly (*Tenthredo morio*), or else they enter the earth to reappear as flies the following season. These flies, though four-winged, are rather like small house flies, but black with reddish feet. Having pierced the calyx by means of their tiny saws, they deposit their eggs in April or May, showing preferences for certain kinds, the *Magnum Bonum*, for instance. But the Dawson and other small kinds they usually pass by. The slimy grub of another sawfly abundant on Cherry and Pear, *Selandria Cerasi*, now and then appears on the Plum. Of course the ripe

fruit is apt to be infested with ants, wasps, and centipedes.—
ENTOMOLOGIST.

MUSCAT GRAPES SHRIVELLING.

MUCH has been written as to the cause of Muscats shrivelling so much this year. In reply to Mr. Williamson, at page 470, I am inclined to think that they have suffered very much from the cold backward season, and the roots too far from the influence of sun heat; deep, stiff, retentive borders being, in my opinion, better adapted for black Grapes. Our borders for Muscats have been kept somewhat shallower, using a free loam, well incorporated with old lime rubbish and half-inch bones, and annually top-dressing the inside borders with good old turf and Thomson's Vine manure, to induce surface roots—of great importance to the colouring of the bunches, in my opinion. This year I selected the second-sized bunches in general in preference to the largest ones, leaving rather more on the Vines, finding that the larger bunches failed to finish as well as I should like, and which I attributed to their vigour and lack of sunshine to ripen them thoroughly.

I seldom expose the bunches to the light by placing the foliage aside, unless the bunches are large, believing when the Vines are healthy in root and branch, and the laterals not overcrowded, that they are all the better for a shading of their own foliage to protect them from the mid-day sun.

Watering this season had to be carefully done, as I found a good supply at starting time was enough until the berries were set, and in August and September they had moderate waterings to keep the bunches plump.

Some seasons, but not the last, I have seen need to water the outside borders at midsummer, but this year, when examined, they did not appear to require it, owing to the state of the weather. From my experience I am led to believe that shrivelling, provided water be given in sufficient quantity, is more owing to a defective condition of the border, or from the roots having penetrated to the drainage, requiring the border to be renovated and the roots pruned and relaid near to the surface.—
WM. MCKELVIE, *Broommouth Gardens, Dunbar, N.B.*

THE MANAGEMENT OF SOIL—HIGH AND DEEP PLANTING.

How applicable is Mr. Iggulden's phrase about trenching to that of stirring the surface of the soil; if the first is a "time-honoured custom" how about the latter? Just now he poses as the champion of a practice that doubtless has existed ever since land has been cultivated. The length of time, however that a system has been in vogue is no guarantee that the practice is a sound one, or the newer method of trenching radically wrong. Since this subject first commenced your correspondent has modified his tone in a very marked degree by the admissions he has made from time to time, and which have done much to strengthen the formidable arguments of his opponents. But the past shall be the past now that we have a new title for the old subject.

The matter set before us must be carefully examined, for as it now stands on pages 446 and 474 in the following issue, it might lead some young gardener astray who is launching out in the cultivation of land, perhaps for the first time, and who, from the arguments advanced, might conclude that trenching on light soils can be carried out to any extent, while heavy land should not be trenched at all. That much trenching has been wrongly done will not be denied, but that is no argument against the practice when rightly conducted. Mr. Iggulden is perfectly right in his advice to consider well the nature of the soil, for soils differ widely in character, both chemically and mechanically; but the wholesale condemnation of the system on what may be termed heavy soils will lead as many or more into the wrong path, as indiscretion in trenching has done in the past. To trench light soils and bring to the surface a spit of pure sand, red, white, or black, would prove as ruinous as bringing a spit of pure clay to the surface. Soils of the first nature are bad to manage, and present to the cultivator more difficulties than does land resting on a bed of clay. I have worked land in the fens of Lincolnshire with 6 inches of soil resting on a bed of clay, badly drained, for it is utterly impossible to get the water away at some seasons of the year. I have also worked light soils that abound in Lancashire, varying in the same garden from 18 inches to 6 inches in depth. I have worked land in the neighbourhood of London resting on a formation of gravel; I have worked medium land on a hillside 550 feet above the sea level in Northumberland. I am now working land, part of which is clay and the remaining portion sandy. I merely make these statements so that if I differ from Mr. Iggulden he will at least not accuse me of inexperience, and I repeat soils of a light shallow nature are the most difficult to manage satisfactorily to get from them heavy crops of first-rate fruits or vegetables.

Whether the soil has been light or heavy it has been improved in each instance by deepening the root run and providing a greater depth of workable fertile soil, but not by trenching on the orthodox principle of bringing to the surface a spit of clay, sand, or shale, and if it is this system that your correspondent condemns, then I agree with him. I strongly advocate turning the soil as deep as it will allow, and bringing 2 or 3 inches of the base to the top, that is, the crumbs of the trench and a little sub-soil. The amount brought to the surface depends entirely on the crop that is to be grown; for instance, if Peas, about 3 inches is brought up, and when they are sown the trenches are made the same depth, the

roots descend in the fertile soil below, while the soil from the base becomes pulverised by exposure. This practice, with manure applied to the surface yearly, slowly but effectually improves the land without any immediate injurious results.

The deeper light soils can be rendered the more retentive of moisture they become, and the more fertile. Manure should be given more freely, and differ from that used on heavy land. Cow manure, not in a decomposed condition, is the best for light land. If manure is added to enrich the lower soil a good supply must also be applied to the surface before sowing or planting. Light soils can be rendered wonderfully fertile by liming and spreading on the surface in autumn a good dressing of clay for a few years, to be pulverised by exposure to the atmosphere. It will fall to pieces, and add to the soil absorptive and retentive powers which it previously lacked, except it were rich in humus. Soils that can be deepened from 6 inches to 18 inches or 2 feet will provide a root run in which the majority of plants and crops will flourish. Passing to fruit trees, those to which Mr. Iggulden alludes have long fibreless roots because they have been left alone, negligence in root-pruning, and probably driven down by drought in summer. This is the result of "severely letting them alone," and similar results will follow such circumstances on whatever soil fruit trees are grown. If Mr. Iggulden believes in a shallow root run why does he go to the trouble of raising mounds on which to plant his trees? These miniature hills cannot be raised without providing a deeper root run for the trees than if they were planted on the surface. I do not condemn mounds wholesale, for I have raised them in the fens of Lincolnshire, or the roots of trees would have stood in water all winter. Trees on mounds are, as a rule, more liable to go down into the clay than they would if provided with the same depth of fertile soil and planted on the level. The edges of the mounds become dry and the roots strike downwards, but with a good root run they extend horizontally, and thus secure the requisite food without having to descend for it. Mulching would not be tolerated in all gardens, so that no hard-and-fast lines on that head can be adhered to. It certainly excludes frost in winter, arrests evaporation in summer, but it prevents the heat of the sun from penetrating the soil in spring. I have no doubt that Beans, Lettuce, and the other things referred to do better on ridges than on the level, first because they have a greater depth of fertile soil, and secondly because they are warmer than they would be planted on the shallow surface with a bed of cold clay just beneath them.

No comparison can be drawn between timber trees in forests and fruit trees in gardens, in which the ground is dug and cropped. The roots of the former extend near the surface because they are not disturbed, and Nature is continually providing fresh food for them by the action of the atmosphere and the decay of vegetation. Fruit trees are subjected to artificial treatment. Plant a tree in the park and leave it alone, it will take possession of the rich surface soil, but garden trees must usually be confined to a very limited space. A few inches of shallow soil means in a few years a stunted tree that produces cracked flavourless fruit through its roots descending into sour or ungenial subsoil. Provide a sufficient depth of fertile soil, and give the requisite food periodically when digging a trench round the trees, and the roots will remain "at home," and healthy fruitful growth will be the natural corollary.

If trees are lifted and planted at the proper season they give but little trouble in watering the following season, especially if planted on the level, but when raised above the surface of the ground they are necessarily more exposed to drying influences.

I do not doubt they bear drought as well on ridges as on the flat when the land is worked on the one-spit system, for they have then no depth of root run, and are subjected to the withering and drying conditions of the atmosphere.—A LOOKER-ON.

THE NATIONAL CHRYSANTHEMUM SOCIETY'S ANNUAL DINNER.—DECEMBER 13TH.

THE annual dinner of the National Chrysanthemum Society was held at the Old Four Swans, Bishopsgate Street, on Monday evening last at 6 p.m., when there was a large attendance of members, 111 being present. The occasion was a memorable one, as it was selected as fitting opportunity to present to the Hon. Secretary, Mr. William Holmes, a testimonial of the esteem in which he is held, and as a recognition of the valuable services he has rendered the Society. In addition also to the presentation of the prizes won at the recent Exhibition, a second testimonial was provided for Mr. C. Gibson, as a consolation prize for the loss he sustained by a slight oversight in the class for forty-eight cut blooms at the November Show. So many important events being thus crowded into the business of the evening no doubt induced many more members to attend than would have otherwise been the case, but so large a gathering was a good indication of the Society's strength and the enthusiasm which prevails in all matters connected with the Chrysanthemum.

The chair was taken by the President of the Society, E. C. Sanderson, Esq., shortly after 6 p.m., being supported by Messrs. E. C. Jukes and N. Davis, the Vice-President, R. Ballantine, Esq., taking the vice-chair. After some time had been devoted to the consumption of the substantial repast provided, the usual loyal toasts were proposed and honoured. The medals awarded at the November Show and subsequent meetings were then presented to the winners with a few appropriate remarks from the Chairman, Mr. W. Holmes reading the amounts of money prizes gained by the exhibitors, the total being £223 4s. 6d. The testimonial to Mr. C. Gibson, gardener to J. Wormald, Esq., Morden Park, was next presented, the subscriptions obtained for the purpose having been expended in the purchase of a handsome silver cup bearing a suitable inscription. Mr. Jukes, in presenting it to Mr. Gibson, remarked that the majority who saw the admirable

stand of forty-eight cut blooms exhibited at the Royal Aquarium deeply regretted the unfortunate oversight which deprived the grower of the prize he had otherwise so well deserved. They were a great credit to the exhibitor and equally so to the Society, and he was happy in having taken part in procuring this recognition of Mr. Gibson's skill as a cultivator. These remarks were loudly applauded, as was also the recipient's brief and hearty expression of thanks.

Mr. R. Dean proposed the health of the President, observing that such a large assembly of members marked not only the success of the Society as an institution, but indicated conclusively the success of the administration of which Mr. Sanderson had so long presided. He referred in complimentary terms to his services as a supporter of the old Stoke Newington Society, as a contributor to the floricultural Press in past years, as a cultivator and exhibitor of the Chrysanthemum, and to the genial social manner which distinguished him as a Chairman. In replying, Mr. Sanderson stated that from the earliest days of the Society he had earnestly striven to forward its interest, because his heart was in the work, and because he loved the Chrysanthemum. His rule in life had been to accept a merited defeat uncomplainingly, but only that it might act as a stimulus to greater efforts on other occasions, and he wished exhibitors generally would display more of the same feeling. The health of the Vice-President, Mr. R. Ballantine, was proposed by Mr. Jukes, and responded to in a brief but graceful speech; Mr. Kemp proposing the health of the Treasurer, J. Starling, Esq., but in the absence of the latter gentleman the President made a few remarks in reply.

The principal event of the evening, the presentation of the testimonial to Mr. W. Holmes, then followed. Mr. Sanderson said that no event of his life had afforded him so much pleasure as presenting a testimonial to his friend Mr. Holmes, whom he characterised as "the Prince of Secretaries." It was not necessary for him to dilate upon the services he had so willingly rendered to the Society; the results were apparent to all in their prosperity, the great advance in the number of their members, the increasing importance of their shows, and the useful work performed by their Committee. Mr. Holmes had gained the respect of all with whom he had to deal by his uniform courtesy and business tact, and he hoped the Society might long enjoy the advantages of his guidance.

The testimonial consisted of three silver epergnes, a handsome centre-piece for the table with two side tazzas, stems of Palms or Tree Ferns supporting with their fronds glass dishes for flowers or fruit. The inscription on the centre epergne was as follows:—"Presented to Mr. William Holmes by upwards of 100 members and friends of the National Chrysanthemum Society, December, 1886." A beautifully illuminated address accompanied the above as follows:—"This address, with three epergnes, is presented to Mr. W. Holmes by upwards of 100 members and friends of the National Chrysanthemum Society, as a slight mark of regard and esteem. They desire thus to place on record their sense of the inestimable value of the services which he has rendered to the Society as Honorary Secretary, as well as the immense stimulus which his labours in the cause of Chrysanthemum culture have afforded to growers of that flower throughout the country. They feel that the great success and high position so rapidly achieved by the Society are chiefly due to his constant and unwearied efforts on its behalf, and they most heartily wish him a long life and much happiness." This was signed by Messrs. Sanderson, R. Ballantine, and N. Davis, the latter having acted as secretary to the Testimonial Committee.

In acknowledging the testimonial and complimentary remarks which had been made respecting him, Mr. Holmes (who was greeted with much cheering) expressed his sincere thanks and hearty appreciation of the honour paid to him. He then briefly and lucidly reviewed the history of the Society, and his own or his father's connection with it from the time when it was formed in 1847, when its first Show, consisting of three stands of blooms, was held in the Rochester Castle Inn, until the Show held last November, when 3722 blooms were exhibited. He traced the progress and vicissitudes of the Society until in 1873 it became the Borough of Hackney Society. Some time afterwards it was held that matters were not quite so satisfactory as was desirable, and application was made to the Alexandra Palace, Crystal Palace, and Royal Aquarium Companies as to the possibility of arrangements being effected with regard to the annual exhibitions. The best terms were offered at Westminster, and upon Mr. Holmes becoming Secretary in 1877 the first exhibition was held in the Royal Aquarium that year. Several years' substantial progress was made, and in 1884 the title of the National Chrysanthemum Society was assumed. As an example of the continued advance it was noted that last year there were 283 members, but this year the total was 399, and at the next meeting probably twenty-five more would be elected.

Several other toasts were proposed and honoured, the evening being enlivened by songs and musical performances, a very successful meeting terminating at a late hour with the customary votes of thanks.

WEEKS'S FIREPLACE BOILER.

THIS week we have the pleasure to present our readers with drawings of Messrs. J. Weeks & Co.'s fireplace boiler, which we consider an admirable invention, capable of answering many useful purposes in situations and amid surroundings where it is almost impossible to use any of the usual forms of furnace hot-water boilers.

It frequently happens that a small conservatory is attached to a house where no provision has been made for a furnace and flue for warming the same, and where one could not be constructed without greatly disfiguring the appearance of the house. In such a case as this, Weeks's fireplace boiler would be found of the utmost value. It could be fixed in the fireplace of the hall or some adjacent room, where it would warm the apartment by means of an open fire, and could be connected with a coil of pipes in the conservatory, and so warm that structure at the same time; or it could be fixed in any of the rooms and connected with coils in the hall and staircase, so as to keep the whole house comfortably warm and dry. It will be seen, on reference to the drawing, that the boiler presents the appearance of an ordinary register stove, and possesses all the advan-

tages of an open fire. It differs, however, from a register stove in that the bottom, back, and sides of the grate are composed of hollow waterbars

attention. At the bottom of the doors will be seen a small hit-and-miss ventilator, by means of which the draught can be regulated, only just

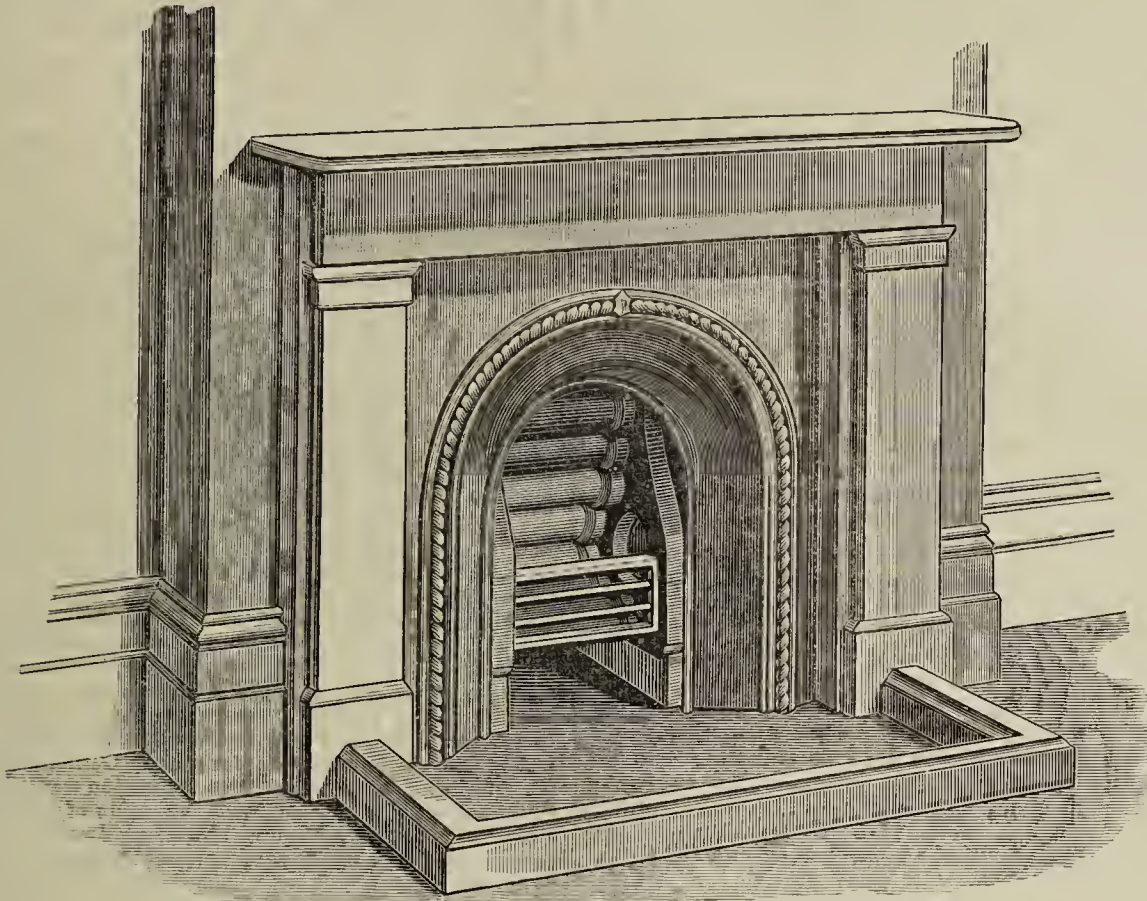


Fig. 76.—FIREPLACE BOILER, OPEN.

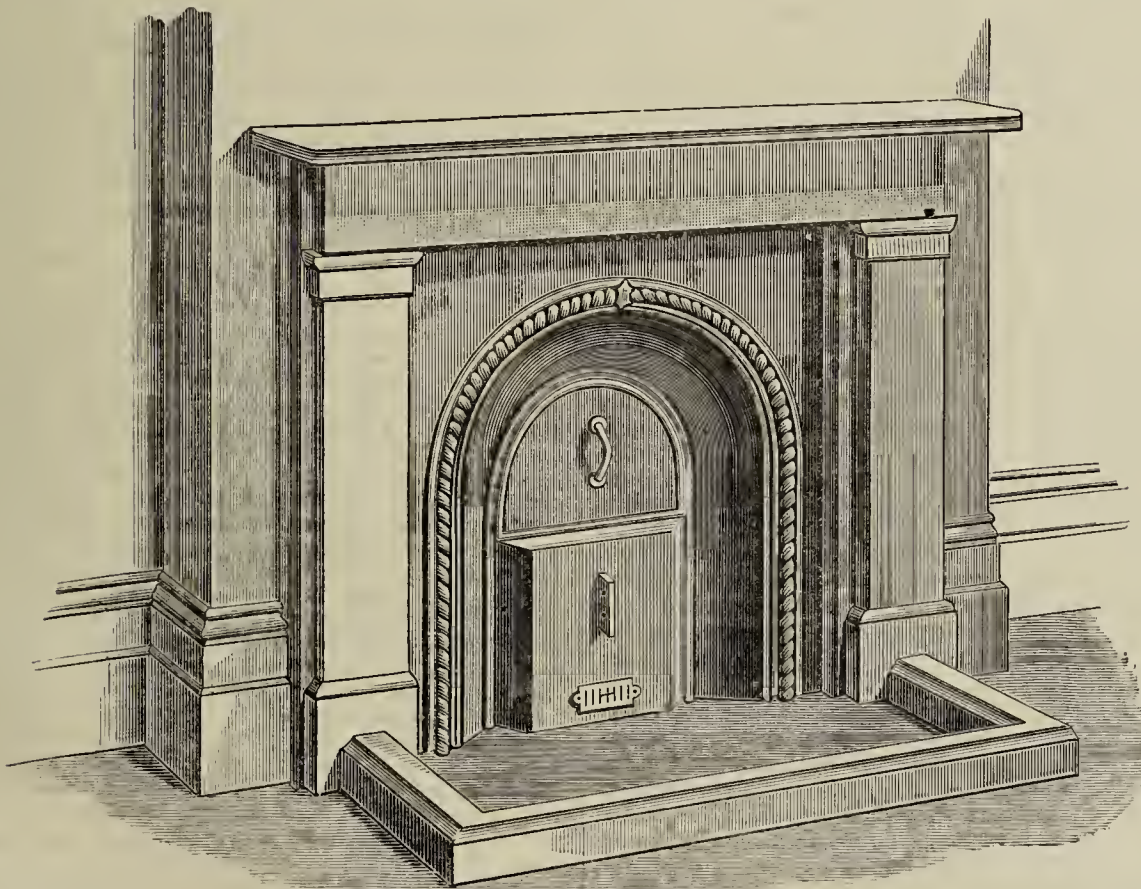


Fig. 77.—FIREPLACE BOILER, CLOSED.

and chambers, thus forming an excellent tubular hot-water boiler. Fig. 76 shows the appearance presented by the stove during the daytime when being used as an open fireplace. Fig. 77 shows the appearance when the fire is banked up and the fireplace closed for the night. When closed up in this manner the fire will burn for a great number of hours without

sufficient air being admitted to the fire as is necessary to support combustion.

The fuel used is anthracite coal, the stove is a slow-combustion one, and the economy is very great, as the same fire warms two or more apartments at the same time and at one expense.

LATE AND FORCED CHRYSANTHEMUMS.

LATE Chrysanthemums as producers of useful flowers for cutting for home use have not yet attained the position they ought to occupy in private gardens. For several years past I have had good Chrysanthemums till late in spring, and last year we had them particularly fine, and cut and sent blooms regularly to London three times a week up to the beginning of June, at which time the plants were destroyed. The blooms all through were quite as good as those produced under ordinary cultivation at the usual period of flowering. Many of your readers who would like a supply of these most useful flowers for as long a period as possible, may be glad to have their attention directed to the subject at this time, when in many gardens Chrysanthemums are getting over, and that stage when it is necessary to take the plants in hand in order to succeed with them. However, before proceeding to particularise this method of securing a long-continued supply of bloom it may be convenient to say something first of what can be effected by retarding. It is surprising to find in so many gardens that no pains are taken to lengthen the Chrysanthemum season by the simple method of retarding a selected number of plants.

I send with this note buds from late plants of Ethel, Virginal, Fair Maid of Guernsey, Mrs. C. Carey, Peter the Great, L'Adorable, Guernsey Nugget, Miss Margaret, Salteri, La Favorite, Julie Lagravère, Madame Sentir, M. Astorg, and Calliope as examples of what may be effected in even such an early season as the present in keeping plants back from blooming until much beyond their usual time. In the case of some of these, the result desired has been accomplished by not allowing the buds usually taken to develop, but by taking those shoots which come on after the former have been destroyed; and others are, of course, simply retarded by keeping the plants out late and when housed by keeping them quite cool, and it may be said here that the nature of the structure in which the plants are placed has much to do in keeping them back. A house with a south aspect is the worst possible for this purpose. A flat lean-to with a west aspect does well, or an airy span-roof running north and south. In any case where flowers are not wanted for cutting there need be no difficulty in preserving the blooms on the plants for a long period. Such as those we have would hold out till the middle of February, and that is putting it at the earliest date, and the month of March would most likely be the correct time. But as we grow plants primarily for flowers, they will be used long before either date, and in order to have a later supply we are compelled to give a certain number of plants a forcing treatment. Indeed, all buds are the better for a little heat after the shortest day, as they open so much finer and purer and there is no loss from petals damping. But the principle of forcing is different from that of merely giving a little heat in order to open one set of buds; for it must be continuous, not only in opening buds, but in producing fresh buds and forwarding those in intermediate stages on the same plants.

It need hardly be said that all plants intended for this forcing must be, as a primary condition, in strong vigorous health, with foliage intact and roots in a condition of activity. That being understood, we proceed to say that there are at least four points of importance which require the attention of the cultivator. Active roots need a constant supply of food, and that is most easily supplied by surface manurings at stated intervals; ours are dressed weekly, and it is found that this suits them admirably. But dressings of manure are worthless unless the soil in which the roots are growing is kept in a uniform condition as to moisture, and therefore dryness at the root is inimical to the production of good flowers, and must be guarded against in order to ensure success. But, further, neither manure nor water will be of service to the roots unless the temperature allowed the plants be sufficiently high to keep the foliage and young growths growing healthily all along, and thereby establishing an action and reaction betwixt the roots and the foliage. And, lastly, the flowers should be cut when ready. The flowers last longer when cut in a young state, and they ease the plants in some degree, though not in a large one. Heat should be given at the latest about the first week in January, and should be discontinued as the days lengthen and natural heat increases, but the plants must be kept under glass till the last to secure purity in the flowers. Mildew, if it appears, is dissipated by dusting with sulphur, and green fly, which may become troublesome and destructive to the value of the flowers, is best kept at bay by not too heavy fumigation with tobacco. The best I have tried for forcing is Fair Maid of Guernsey, but Mrs. C. Carey is also very good, and this year, owing to the strong liking shown for bronze and brown shades, a few of these sorts will be experimented with.

About this time also old healthy plants of Madame C. Desgranges may be taken in hand, repotted into a larger size, and in a few weeks introduced into a temperature not exceeding 55°, when under fairly good attention flowers should be ready for cutting early in summer. It is much the best plan, however, not to allow these plants to rest to keep them on after their flowering period is past. This is the best type of a continuous flowering variety that I know.—B.

[The sprays sent were in the best of health, and the buds in the stage usually seen towards the end of September and beginning of October.]

GOGERDDAN, CARDIGANSHIRE.

THE residence of Sir Pryse Pryse, Bart., is situated about three miles east of Aberystwyth. The nearest railway station is Bow Street, on the Cambrian line, distance from the gardens half a mile. They are well worthy of a visit by anyone interested in a well-kept garden. They are surrounded on the east and south by some of the most picturesque scenery for which Wales is noted. To the west lies Cardigan Bay some two miles distant, and in the distance is Barmouth, Towyn, and Aberdovey, backed up by the mountains of Merionethshire, so well known to tourists in these parts. My visit, on November 29th, was a hurried one, and it was not the best time of the year to see gardens at their best, but we found something very pleasing inside, of which I will give a few brief notes. After being introduced to Mr. Vearey, the gardener, by the friend who accompanied me, we entered a span-roof house with a partition in the middle, used for Melons and Cucumbers in the summer, but at the time of my visit filled with very useful flowering plants. In one of these houses I noticed Eucharises with some capital spikes of bloom on, and free from that dreaded disease so prevalent in some places. There were some healthy Gardenias in pots with promising buds, Allamanda Hendersoni, flowering profusely, trained under the roof. A good number of Bouvardias were just past their best. Summer-struck plants of Poinsettias and Euphorbia jacquiniæflora, Gesnerias, a few Orchids, and other useful plants too numerous to mention were also included. A third house contained a miscellaneous collection of greenhouse plants, capital plants of Richardia ethiopica, also some dwarf well-grown Chrysanthemums from 2 to 4 feet high, grown on the late cut-down system. Winter-flowering Begonias, Salvias, and Cypripedium insigne, with some good blooms on, winter-flowering Epacris, and a host of other useful plants made up a most brilliant display. Adjoining this house is the plant stove, a lofty, well made house, and was well furnished with a variety of flowering and foliage plants, including some well grown specimen Crotons, but short of colour, owing, I have no doubt, to the shade required to protect other plants. Croton Weismanni was very well coloured on account of its standing in a more favoured position. There were some capital Palms in this house, and useful Dracænas, Crotons, Dieffenbachias, and other plants in 5 and 6-inch pots for decorative purposes. A few Calanthes, with their graceful spikes of flower rising above the foliage plants, gave a very pleasing effect. The roof was furnished with choice stove creepers; the greenhouses contained the finest Primulas, double and single, I have seen for some time, showing capital trusses of bloom and the foliage perfect.

We next inspected a range of lean-to vineries. The Vines, I was informed had borne excellent crops this season, and by the appearance of the wood fully bore out the good accounts given of them. While passing through this range I noticed some good Cinerarias, well grown plants, and promising well for the future. A span-roofed vinery, used as an early house, was filled at the above date with Pelargoniums, and if they go on as satisfactory as they have started, will give a good account towards May. I noticed some healthy Lachenalias on a shelf close to the glass. It is seldom this pretty dwarf bulbous plant is seen in private places, why I am at a loss to know. I am sure it deserves to be more cultivated. The kitchen garden is well stocked with fruit trees, and in another kitchen garden are two capital ranges of Peach houses built against the wall dividing the two gardens. They are from 80 to 90 feet long each range. The Peach trees are trained against the wall and look well for next year. Tomatoes are grown along the front of the Peach houses inside in summer. We took a bird's eye view of the pleasure grounds, and promised to call again to see the outside beauty of the gardens, and I am sure it will be worth a visit to in the proper season. Mr. Vearey deserves great credit for the general condition of the garden. I noticed on our way to Aberystwyth, fully exposed to the sea breeze, Veronicas, Fuschias, Marigolds, Stocks, and Tropæolums in full bloom not half a mile from the sea, looking quite as fresh as flowers do in September.—W. ROBERTS, *Llwyngwern Hall, Machynlleth.*

SOME EASILY FORCED FLOWERS.

Now that the Chrysanthemums are over, and a great blank has occurred amongst the flowers in our greenhouses and conservatories, a general desire will exist to begin forcing and have a good display of flowers again as soon as possible. Where forcing houses exist this will be a very easy matter, but unfortunately in the majority of cases the appliances for forcing flowers are very limited, and this difficulty has generally to be tidied over by the cultivator selecting easily forced plants to deal with. This I can testify is a good way of securing a supply of flowers, and although there may be some choice plants that cannot be taken in hand, the easily forced ones are a large class, and prove

highly satisfactory. Amongst Azaleas *A. amoena* comes first, as it almost blooms naturally in December and January, when the treatment received in summer has been such as to induce it to mature its growths early in the autumn. The flowers are small—the smallest of all the Azaleas—but they are exceedingly bright rosy purple in colour, and appear in such profusion that the plant at once becomes an object of great attraction. The next easiest forced Azalea is *A. indica alba*, and as the flowers of it are of the purest white they are most valuable. This variety is very free in growth, and surpasses all the large-flowering varieties in its free and early flowering qualities. It may be forced into full bloom readily by Christmas.

Calla æthiopica is very easily induced to flower in any of the winter months. We have some scores of them in bloom at the present time, and the massive pure white spathes are admired by all. If the plants have developed freely during the summer an intermediate temperature will induce them to throw up the buds and open their blossoms in three weeks. We have generally had those in bloom at Easter, as they are well known at that season, but we find them so highly valued at Christmas and during the shortest days that we now try to have them in full bloom then, as effective flowers are more scarce now than at Easter.

The Abutilons, although not so showy as many other flowers, are easily induced to flower at midwinter by placing them in a temperature of 60°, and when the blooms are gathered and tied up in little clusters together they are excellent for placing in small glasses. When the petals are turned back the flower assumes a curious reflexed appearance, and can hardly be recognised as an Abutilon.

The old Double White Camellia is one of the easiest to get into bloom by Christmas, as when it makes its growth early in the season, and the flower buds become prominent by October, the blooms will develop in December without any forcing; in fact they will not bear forcing, as much fire heat will cause the buds to fall off before opening. A temperature from 40° to 55° is in their favour, and plenty of water at the root and a slight syringing overhead on fine days softens the buds and induces the massive and delicate blooms to open in a delightful manner.

Poinsettias are not greenhouse plants compared with Camellias, but their time of blooming is late in December, and when grown in a cold frame in summer, which they may be readily, there is no difficulty in getting them to develop their showy red heads in a temperature of 55° or 60° in December. We regard them as an easily managed and most useful class, and grow them extensively annually. The Epiphyllums are another class easily flowered in winter. They are amongst the easiest managed of all plants, as if they are only allowed to make a little growth in any of the spring months the flower buds are sure to appear in early winter, and they will blossom with great freedom in January in a temperature of 60°. Mere twigs of plants produce many blooms, and large specimens are beautifully draped with them. They are very ornamental as seen on the plants, and they may be cut and used in glasses at all times. The *Habrothamnus*, especially *H. elegans*, is a capital winter-flowering plant, as it produces a cluster of bright blooms at the end of every shoot, and they never fail to appear in January at the latest in a temperature of 55°. *Luculia gratissima* resembles a *Hydrangea* in the size and form of its flower clusters. It is delicate pink in colour, and so deliciously fragrant that all who come near it are at once charmed. It will open its blooms in the conservatory in December as freely as *Primroses* in a hedgerow in May, and it merits more extensive cultivation than it at present receives. There is some impression that it is difficult to propagate and bad to grow. The first is partially true; the latter false.—M. M.

THE ORCHIDS OF CEYLON.

A FRIEND writing from home tells us that on the occasion of a recent visit to the magnificent Botanical Gardens at Kew he was struck by observing that there was an absence in the houses there devoted to Orchids of many specimens with which he had become acquainted while resident in Ceylon. So much attention is now directed—not by botanists alone—but by home floriculturists to this family of the plant world, that it is certainly desirable some effort should be made to have every member that can be discovered represented in the national collection.

Not very many years back, while travelling through the dense forest towards Batticaloa, the gentleman already referred to saw, for the first time, forms of Orchids which had to that time been altogether unknown to him. Of one of these varieties he sent specimens to Kew, where it was pronounced to be of a new kind, and was gladly accepted and propagated. There is no part of Ceylon where Orchids grow in such profusion, or in such variety, as they do on the forest trees in the neighbourhood of the Rugam tank, only a few miles distant from Batticaloa. Doubtless great havoc has been made thereabouts by the clearing of the land recently brought under cultivation through the execution of the irrigation works, but it is exceedingly improbable that having once flourished in the district there should not remain many undisturbed spots where these lovely eccentricities of Nature do still abound. We are asked to suggest that those whose business or pleasure take them into the recesses of the forests we have referred to, or to others equally favourable and remote, should endeavour to secure specimen plants of any varieties which may appear to be new or rare. Their value as regards their transportation to Kew can be determined by a reference to the savants of Peradeniya; but so great is the production and wealth of Orchid life in the forests between the foot of the hilly ranges and the Batticaloa lake, that—notwithstanding all that has been done by the plant collectors of Dr. Thwaites and Dr. Trimen—it is just possible that careful search will reveal varieties which

may not yet have been named or catalogued. In the paper which Dr. Trimen read before the local branch of the Royal Asiatic Society a few months ago, he mentioned that there were in Ceylon of Orchids 155 species, of which seventy-four species (or 47·7 per cent) were endemic, that is, Orchids peculiar to Ceylon. It ought to be an object of interest and ambition—apart from profit—with travellers, sportsmen, and others, to add to this list.

The wonderful and endless changes in form and colour which the family of the Orchidæ present to us are, to a great extent, the results of hybridism. This, which is artificially induced in the greenhouses of England, may be presumed to go on naturally among surroundings specially favourable to growth such as are presented in favourite localities in Ceylon. Now in England it is no uncommon thing for 60 or 70 guineas to be paid for a single new hybrid of special beauty or eccentricity in form or colour. It might prove far from unremunerative, therefore, for search to be made in the favourite habitat of the plants for such hybridism as may have occurred naturally. It may not be far-fetched to assume that, by encouraging hybridism in such a vast storehouse of the plants as we possess here in Ceylon, a new and paying form of industry might be opened out. We are all accustomed to laugh at the Tulip mania, which wrought, through the speculation to which it gave rise, so much ruin among our countrymen in the time of William and Mary, and again also at that for Crotons, favourite kinds of which sold in Java a very few years ago for from £10 to £20 cash. But the craze for Orchids is scarcely less strong in its present development than was that for the flashy bulb of the Hollanders, and more permanent than that for Crotons could be. If, as we learn is the case, any new and strange variety of Orchids bring prices running up almost to 100 guineas the plant, who can pretend to say whether our eastern forests might not prove well worth a careful examination? There, at all events, the plants abound among conditions most fostering to their growth. A little art employed to aid Nature, and there need be no limit to the fantastic forms and brilliant colours which a skilful operator might produce, and if he can bring these under the notice of the connoisseur at home, he will scarcely fail to reap the fitting pecuniary reward of his labour and skill.—(*The Tropical Agriculturist*.)



KITCHEN GARDEN.

DIGGING AND TRENCHING.—Some cultivators who only look on their vegetable garden as a department of third or fourth-rate importance are not particular as to when they do their digging, and the majority of the ground is allowed to remain undug until a day or sometimes an hour or two before the crops are sown or planted; but such kitchen gardening as this is never profitable, and those who use the crops fail completely to secure the best qualities from the vegetables. Those, however, who value good vegetables and know that they cannot be produced without good cultivation place much importance on preparing the soil, and winter digging and trenching play an important part in this, and the whole of the vacant quarters should be dug or trenched at once. Where the soil has only been turned on the surface and the subsoil is "good trenching ought to be done to the depth of 2 feet, and some of the bottom soil ought to be mixed with the surface material. We do not, however, approve of bringing up a poor subsoil. In trenching or digging always take a wide opening cut at one end before beginning, as the soil can never be properly turned over without this. Rough vegetable refuse may be placed at the bottom of each trench, and any littery matter may be dug in, but good short manure should be reserved until nearer cropping time. In all cases the surface soil should be left as rough as possible, as the frosty air in winter is an excellent fertiliser when it can penetrate freely.

PARSLEY.—It is now this useful subject is apt to fail, and probably nothing in the kitchen garden will be so much missed; but no labour should be considered too much to save it, and a little attention now may give valuable results throughout the winter. Do not try to lift any of the plants, as they will not bear transplanting at this time, but protect them when necessary where they grow. Pick the dead leaves off and dry them for seasoning. Bend some sticks over the rows hoop-fashion, and in the time of frost or snow place some old mats or some other protection over them. Do not put any covering over plants in frames or under hand-lights until protection is actually required, and always remove it when the weather is favourable.

YOUNG CAULIFLOWER PLANTS.—The season is now trying on these, and the plants are inclined to become spotted and yellow on the lower leaves. This is not a good sign, and is generally caused by keeping them too close. So long as frost and excessive moisture is kept from them that is all that is required, and when the weather is fine admit air freely. During severe frost it is necessary to cover the glass at night, but always take the covering off during the day, as allowing it to remain on blanches the plants and makes them very tender, a condition to be avoided above everything.

STORED ROOTS.—The whole of these should be looked over and all that show the slightest sign of decay removed. It is now that a few diseased ones will quickly contaminate a large number. Some of the softer-growing Onions have begun to sprout a little and the whole of them

require sorting. Early Potatoes are sprouting a little and must be kept very cool. Where tubers were stored in a wet state turn them over, expose them to the air on a dry windy day, and look out for bad ones. Carrots are sprouting a little and all growth should be rubbed off them. Do not allow any Potatoes intended for eating to become green, but seed tubers need not be kept in the dark. Keep all cool, as a temperature from 35° to 45° is suitable for all stored roots.

TOMATO PLANTS.—The late autumn plants make but slow progress now; indeed, they do not pay for their place, and we are just about cutting the fruit and throwing them away. The fruit that is unripe will be hung in a warm house to mature. Where cuttings were not secured a month or two ago they may be saved from the plants and be put in now. Those rooted in small pots must not be allowed to suffer for want of water, and they should be kept in the light and near the glass. A greenhouse temperature will keep them in good health.

MUSTARD AND CRESS—It is now these are becoming more valuable, as they can be grown freely from seed, and when other salad plants are scarce these may be used in many ways. Half a dozen shallow boxes and pans will keep up a constant supply, as once every four or five days is often enough to sow the seed, and as the plants are ready for cutting in ten or twelve days after sowing a succession may be kept up with very little attention. A depth of 2 inches or 3 inches is sufficient soil, but it should be made very firm and the seed sown on the surface without covering, and if placed in a temperature of 65° or 70° growth will be rapid and satisfactory. In cutting Mustard or Cress care should be taken that the roots are not taken, as it is often a difficult matter to have all the grit washed out.

LETTUCE AND ENDIVE.—These will not bear frost and must be protected. The plan recommended for protecting Parsley answers very well for them, and quantities may be lifted with good balls and placed in frames as closely as possible. Damp is the greatest enemy of these, and careful ventilating and protecting must be followed to prevent their suffering in this way.

FRUIT FORCING.

CUCUMBERS—The weather has necessitated much fire heat during the past few weeks, but as there have been some bright intervals during the day the growth has not suffered like it does when the days are cold and the sun obscured. Light is very important in all forcing operations, especially in winter, and, therefore, the glass should be kept as clean as possible both inside and out. Earth over the roots as they show at the ridges or billocks, using warm sweet soil and not very wet. For the surface use some horse droppings that have been spread in a shed a few days, as these are preferable to liquid manure at this season, but in limited borders or pots and boxes liquid manure will be necessary. It must not be given too strong nor too often, and always tepid. Damping in the morning and in the afternoon of fine days will be sufficient, and water should not be given until the soil is getting dry, then afford a soaking. Be careful not to overcrop the plants, and do not allow the fruits to hang too long; they keep fresh several days after being cut if the heels are inserted in saucers of water in a cool place but safe from frost. Remove superfluous fruits as they appear, also tendrils and staminate blossoms, unless they are for fertilisation. Tie in the growths as necessary; stopping and thinning will not be much needed, but it must not be neglected, as crowding cannot be allowed without evil consequences. Red spider is sure to follow a period of sharp firing. Sponging with a solution of soft-soap 2 ozs. to the gallon is the surest, and all things considered the safest remedy if only it be taken in time. Mildew can be destroyed by flour of sulphur, dusting it on the affected parts, and the atmosphere should be kept drier. Green and black aphides are eradicated by dusting with tobacco powder, or fumigation on two or more consecutive evenings. Too much will cause irreparable injury, as the foliage at this time of year is thin and soon injured. The fumigation must, therefore, only be moderate.

FIGS.—*Modes of Growing.*—There are two modes of cultivating the Fig—viz., in pots and planted out. The former is mainly practised for affording early fruit and the latter for successional supplies. In former years one house of Figs only was seen in the largest establishments, but of late years the demand for this wholesome and delicious fruit has increased to such an extent that a demand prevails for good examples even in the shops from April to November. For the early supply experience has proved the advantage of the pot as compared with the planted-out system. This may be in a great measure due to the practice pursued, but the fact is the Fig becomes more fruitful the older it is, and the restriction of the roots to pots or feeding them in a small area contributes to their fertility—much more so than is the case with trees planted out and having a mass of soil to grow in. There are some peculiarities of each method, which may be explained. Trees in pots forced early for a number of years become more fruitful as they advance in age, and they commence growth at the usual time of starting comes round in a lower temperature than trees that have not been subjected to the process. This shows the necessity of trees intended for early forcing being started early in the previous season, so as to make and perfect a growth, and have time for rest before starting. In some instances trees are obtained that cannot afterwards be accommodated. They become too large for the house. To keep them the plants are confined to small pots and the size of each tree is reduced. This is not desirable, because not profitable method. The proper method is to reduce the number of the trees by removing the least appreciated varieties or duplicates. This will result in as much larger fruit of finer quality than where the whole of the trees are retained. The Fig is a light and heat-loving tree, therefore those which are forced

through the darkest part of the year must not be crowded. For pots no Fig equals Brown Turkey; variety being wanted White Marseilles may be added. Trees in pots do much better when afforded bottom heat, the roots being allowed to extend outside the pots and renewed annually. This with copious supplies of liquid manure and judicious thinning of the fruit result satisfactorily.

Planted-out trees are much more luxuriant and have longer-jointed wood than trees in pots. This arises mainly from their having a much larger space to grow in. A border is made deep, wide, and rich. The wood must be stout, short-jointed, hard, fruitful; the growth must be sturdy, the foliage thick, and to insure this the border must be firm, and the leaves have all the light practicable. Instead of a border the widths of the house of rich loam, made richer by surface dressings, the border should be narrow, and composed of materials that, whilst affording a favourable rooting medium, contain siliceous and calcareous matter. A 3-feet width of border is ample to begin with, and 6 feet for the largest tree. A foot of drainage should be provided, having a drain under (unless the strata be gravel or other natural drainage) to carry off superfluous water. The drainage should have a thin layer of lime rubbish over it. The soil may consist of turfy loam of medium texture, and if not off a limestone formation add a sixth of marl dried and broken up fine, a fifth part of old mortar rubbish, one-fourth of road scrapings, and a twentieth of crushed bones. If the loam is inclined to clay omit the marl and add road scrapings; if sandy, omit the road scrapings and increase the marl. Incorporate well together, and make up firmly when moderately dry, allowing a few inches extra height for settling. Trees with single stems of a few inches height are the only suitable ones. They will be in pots. Soak, and wash away all the soil. Disentangle the roots, and spread them out evenly, covering about 3 inches with fine soil. Give a thorough soaking with tepid water. When soaked in and become dry so as to hear the foot without clogging, tread firmly, and mulch with a couple of inches thickness of short manure. Fan training is most suitable. The house must be light, and have top and bottom ventilation. The shoots should be trained about 12 inches from the glass. In lean-to's we have seen trees planted at the back and trained down the roof. This insures the finest fruit, which in everything is borne by the terminals, and the downward training causes the fruit to appear lower down the shoots than by up training; besides, the points of the shoots are pointing to, not from the light. It is the way to get the finest Figs, especially of the shy fruiting sorts, such as Black Genoa, Bordeaux, Brunswick, Castle Kennedy, Grosse Monstruense de Lipari, and Violet Grosse. These have all large fruit. For ordinary culture the finest Fig is Brown Turkey. If another is wanted, Negro Largo, and a white, White Marseilles. They are good for pots or planting out, and alike suitable for early, midseason, or late.

PLANT HOUSES.

Chrysanthemums.—Where large exhibition blooms are required strong root suckers must be taken and inserted singly in small pots as they can be obtained. It is much better to place them singly in pots than a number in each pot, for a check is given when these are separated for potting. A little sand should be inserted in the centre for the base of the cutting to rest upon. They will root freely enough at this season of the year in a vinery or Peach house just started; in fact, in any structure that is kept close. The cooler the structure in which they are rooted the less liable are they to be drawn up weakly. This must be avoided, for success in a very large measure depends upon a strong plant to commence with. Directly they are rooted harden and grow them under cool conditions. For decorative purposes cuttings need not be rooted before February or March, and for this purpose, if the old stools are retained, a large space is taken up if the plants are in 10-inch pots. To save room the cuttings for these plants are rooted now, the same as those required for large blooms, but they are inserted together in 5 and 6-inch pots, and then topped and re-rooted at the desired time. By this method stronger plants can be had for a start than if the old stools are retained and allowed to grow until February. A few stocks of each should be kept until the necessary number of plants for another season has been insured. Late varieties, such as Princess of Teck, Fair Maid of Guernsey, Princess Louise, and others, should have abundance of air on all favourable occasions, merely excluding frost from them, for they are coming on too fast, being naturally early this season.

Violets.—Those planted in cold frames must have every attention, giving air freely on all favourable occasions. In damp localities it is often difficult to keep the flower buds and foliage from damping. If the soil is moderately moist place between the plants a thin covering of cocoanut fibre refuse, which arrests evaporation, and insures the plants from damping to a large extent. If flowers are required, keep a good lining of hot litter and leaves round one or more of the frames, and if mild or open weather continues, a good supply of blooms will be produced. In case of frost the frame should be matted, so that frost can be excluded from the plants. Marie Louise is a very continuous bloomer, and undoubtedly the best for yielding autumn and winter flowers; but unfortunately they are not very fragrant when produced during the dark sunless days of winter.

Ghent Azaleas.—A good stock of these, as well as Rhododendrons, should be lifted before severe weather sets in. Pot and plunge them outside, protecting the pots and surface of the soil with litter, where they will be perfectly safe until it is necessary to introduce them into the forcing house. Lilacs, Guelder Roses, Roses, and similar plants for forcing will be perfectly safe, provided they are carefully protected with litter. It is necessary to protect the pots; the plants will bear moderately severe frost without the slightest injury.

Cinerarias and Calceolarias.—Remove these from cold frames to some cool airy place where they can be protected from frost. This is necessary, especially in damp localities, for it is impossible to keep the foliage from damping in cold frames, while in other localities they will be perfectly safe, provided they are protected from frost. If these plants are housed they must not be stood upon a dry open stage directly over hot-water pipes, for the dry heat arising from them will soon prove ruinous. They should stand upon a moist base and as little artificial heat as possible applied, merely sufficient to exclude frost and damp.

THE BEE-KEEPER.

SEASONABLE NOTES.

THE last sad days of another year are gliding swiftly on; a new year will soon be ushered in; the grave and the cradle, old age and youth, the old year and the new, will meet in the midst of cold bleak winter, soon to part for ever. Profit and loss, joy and sadness, success and failure have been experienced by many in the dying year, who are now able to look back upon their failure softened by time, or their success mellowed and enhanced by distance, and learn the lessons which can alone be taught by experience. A season more favourable than we could at first expect—a spring long and cold, and a summer of varied temperature, have been succeeded by a mild warm autumn which will materially assist the bees to tide over the winter which may naturally be expected in real earnest before many weeks have elapsed.

In Cheshire the season has been a good one; those bee-keepers who were careful last autumn to prepare their stocks had the pleasure of seeing thousands of bees busily at work in supers; on the other hand, where winter precautions were neglected but poor results have been obtained. Without proper care in the autumn months it is unreasonable to expect any real success in the following season. True, profit is occasionally gained from stocks upon which but very little care is bestowed, but when stocks are properly managed we know that, given a fairly good season, a surplus will be taken from every stock. In my own apiary this season a nett profit of £1 15s. has been obtained from each stock. All have been managed on the non-swarmer system with complete success. The honey has been taken almost entirely in 1-lb. sections. Foundation has been freely used. No midrib has been discovered in any single section, the demand has exceeded the supply, and already a very large order has been taken for section honey next season, but with the condition annexed that the honey must be produced in my own apiary. It has always been my care to supply only the finest honey in the best condition, and the result is that the trouble once experienced in selling honey has been succeeded by a demand in excess of what it is possible for me to supply. In other counties the season appears to have been very variable, and even in the same district a grand surplus has been obtained in one apiary and nothing in the next.

A few weeks ago I was informed by a bee-keeper in my own locality, whose bees are placed not more than half a mile from my own stocks, that there "had been no honey in the flowers this year." I took him and showed him some 200 one-pound sections, the produce of three stocks, and he began to think that after all the flowers were not to blame nor yet the bees, but his own management. This autumn, after giving him full instructions and doing all in my power to persuade him to change his methods, he has still persisted in leaving his bees alone, and from what I have seen of his stocks it is evident that his chance of surplus next year is infinitesimal. Stocks are now in grand condition for wintering. Frame hives are carefully packed up with porous quilts, and section racks filled with cork dust on the top. The bees are strong in numbers. The young have had opportunities for cleansing flights, and all is prepared for the frost and snow and bleak paralyzing winds of winter. The hives now commonly in use seem to lend themselves very readily to the old principle revived in the new Heddon hive, but it will be

better in some future number to point out in what points the Heddon hive resembles and in what it differs from hives already in use in this country. All the attention now necessary in apiaries managed upon the system continually advocated in these columns is to keep all entrances clear and open, and when snow is on the ground to either shade or shade and close the entrance. My own preference is for shading and closing every entrance with perforated zinc, taking care to open each entrance at once upon the disappearance of the snow.

Preparations for the spring ought soon to be made and everything be got ready for the honey flow of 1887. We must decide upon our systems of management and must prepare accordingly. We must remember that the competition becomes keener every year, and that while the best honey is readily saleable at a good price, inferior honey is scarcely saleable at all.—FELIX.

FEEDING BEES—MY WAY OF DOING IT.

WHILE an article is more appropriate a little in advance of the time required for its use, yet I am ready to admit that it is often the case that an article on some phase in bee-keeping, appearing just after a person as abrid a trial of that very same thing, sinks deeper into the memory and does more good than it would had it come at the appropriate time. As many of us here at the east have just passed through a siege of feeding for winter, of course the matter is still fresh in our minds, and anxiety regarding this matter still exist, so I will comply with the request, hoping that even those not specially interested may find something of interest in it.

In the first place I wish to say that it is always well to look out in advance for times of scarcity, and during the honey-flow lay aside a good supply of nice, sealed, well-ripened honey in frames for use in the fall in supplying any deficient colonies which we may have. I know no better way of feeding than this, hence I always try to keep a supply of such combs on hand. If they are not needed the honey can be just as well extracted from them (by placing them in a room kept at 100° for four hours before extracting) in December as in August, so that no loss need occur if such combs are not used for feeding. On the contrary a gain is made, for the bee-keeper's time is not nearly so valuable at this season of the year. If, however, no such combs of honey had been saved we must resort to sugar feeding unless we have plenty of extracted honey, which is not supposable, for certainly it is a great waste of time to extract honey for the purpose of feeding it back again.

There are two ways of feeding bees with sugar, one of which is to make the sugar into candy, the cakes weighing from 1 lb. to 10 lbs., according to the desire of the apiarist. I generally make them of about 5 lbs. each, and find it a very convenient size. To best get it in the form I wish it, I make a frame of the size and height I wish, which is usually about 8 inches square and 3 inches high. I now make little mounds of sawdust on a bench, raising them about 1 inch high at the highest point. Over this mound is placed a piece of newspaper, and on the paper the frame which is to receive the candy. This frame should be held secure by a weight or some other means, so it cannot raise up and let the candy run under it.

Having the candy boiled to the right consistency, which is known by taking out a little and stirring it whilst the rest is partially drawn from the fire so it will not cook too fast while you are testing it, so as to get the start of you, stir it until it is as thick as it will run, when it is rapidly poured into the frames and left until cold. Now lift the frame of candy and pull off the paper from the bottom, when it is ready to put on the hive, so placing it that the centre of the cluster of bees will come into the middle of the convex place in your candy, for this place was made for the bees to cluster in so that as many as possible can reach the candy. In this way the moisture from the bees during cold nights collects on the candy, which moistens it to such an extent that the bees can lick it up, thus giving them a supply of food. I find, however, that during an extremely cold spell, if there is nothing but candy in the hive, the bees may fail to cluster on it and starve, therefore I use this only in connection with a few pounds of honey in the hive, when it always works well. I especially like such cakes of candy in February and March, when there is a prospect of the bees getting short of stores.

The second plan, and the preferable one, is to make the sugar into a syrup which is given to the bees during the warm days of September and October, so that they can store it in the combs and cap it over the same as honey. To make the syrup I find the following formula the best, after trying nearly all the different ways recommended—Put 15 lbs. of water in a vessel that will hold 24 quarts, and boil it. When boiling, slowly pour in 30 lbs. of granulated sugar, stirring it as it is poured in, so it will mostly dissolve instead of settling to the bottom and burning. Now boil it again, and skim it if impurities arise, when it is to be set from the fire and 5 lbs. of well ripened honey stirred in. This gives 50 lbs. of feed, which will be of as much value to the bees as 50 lbs. of honey. The honey is put in to prevent crystallisation, and with me proves far superior to vinegar or cream of tartar. As soon as the syrup is cool enough so that you can hold the hand on the outside of the tin dish containing the syrup it is ready for the bees. This feeding syrup warm has especial

advantage where the nights are cool, and by having it thus warm quite satisfactory work at feeding can be performed as late as November.

Where a person has not the feeders or the time to prepare them, the best thing to use for such a purpose is a common milk pan. Set this on the top of the hive and fill it with syrup, or give the desired amount, after which pull off two or three handfuls of grass and scatter it over the syrup for a float, or use shavings or corn cobs as is preferred. The trouble with these latter is that they soak up much of the syrup, while the former does not. Set up a small piece of board or a chip against the side of the pan so that the bees can easily climb over to the feed, when a hole is to be opened to the hive below by turning up one corner of the quilt or removing a slat in the honey board for the bees to come up through. Now scatter a few drops of food down through the hole and over the chip, and put on the cover, seeing that the joints are all tight, so that no robber bees can get in. However, if a person has time at his command feeders made as follows will prove much more satisfactory; I have used such for four years, and never had anything in the feeder line which pleased me so well, and I have tried nearly all the feeders in use:—

Get out two pieces of wood, having them the size of your frame except less three-quarters of an inch at the top, and one-quarter of an inch thick. Nail, those on each side of a frame, fitting the joints together with white lead so as to prevent leaking. If after making hot beeswax is run all over the inside there is no possibility of leaking, and all soaking of the feed in the wood is prevented also. Bore a hole in the top bar to the feeder for a funnel, and your feeder is ready to be hung in the hive the same as a frame, where it can be left when not in use if desired.

To feed, cut a little slit in the quilt to correspond with the hole in the top-bar of the feeder through which the point of the funnel is to be inserted and the food poured in. When the funnel is removed the slit in the quilt closes up so that no bees can get out to annoy the operator. As the feeder is only an inch wide there is no need of a float, as the bees can easily reach either side, so none stick fast or drown. By using two or more feeders to a hive the winter supply can be given at once, or the bees can be fed for stimulation as slowly as is desired.—G. M. DOOLITTLE in *The American Bee Journal*.)

THE WEATHER.—While all round have been experiencing severe storms, we have been enjoying perfectly calm weather. There have been two singular phenomena, the one a heavy fall of snow early last week, which lasted only five minutes but measured 2 inches deep. The other was an abnormally low barometer much lower than was ever known during the memory of men.—A LANARKSHIRE BEE-KEEPER.

TRADE CATALOGUES RECEIVED.

Charles Toope & Co., Stepney Square, Stepney, London, E.—*Illustrated Catalogue of Heating Appliances.*

Hooper & Co., Covent Garden, London.—*List of Cereals for 1886-7.*

J. R. Pearson & Sons, 2, Exchange Row, Nottingham.—*Descriptive List of Garden Seeds for 1887.*

James Carter & Co., 237 and 238, High Holborn, London.—*Highly Illustrated Catalogue of Vegetable and Flower Seeds.*



All correspondence should be directed either to "THE EDITOR" or to "THE PUBLISHER." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

Address (S. W. Hurstpierpoint).—If you write to the Editor of the *American Florist*, Room 81, Vanderbilt Building, New York, U.S.A., enclosing the requisite amount in stamps for a reply, we feel sure he will endeavour to supply you with the required information.

Landlord and Tenants' Liability (H. T., Bristol).—Without knowing the precise conditions of the tenancy, we suspect no one can give a definite answer to your question. If you cannot consult a solicitor, a house agent on the spot would be able to give you better information than we can, on your explaining the whole circumstances of the case to him.

Vines not Losing Leaves (Merchant).—Your Vines are, like others, late in shedding the foliage this year. There is nothing unusual about them, it is a consequence of the peculiar and late season. The course you have pursued is quite right, but the temperature by day ought not now to exceed 50° artificially. We have had the leaves on the Vines until the New Year. We are pleased to know our advice had been of service to you.

Average Temperatures (Bray Subscriber).—We cannot give you the average temperature of any particular county, as the records of many stations would be requisite for determining that, altitude and shelter causing great fluctuations over even a limited area. Perhaps the best information we can afford you on the subject is to give the average day and night temperatures near London over a period of forty years. For the three months requested these are:—March: day, 50.8°; night, 33.4°. April: day, 57.4°; night, 36.3°. May: day, 63.9°; night, 40.4°. If you require the general average you have only to add the day and night figures together, then equally divide them.

Autumn-sown Turnips (Old Subscriber).—We should determine the question of digging them in according to the supply of larger roots that can be stored for use during the winter and early spring. During some seasons, when the winters are not very severe, autumn-sown Turnips not large enough for storing pass the winter and are often serviceable in spring, and, moreover, not a few persons enjoy Turnip tops cooked as greens as a change from vegetables. Their remaining on the ground through the winter will not have an injurious effect on the land, especially if it be of a light nature; but most heavy soils are improved by exposure to frost and broken up now and then when encrusted.

Norwich (Albert G. Eagles).—In reply to your delicate satire we can assure you that we are really aware of the existence of "such a place as Norwich." We actually explored it more than half a century ago. We also know that Chrysanthemum shows were held there many years since—indeed, they were among the first shows of their kind. We believe a Chrysanthemum show is still held in the old city, but we were under the impression that the Committee preferred it to be regarded as a merely local event, as we have no recollection of seeing it advertised nor of receiving a schedule, and it is certain no tickets for reporting the exhibition reached our hands. Possibly on reflection you may be induced to conceive that some slight movement on the part of persons who expect publicity is not without its influence in securing it; and we can assure you it is quite the usual practice of committees of horticultural societies who desire to have their shows reported to accord facilities of the nature indicated to the conductors of the horticultural press.

Plumbago capensis to Flower in August (A Subscriber).—The plant should be kept cool and dry, but not so dry as to cause the wood to shrivel, until early April, when it should be pruned, and having the ball reduced about a third he repotted. Growth may be encouraged by syringing, but the moisture at the roots must be moderate until the roots are working freely in the fresh soil, when it will be required more freely, and when the pot is filled with roots afford liquid manure once or twice a week. The plants may be started in a vinery or Peach house, and after some little growth is made it will be best given a light airy position in a greenhouse or conservatory. Its free flowering depends on the ripening of the wood. If that is got strong, short-jointed and firm it will flower freely enough. It should flower about the time you require, but plants for special purposes require judgment in keeping it cool if too early, or placing in heat if not sufficiently advanced.

Stakes Dressed with Petroleum (Idem).—The painting of the stakes from plants that have been infested with mealy bug will not injure the plants they are placed to next year. Petroleum will assuredly destroy the mealy bug, if care is taken to use it effectively. The petroleum will have dried from the stakes long before spring.

Cropping Kitchen Garden (Impecuniensis).—You cannot have a crop of Potatoes and Onions from the same ground in one season. The Potatoes will not be off before the middle of July even with early varieties, and if you then sow Onions they would only be fit for hunching in the early spring as young Onions, and are not very remunerative. A better plan would be to have Potatoes of an early variety, as Veitch's or Myatt's Ashleaf, a yard apart, and plant between the rows with Brussels Sprouts or Broccoli. If you have the Potatoes and Brussels Sprouts the ground would be available again for Potatoes, and having the rows of Potatoes 4 feet apart Scarlet Runner Beans could be sown between, which would give a good change. In the following year you could have Onions followed by early spring Cabbage, off in time for Celery, and the ground after it would be fit for anything. Onions pay well, so also do early Potatoes. We should certainly have Potatoes and Brussels Sprouts the first year. Manuring the ground once a year is sufficient, in autumn or early spring.

Screen for Garden (N. S. R.).—We quite follow your sketch. As you cannot spare much room for the screen a neat hedge would be suitable. We should plant two upright-growing Conifers, such as Cupressus Lawsoniana, at the ends of the flower border, and they would mask the extension of the border in the kitchen garden, and have an ornamental appearance from the house. A hedge could then be taken across either on the kitchen garden side of the path next the lawn tennis ground, or at the other end nearer the fowl run, the former plan we should think preferable. We should raise a mound on which to plant the hedge, which on the path side next the lawn could be faced with rockwork and planted so as to be ornamental. The entrance to the kitchen garden could be by the two side paths, forming another behind the hedge to reach the central walk. The question of forming the hedge is very much a question of cost. The Japanese Privet is cheap, quick growing and neat, but Conifers have a more feathery appearance, and good sized plants to begin with, say of the Cupressus named, would cost much more than similar plants of the Privet. A cheap method of forming a screen in summer is to sow a row of Sweet Peas, Scarlet Runner Beans, or Sunflowers, but a permanent evergreen screen would be the more satisfactory.

Photographing Leaves (T. R., America).—Extremely pretty representations of Fern fronds, and all finely divided leaves, may be obtained in white on a blue ground by means of red prussiate of potash in the following way. Make a fairly strong solution and paint it on white paper

When dry this paper is ready for use, and on exposure to light it turns blue. A change is effected by light, which produces a permanent blue; but the potash, unaffected by light, is still soluble and is easily washed off the paper. From the above it will be easily seen how the representations may be produced. Take first a few sheets of paper to form a bed, then lay on the prepared paper, next the specimen, and last of all a sheet of glass to press the whole flat and through which the light may shine. Sunlight is best, and in that case an exposure of ten minutes or a quarter of an hour is quite sufficient. All parts of the paper not covered by the specimen are now blue, and it remains only to wash out the potash from the paper where it is still unchanged from the protection of the specimen. The prepared paper must of course be kept in the dark before use. This is an easy process by which the outline of Fern fronds may be taken with the greatest precision. Many leaves do extremely well, such as of *Ouvirandra* and *Jatropha multifida*. It is much the best if the specimens are dried before use. Red prussiate of potash, being poisonous, should be used with caution.

Cutting down Vines (J. B.).—We have received and answered many questions as to cutting down Vines, but never one similar to yours. Your case is this—Muscate Vines are so vigorous and productive that the crop is too heavy for the roof of the house to bear, and you ask if it would hurt the Vines to cut them down and train up young rods? We think most persons would under such circumstances consider the advisability of adopting measures for keeping the roof up in preference to cutting the Vines down. Still if you desire to cut them down you may do so a week or ten days after all the leaves have fallen in a natural way, paring the ends of the stems smoothly, and dressing them well with painter's knotting. They would probably push fresh growths freely from the old stems, and some of these thinly trained, would, if strong and well ripened, bear fruit in 1888. The plan would certainly be effectual in preventing the roof being dragged down by Grapes next year, because there would be none. But what about its condition two or three years hence when the crop may be again heavy, and the roof in the meantime not having grown any stronger? There is an alternate method of reducing the weight of a crop of Grapes, and that is by cutting off a number of bunches after sufficient have set for producing a moderate weight of fruit. You might perhaps bear this suggestion in mind in considering the matter, and possibly a few supports might be affixed for affording strength to the roof.

Pears for Cordons (J. V.).—Your former letter was not sufficiently explicit. You simply asked for three Pears that grow as well as cordons in strong soil, and we named three useful varieties for succession accordingly. You now state your intentions and object more clearly. The question for you to decide is this—Whether with so many trees you could dispose of the produce quickly and to advantage? If you have any doubt of this, the safer course would be to plant at the least half a dozen varieties. Late Pears realise the best prices, but autumn Pears often produce the best crops. Then, again, all varieties do not succeed equally well in all places. Now we understand your case more fully, we suggest as likely to answer your purpose Williams' Bon Chretien, Louise Bonne of Jersey, Maréchal de Cour, Pitmaston Duchess, Doyenné du Comice, and Josephine de Malines. For affording a succession in three varieties, which was what we understood you to require, the three previously named answers well. Beurré d'Amanlis is an excellent grower and bearer, but from some soils the fruit is occasionally a little coarse and gritty, yet, generally speaking, it is a very useful Pear. If you were planting for home use, you would require at the least three the number of varieties to insure a continuous supply. You must remember that Pears cannot, like Apples, be kept for any considerable time after they are ready for use, and a loss not infrequently ensues when the whole of the fruit cannot be promptly disposed of. You would probably not err by growing a dozen or two trees each of Glou Morceau and Bergamotte d'Espéren.

Names of Fruits.—The names and addresses of senders of fruit to be named must in all cases be enclosed with the specimens, whether letters referring to the fruit are sent by post or not. The names are not necessarily required for publication, initials sufficing for that. Only six specimens can be named at once, and surplus fruits beyond that number cannot be preserved. (J. S.).—1, Gloria Mundi; 2, not known; 3, Blenheim Pippin; 4, Golden Noble; 5, Hoary Morning; No. 2 Pear, Ne Plus Meuris. (George Channing).—1, Cobham; 2, Kentish Fillbasket; 3, not known; 4, Lewis' Incomparable; 6, Kentish Fillbasket; 7, Lady Henniker; 9, Trumpington.

Names of Plants.—We only undertake to name species of plants, not varieties that have originated from seed and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in firm boxes. Slightly damp moss or soft green leaves form the best packing, dry cotton wool the worst. Not more than six specimens can be named at once. (W.).—We have not seen the specimens you previously sent. Those we have now received are *Sephoritis grandiflora* (scarlet), the other is a good variety of *Oncidium Forbesi*. (L. T.).—A poor variety of *Oncidium biconense*. (G. M.).—In the absence of leaves or some particulars to the habit, we should regard the plant as *Helleborus altifolius*, of which the leaves grow in an upright manner.

Feeding Bees (R. C.).—In your case, to preserve the bees having two combs only you should give them a few frames from some other hives that could spare them, or failing these sheets of comb foundation will do. The best food now is honeycomb. The next to that is syrup poured gently from a spouted vessel at some height from the comb, which must lie flat. After the one side is filled repeat on the other; replace the frame with comb in the hive. All the empty combs may be filled in the same manner. Candy is no better than syrup when given as directed. The frame-feeder is the next best, because the syrup is placed close to the tongues of the bees, and it being of wood is congenial to them to sip from during winter. But unless the one filling up with frames of comb and feeding with the frame-feeders none of the operations will be very successful unless performed within-doors at a temperature of about 60°. An apartment having one window of not more than 2 feet square (a large window may be contracted by darkening with paper or cloths), perfectly dry and free from dust will do. Place the hive near the window and on a level with the sill, and manipulate them as if they were outside, giving the bees full liberty. They

will fly only between the window and hive. Care must be taken that the bees do not get soiled, and all impurities must be carefully dried up. These accumulate rapidly when bees are disturbed at a low temperature—hence the reason for manipulating within-doors. Outside manipulation would be fatal to them at this season; indeed, there is a risk of the bees by the accident being in an unhealthy condition, and can only be saved by indoor manipulation. The bees soon get accustomed to their situation, and the warmer the apartment can be made the better for them. After the bees have cleared themselves thoroughly of all incumbrances, and have had enough food stored, take them out to their stand at dusk. If the combs are fairly and properly tied the bees will soon fasten them all right.

COVENT GARDEN MARKET.—DECEMBER 15TH.

BUSINESS very stagnant with prices easier. Large arrivals of Nova Scotia and Canada Apples to hand, as also St. Michael Pines. Grepes more than sufficient for the demand.

FRUIT.

	s.	d.	s.	d.		s.	d.	s.	d.			
Apples	1	6	to	4	0	Melon	0	0	to	0	0	
„ Nova Scotia and						Oranges	100	6	0	12	0	
Canada, per barrel	10	0	13	0		Peaches	per doz.	0	0	0	0	
Cherries	1	0	0	0		Pears	dozen	1	0	2	0	
Cobs	100	lb.	60	0	70	0	Pine Apples English ..	lb.	1	6	2	0
Figs	dozen	0	6	0	9		Plums	1	0	2	0	
Grapes	lb.	0	6	3	9		St. Michael Pines ..	each	2	0	5	0
Lemons	case	10	0	15	0		Strawberries	per lb.	0	0	0	0

VEGETABLES.

			s.	d.	s.	d.				s.	d.	s.	d.				
Artichokes	dozen	1	0	to	0	0	Lettuce	..	..	dozen	1	0	to	1	6
Asparagus	bundle	0	0	0	0	0	Mushrooms	..	..	punnet	0	6	1	0	0
Beans, Kidney	per lb	0	6	0	0	0	Mustard and Cress	..	..	punnet	0	2	0	0	0
Beet, Red	dozen	1	0	2	0	0	Onions	..	..	bunch	0	3	0	0	0
Broccoli	bundle	0	0	0	0	0	Parsley	..	dozen	bunches	2	0	3	0	0
Brussels Sprouts	½ sieve	1	6	2	0	0	Parsnips	..	..	dozen	1	0	2	0	0
Cabbage	dozen	1	6	0	0	0	Potatoes	..	..	cwt.	4	0	5	0	0
Capsicums	100	1	6	2	0	0	„ Kidney	..	..	cwt.	4	0	5	0	0
Carrots	bunch	0	4	0	0	0	Rhubarb	..	..	bundle	0	2	0	6	0
Cauliflowers	dozen	3	0	4	0	0	Salsify	..	..	bundle	1	0	1	0	0
Celery	bundle	1	6	2	0	0	Scorzoneria	..	..	bundle	1	6	0	0	0
Coleworts	..	doz.	bunches	2	0	4	0	0	Seakale	..	..	per basket	1	6	2	0	0
Cucumbers	each	0	3	0	4	0	Shallots	..	..	.. lb.	0	3	0	6	0
Endive	dozen	1	0	2	0	0	Spinach	..	..	.. bushel	3	0	4	4	0
Herbs	bunch	0	2	0	0	0	Tomatoes	..	..	.. lb.	0	8	1	0	0
Leeks	bunch	0	3	0	4	0	Turnips	..	..	.. bunch	0	4	0	0	0

PLANTS IN POTS.

	s.	d.	s.	d.		s.	d.	s.	d.	
Aralia Sieboldi ..	dozen	9	0	to 13	0	Ficus elastica ..	each	1	6 to 7	0
Arbor vitæ (golden)	dozen	6	0	9	0	Fuchsia ..	per dozen	0	0	0
„ (common)	dozen	6	0	12	0	Foliage Plants, var.	each	2	0	10
Asters	per dozen	0	0	0	0	Heliotrope ..	per dozen	0	0	0
Bedding Plants, var.	doz.	0	0	0	0	Hydrangea ..	per dozen	0	0	0
Begonias	dozen	4	0	9	0	Ivy Geraniums	per dozen	0	0	0
Chrysanthemum ..	dozen	4	0	12	0	Lilium auratum	per doz.	0	0	0
Cockscombs	per dozen	0	0	0	0	Lobelia	per dozen	0	0	0
Cyperus	dozen	4	0	13	0	Marguerite Daisy	dozen	6	0	9
Dracæna terminalis,	dozen	30	0	60	0	Mignonette ..	per dozen	3	0	6
„ viridis ..	dozen	12	0	24	0	Musk	per dozen	0	0	0
Erica, various ..	dozen	9	0	12	0	Myrtles	dozen	6	0	12
„ hyemalis	per dozen	12	0	24	0	Palms, in var.	..	each	2	6
„ gracilis	per dozen	9	0	12	0	Pelargoniums, scarlet,	doz.	6	0	9
Euonymus, in var.	dozen	6	0	18	0	Pelargoniums	per dozen	0	0	0
Evergreens, in var.	dozen	6	0	24	0	Primula sisensis	per doz.	4	0	6
Ferns, in variety	dozen	4	0	18	0	Solanums	per doz.	9	0	12

CUT FLOWERS.

		s.	d.	s.	d.			s.	d.	s.	d.
Abutilons ..	12 bunches	2	0	to	4	Lily of the Valley, 12	sprays	0	0	to	0
Arum Lilies ..	12 blooms	4	0	6	0	Marguerites ..	12 bunches	2	0	6	0
Asters ..	12 bunches	0	0	0	0	Mignonette ..	12 bunches	1	0	3	0
Azalea ..	12 sprays	1	0	1	6	Narciss, Paper-white, bunch		0	4	0	6
Bouvardias ..	per bunch	0	8	1	0	„ White, English, bunch		1	3	1	6
Camellias ..	12 blooms	2	0	4	0	Pelargoniums, per 12 trusses		0	9	1	8
Carnations ..	12 blooms	1	0	3	0	„ scarlet, 12 trusses		0	4	0	6
„	12 bnneoes	0	0	0	0	Roses ..	12 bunches	0	0	0	0
Chrysanthemums	12 bches.	2	0	6	0	„ (lador), per dozen		0	6	2	0
„	12 blooms	0	6	2	0	„ Tea.. ..	dozen	0	9	3	0
Cornflower ..	13 bunches	0	0	0	0	„ red	dozen	1	0	2	0
Dahlias ..	12 bunches	0	0	0	0	Parma Violets (French)		4	0	5	9
Epiphyllum ..	doz. blooms	0	6	0	0	Primula (single) ..	per bunch	0	4	0	6
Encharis ..	per dozen	4	0	8	0	„ (double) ..	per bunch	1	0	1	6
Gardenias ..	12 blooms	4	0	6	0	Pyrethrum ..	12 bunches	0	0	0	0
Gladioli ..	12 bunches	0	0	0	0	Stephanotis ..	12 sprays	6	0	8	0
Hyacinths, Roman,	12 sprays	1	0	1	6	Stocks, various	12 bunches	0	0	0	0
Lapageria, white,	12 blooms	2	0	4	0	Tropæolum ..	12 bunches	1	6	2	0
Lapageria, red ..	12 blooms	1	0	2	0	Tuberose ..	12 blooms	1	0	1	6
„ longiflorum, 12 blms.		6	0	8	0	Violets ..	12 bunches	1	0	1	6
Lilac (white), French, bunch		6	0	8	0	„ Czar, French, per bunch		1	3	1	9



A WELL-STOCKED HOMESTEAD.

MANY things go to render the final result of farming a financial success, and they are generally comprised in what is often termed good all-round farming. For the ordinary

good farmer is not a man of specialities; he tries hard to do the whole of his work as well as he can rather than to spend his strength upon one or two things in particular, and he takes care that each department of his farm shall be fully turned to account for its legitimate purpose of the growth or manufacture of farm produce. To this end not only is the land cropped in the best way, but the homestead, too, is made to contribute no mean share of marketable commodities. The dairy, poultry, and stock yards are all turned to full account, and it is only the skilled practitioner who knows really what this means.

Take, for example, the live stock at this season of the year, and take first the pigs, which are usually regarded as the least important section of it. Under good management there are weekly or fortnightly consignments to market either of porkers worth 40s. to 50s. apiece, or of fat pigs for which two or three times that amount is realised. It is quite possible on a farm of 400 or 500 acres to show a turn over of £1 an acre for pigs alone, especially after such an unfavourable Barley harvest. Better, far better, is it to turn discoloured Barley into pork, and so turn it to profitable account, than to sell the grain to the middleman at a positive loss. Barley, Oats, and Peas afford food in the highest degree nutritious for pigs as well as for other animals, but with pigs we can hardly use any of such food wastefully. Chubby compact little animals are soon ready for market as porkers; others with longer bodies and larger frames are equally profitable to keep till they are large fat hogs. Both class of pigs answer best under high feeding, and it is really a matter of surprise how quickly they fatten under careful management. Many years ago we realised this in a somewhat singular manner. Upon going one morning into the farmyard we saw a fine plump porker trying to get through a hole in a fence near a barn where two men were thrashing corn with flails. The squealling of piggy, and its vain but persistent efforts to force a way through the fence, attracted our attention. Upon driving it away to the other pigs of the same litter we noticed that it was so superior to the whole of them in size and condition that our curiosity was aroused, and upon inquiry the men owned with a grin that they had for some little time been feeding it surreptitiously with corn in order to see how soon it would become too big to get through the hole.

If possible the whole of the pigs should be home-bred, for since swine fever has become so rampant and widespread the risk of losses from pigs bought from dealers is so serious that it ought to be avoided. Apart from this there can be no doubt that the germs of such an infectious disease are frequently conveyed from one farm to another upon the clothes of careless persons. We repeat that cleanliness among pigs is as important as among other animals.

Poultry rearing and fattening require much more than ordinary care to render it really successful. When well done it is very profitable, especially in spring and early summer. Not an egg is to be had from a Sussex henwife in the first four months of the year; all are required for hatching, and for this process artificial incubators now play an important part. The management of an incubator and foster-mother is not at all difficult. The process is simple, and success depends more upon close attention to details than anything else. It was in the hands of a lady that we first saw an incubator at work, and she had been so successful that she was able to show us chickens in large numbers all hatched by it and in all stages of growth, from fine birds ready for table down to others just hatched. True economy is embodied in the process; the hens not required for hatching eggs soon pass through the "broody" stage, and begin laying eggs again quickly. After being in the incubator a certain time each egg is examined by the aid of a lamp, and those which contain no embryo are still perfectly wholesome for culinary purposes and are at once sent to the kitchen. The importance of obtaining a full stock of early turkey poults also adds to the value of the incubator. Turkey hens when not

allowed to sit upon eggs soon begin laying again, and we have only to take care that they are kept within due bounds then in order to obtain enough eggs for our purpose. The well-known propensity of Turkeys to conceal the nest renders confinement during the laying time almost a necessity. Many a valuable hen has become the prey of foxes while sitting in its solitary nest away in some almost inaccessible thicket. We may add that we have always found it advisable to make allowance for a certain margin of loss in turkey rearing, and it answers best to have too many early birds rather than have to try and make up the number required with late ones, which so often prove sickly and weak.

(To be continued.)

WORK ON THE HOME FARM.

The ewe flock is now withdrawn from the folds upon arable land, and will be kept upon sound, well-drained pasture till after the lambing. Especial care is taken with any cases of foot-rot before the ewes become heavy with lamb, in order to avoid having to dress the feet then, when there is so much risk of harm arising from fright and from throwing the pregnant animal upon its back as is frequently done when the feet are examined. Let it never be forgotten, too, how seriously foot-rot is liable to affect the condition of the sheep at a time when it requires an extra amount of sustenance. With few exceptions, all cases of foot-rot can be speedily cured if only due pains are taken; yet how difficult is it to overcome or enlighten crass ignorance in this simple matter! We have found it necessary, not only to show how affected animals are to be treated, but to insist upon a thorough examination and dressing of diseased feet at least twice weekly. If the slightest inattention or negligence is discovered, it only remains to give personal attention to the work till a cure is effected. Exceptional cases of foot-rot are those where the symptoms are lameness that is evidently painful, swelling of the foot, much abnormal heat showing unmistakeably internal inflammation without any external wound. Daily fomentations with warm water, and poultices of linseed meal, soon give relief, even in such exceptional phases of the disease. We have had our most difficult cases amongst old sheep bought at market, where it is often practically impossible to examine the sheep, yet we never knew a diseased foot that proved incurable. Gentle treatment, washing with warm water, cutting away all loose parts of hoof, dressing with Gell's foot-rot ointment, and for very bad cases daily poultices of linseed meal will generally effect a cure in a short time. The ewes are now having a moderate quantity of Mangolds carted daily to the pasture, Oats and chaff are also given now daily, and the cribs are either filled with Pea straw or unthreshed Oats. Hoggets and crones are in folds upon Turnips, a mixture of crushed Oats, Beans, and chaff being also given them. Notwithstanding heavy rain, the folding may go on where the land is sound without harm to the sheep and with much benefit to the land. But heavy land, retentive of excessive moisture, is unsuitable for folding in cold wet weather, and it is far better to withdraw the sheep for a time to a comfortable yard.

OUR LETTER BOX.

Cow with a Cold (R. C.).—We cannot satisfactorily prescribe for such a case from such a meagre description of the case; indeed, it is necessary that the cow be seen before medicine is prescribed. If it is suffering from an acute attack of pleurisy it will probably die—in any case the advice of a veterinary surgeon should at once be had. See that the cow is kept in a warm shed, that the litter is dry and replaced daily with a fresh supply, and let the food consist of bran mashes, hay and carrots.

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude, 111 feet.

DATE.		9 A.M.					IN THE DAY.					Rain
1886. December.		Barometer at 29 in Sea Level	Hygrometer.		Direction of Wind.	Temp. of Soil at 1 foot.	Shade Temperature.		Radiation Temperature			
			Dry.	Wet.			Max.	Min.	In sun.	On grass.		
									In.			
Inches.		deg.	deg.	W.	deg.	deg.	deg.	deg.	deg.	In.		
Sunday	5	30.091	31.6	30.5	W.	37.8	46.4	28.8	47.2	21.2	—	
Monday	6	29.890	50.6	49.2	S.W.	38.6	53.9	51.6	61.9	28.3	0.059	
Tuesday	7	29.371	42.6	38.7	W.	41.4	44.8	42.2	53.2	35.2	0.346	
Wednesday ..	8	28.628	40.7	40.7	S.W.	42.6	48.2	37.2	64.4	29.9	0.146	
Thursday	9	28.416	40.6	40.0	N.W.	40.6	44.9	35.9	51.6	32.4	0.049	
Friday	10	29.237	34.6	34.3	W.	49.2	43.7	32.7	66.4	26.6	0.013	
Saturday	11	29.439	41.4	43.9	S.E.	39.0	51.2	33.7	52.8	27.1	0.147	
		29.233	40.7	39.6		40.2	47.6	34.6	56.8	28.7	0.760	

REMARKS.

5th.—Fine bright morning, cloudy afternoon and evening.
6th.—Overcast morning, balmy sunshine at midday, shower in evening, rain in night.
7th.—Fine and bright early, shower at 11.15 A.M., sunshine in afternoon, fine bright evening, gale at night.
8th.—W.S. gale, heavy rain till 10 A.M., with large hail, lightning and thunder at 9 and 9.4 A.M.; day generally fine, much sun, barometer very low.
9th.—Extremely low barometer, fine and generally bright; gale all day.
10th.—Snow early, fine morning, sunshiny afternoon, fine clear night.
11th.—Overcast, warmer, rain in evening.
A week of average temperature, but noteworthy for having on December 9th at 4.45 A.M. a less barometric pressure (28.295 inches) than has occurred in London since 1843.—G. J. SYMONS.



23	TH	CHRISTMAS DAY. 1ST SUNDAY AFTER CHRISTMAS. BANK HOLIDAY.
24	F	
25	S	
26	SUN	
27	M	
28	TU	
29	W	

GARDENING.

GARDENING in its best aspect may be described as the highest attainable representation of the culture of plants and crops. There can be no more important and no more commendable employment than that. Plants, well grown, contribute powerfully to the sum of human happiness, and they embody and display the intelligence of man. Crops of the various kinds the gardener produces are a main factor in the nation's wealth, because forming an indispensable and recognised element in the nation's food. All those, therefore, who engage in the occupation of gardening, and whose chief pride is to excel in developing the earth's resources, and who share in producing in its greatest excellence that which is pleasant to the eye and good for food, are engaged in a high and honourable calling.

Time was when the exercise of gardening was considered as little more than "a superior pursuit for a rustic." But it is raised to a far higher position now. It is an art, and more than that, a science, though all may not agree with this ruling. There are persons who regard themselves as engaged in a more elevated sphere, looking down with complacent assurance on their fellow workers who are "only gardeners." But the artificial barrier that is occasionally yet vainly sought to be strengthened is crumbling away, and botany and horticulture are now regarded as twin sciences by able representatives of both. This has been demonstrated in a marked way on more than one occasion by those distinguished men, the present and ex-directors of Kew; and gardening is now indulged in as a pursuit by many of the most scientific and noble individuals of this and other countries.

The most intelligent of our professional gardeners have profited by the alliance, and will profit more in the future, while they have, in turn, imparted practical knowledge of admitted value to their learned associates. This is as it should be. Mutual respect for each other, mutual trust, and mutual help result in a greater aggregation of sound knowledge that cannot fail to be of advantage to individuals and the whole community. The so-called "practical" man who laughs at science betrays his own weakness; and the botanist and philosopher who regards "mere gardening" as savouring of a low occupation, sits on a very shaky pedestal, and though conspicuous, is not envied in his exaltation. Well has one of the most scientific and practical of horticulturists, the late Mr. G. W. Johnson, observed:—"Now that gardening has gained the attention of men of science, the progress of horticulture is no longer astonishing. The botanist applies his researches to the inhabitants of the garden, and the better explanation of their habits. The vegetable physiologist adapts his discoveries to practical purposes by pointing out the organs and functions which are of primary importance; and the chemist by his analysis discovers their constituents, and is consequently enabled to point out improvements which practice could only have stumbled on by

chance, and perhaps during a lapse of ages." That is the true light in which to regard the researches of men of science; but practice is the fruition of their labours, and it is that practice, founded on sound principles, which is comprehended in the very expressive, well understood, and good old term—"gardening."

That same time-honoured word is, as near as any word can be, the embodiment of perfect culture. The qualification is necessary, for "nothing is perfect." What is described, too readily and frequently, as "perfect" to-day is excelled to-morrow. Excellence is attainable, relative, and should be achieved; perfection is absolute. It is the duty of all who are employed in gardening to strive to surpass all that has been hitherto accomplished; and then we may rest assured that if they succeed it is only a matter of time for someone to go a step beyond them. There is thus adequate incentive to urge us on in whatever work we may be engaged. Gardening, good gardening, means superiority of culture. It is the oldest of occupations—the root, of which agriculture is the extension. Never was it more incumbent that an ancient craft should be represented in its highest form.

If gardening should degenerate it would be the greatest calamity that could happen to this nation. We are passing through a social revolution. Gardens, or at least those of them that are well tilled, are almost the only bright and cheering specks of hope that point the way to a better future for those engaged in the great "extension"—agriculture. But there is no mistaking the clearness of the light that well-managed home plots shed over (for the time being) a somewhat dreary land. They proclaim unmistakeably the remedy, and the only remedy, for what is called "depression," the true interpretation of which in many cases is degenerate culture. This must be reversed before prosperity can come. Artificial aid may mitigate the evil of the present stringent times from which landowners, occupiers, and labourers are alike suffering; and such aid, wherever possible, should be extended, and the more promptly this is done the more effectual and economical will the action be; but the real remedy, the only sure and certain, if rather slow remedy, is higher culture—more garden-like culture—more fertility in the soil, and less weeds to devour it. That is the natural course through which improvement must flow, and the removal of whatever restrictions created by artificial means, whether by the action of law or the establishment of custom, are merely obstacles in the stream.

It is no doubt true, and the truth cannot but be regretted by all right minded men, that the necessity has arisen for not a few owners of land to restrict their expenditure; and gardens and gardeners have had to bear their share of this reduction, perhaps in some cases an undue share. The limitation of luxuries may not be of serious import, except to those who live by their labour in producing them, and the opportunity for them to do so is reluctantly withdrawn; but it will be a great, a serious, and a far-reaching mistake if the cultivable parts of a garden are allowed to degenerate into a wild waste, as in such case there will be nothing left to show that the surrounding land is capable of restoration, and the spectre of despair will then overshadow all.

The land is losing its fertility because its workers are losing their energy or lack the requisite means for its profitable exercise. There is great danger, perhaps the greatest of all dangers, of the establishment of the fallacy that because the value of produce is low less must be grown by withdrawing the means for producing more. Anything more unsound or more uncommercial than such a doctrine it is not easy to imagine. The exact reverse is the truth, as must be admitted by reflective minds. Under the circumstances indicated, profit can only come from increased production—a reduction in the bulk of food products being the certain road to ruin. But how is the increase to be brought

about? Maintain the fertility of gardens all over the land and look to them for the answer. Full crops are more eloquent than argument, and where good gardening is encouraged, and conducted, the crops are as good as ever. There is no degeneracy there.

It is more than ever incumbent for all who are employed in gardening to strive for supremacy in the work of cultivation. The best of whatever may be required must be grown in the best and most economical manner. There must be no waste of material or of force. The object to be attained must be kept clearly in view, and the method of attaining it precisely determined. It is not given to every man to see his way directly to every point. The path to success is often intricate. Byeways abound, offering an apparently easier course; but they may yet be wrong, and though smooth at first lead from instead of to the goal. Guides are necessary, who have explored the labyrinth and learned the safe route, and this followed perseveringly leads to the object of their desire. Who are those guides? Look back over the volumes of this Journal, and some will be found there; look through the present number and judge by their directions as to whether they know their way or not. We think they will not mislead; but on the contrary, they have tried both the byeways and the highways, and know, if any travellers do, the nearest and the best way to where they essay to lead. They will continue to give the light of experience, and, so to their own credit, our satisfaction, and the benefit of those wayfarers that need a helping hand, illumine the path that leads to success in gardening.

And now we once again repeat the salutation that never appears to grow old or hackneyed, but is as fresh and welcome as the flowers in their seasons, and to old and young, gardeners and amateurs, writers and readers of every grade, that salutation is

A MERRY CHRISTMAS.

NEPENTHES.

THE different species and now numerous varieties of this genus are most interesting plants to the physiologist and botanist, and never-failing objects of curiosity to all casual visitors to gardens where they are grown. Though perhaps not so useful from a decorative point of view as are many of our stove plants, *Nepenthes* can nevertheless be most effectively used in what may be termed domestic exhibitions of plants, in which combinations their distinctness from all other plants renders them objects of peculiar attraction and interest, so that wherever even a few plants requiring stove temperature are cultivated, some *Nepenthes*, in numbers proportionate to the accommodation, should find a place, more especially as they require to be suspended from the roof, and do not encroach on the space that might be considered more profitably occupied. They always constitute a pleasing feature in a houseful of tropical plants, and are not by any means difficult to manage.

The propagation of *Nepenthes* was long considered a difficult art, and only to be accomplished with certainty and success in nursery establishments, where they might be more or less of a specialty. There cannot be a greater misconception, as I have repeatedly proved that there is no greater difficulty in propagating the great majority—in fact, nearly all them—than in striking a *Croton* or *Dracæna*, and the process can be carried out in any season of the year. Various methods have been adopted by nurserymen and gardeners. After having tried some of them, I have found the most successful to be the insertion of the cuttings in fresh sawdust, placed to the depth of 6 inches in any position where a bottom heat of 80° to 85° can be steadily maintained with a top temperature of a propagating case placed over the sawdust of 5° or 10° lower. The great virtue of the sawdust is that it retains sufficient moisture without very frequent applications of water beyond the dewing over of the cuttings once a day. They also root well in clean rather coarse river sand, and I have to-day (December 7th) potted nineteen cuttings that were inserted in the latter material on October 8th. They had whorls of roots much like a *Carnation* layer, and not one of them went wrong. They require much more water in the sand than in the sawdust, and may be watered freely every second day at least.

The selection of the cuttings is a point of considerable importance. The worst of cuttings are the soft tops of growths and the hard woody ones from their base. The best are the moderately

firm short-jointed side shoots. Longer growths of strong-growing sorts can be made, and into several good cuttings, two joints being sufficient, terminal cuttings being put in whole and not topped till well rooted. Cuttings of two joints should not have the bottom leaf removed, but be inserted into the sawdust or sand with the shoot. The cuttings should not be disturbed for two months, when (with the exception of such as *N. Veitchi*, which takes a week or two longer) they are always found well rooted.

In potting them I use 2½-inch deep pots, well drained, and the material used is the toughest fibre of Orchid peat that can be obtained, with every particle of fine soil either beaten or washed out of it, and fresh sphagnum in the proportion of two parts of the former to one of the latter. They are potted firmly, and a stake put to each to steady it if necessary; they are returned to the propagating case, kept close for a week or two, and then gradually exposed to the temperature of the house, which in case of the cuttings I have referred to is 60° to 65° at night.

When the young plants have thoroughly stretched their dark threadlike roots into the little balls, they are transferred to baskets of teak or wire, or, as in our case just now, into glazed pans. They do not require large bulks of material to grow in; and when established thus do not require much attention to keep them healthy, beyond being syringed once or twice a day to keep them clean and the material in which they grow moist. To have compact pitcher-producing plants they should not be allowed to make rambling growths in their younger stages, but be topped at every second joint till a good foundation for the specimen is formed.

When well established they luxuriate all the more if supplied occasionally with water just coloured slightly with good fresh guano, and I have sometimes crumbled a little dry sheep or horse droppings on the surface of the balls with much benefit to the plants. They should be transferred into larger baskets when they have well taken possession of those they are in. In carrying out this operation some care is necessary. And all the decayed effete particles that may be about the roots should be removed. The best way of doing this is to carefully turn the plants out of their baskets and immerse them in a pail of tepid water, and to press the ball with the hand, so forcing all slimy matter out of the ball, and allowing it to drip awhile before being put into the new basket or pan. The fresh material should be pressed firmly round the roots, and I have often, in the case of large plants, mixed in a proportion of lumps of clean charcoal, to which the roots cling.

By treating *Nepenthes* according to this general outline I have produced some pitchers of enormous size. One of *N. distillatoria* held a pint and a wineglassful of water, and others in proportion. I believe some I sent to London several years since were dried, and are now in the Museum at Kew. The only species I tried to grow that beat me was *N. Rajah*. It made leaves, but as fast as it made one leaf it lost another, and ultimately expired. By the way, I have not heard of any decided success in humouring His Majesty. Before the collection here was broken up it consisted of nearly thirty sorts, but there are only a few specially compact-growing favourites now, such as I would commend to those whose space is limited and who have not much head room. They are *N. sanguinea*, *Mastersiana*, and *Veitchi*, all unique in their way. *Mastersiana* is probably—taking it all ways—the finest British hybrid in existence. *N. sanguinea*, of which we have eight plants, is a beautifully high-coloured pitcher, and the construction of the pitchers of *Veitchi* is very distinct from almost any other, and so is its colour—a light pea-green shaded with brown. We have a plant of it just now with leaves over 18 inches long. To these might be added the compact neat-growing *Northiana*, and where there is head room enough *N. Hookeriana* and *N. Rafflesiana* make distinct additions of such as are not now high-priced.—DAVID THOMSON, *Drumlanrig Gardens*.

HARDY BERRIED PLANTS.

MISTLETOE.—Two thousand years of civilisation has not obliterated, but increased the hold of the Mistletoe on the popular mind. It grows on the Thorn, Crab, Lime, and Poplar, and does not despise the lowly Gooseberry; indeed it will grow on most trees, but is most prolific of berries on the Thorn and Crab. Seeds put on the smooth bark, to which they adhere by the viscid pulp of the berry, are sure to germinate, only insure them against birds. In this way every garden might have its Mistletoe. It is much valued for its silver berries and golden-green leaves and branches.

IVY.—The common purple-berried Ivy (*Hedera Helix*) is of great decorative value, and for constructing with it we have the yellow-berried (*H. Helix fructu luteo*), which also assumes a tree form.

HOLLY.—What can equal sprays of well-berried Holly (*Ilex aquifolium*) for decoration? and it grows in town or country, in valley or on hill, in sunshine or in shade; but fine as the common Holly is with spines, having a more picturesque leaf, and well berried, I think preference would be given by manipulators or decorators to the smooth-

leaved, and as I have observed, most prolific of berries. The Minorca Holly (*I. balearica*) berries well, often when others do not, and it is very neat. It, however, is not over-hardy, but requires a light soil. Very different is the yellow-berried (*I. aquifolium flavum*, or *fructu luteo*). They are charming if only to strike the angles and dot or bring out the points of decorative work.

COTONEASTERS.—*C. microphylla* is very neat in growth, having deep shining small leaves, glaucous beneath, and bright red berries, studded like beads amid the somewhat stiff branches. It is fine for walls, and rockwork as well as slopes. It is very appropriate for churches. *C. Simonsi* has much larger berries, is of erect growth, and is not fully evergreen, therefore its decorative value is not equal to those with fruit set in their own foliage. It grows freely anywhere, and is useful for walls.

AUCUBAS.—Their name is legion, especially the female or berried sorts. Perhaps the best of the green sorts are *A. himalaica*, and *A. longifolia*, *A. japonica*. Well fruited plants in pots are fine for various decorative purposes, and have the advantage of enduring where tender plants would be crippled by the cold. The berries show well with the variegation of *A. japonica maculata* (the old Aucuba of gardens), also the white or creamy edged *A. japonica limbata*. The best form for pots for table is *A. japonica vera nana*. There is one with yellow berries—viz., *A. japonica luteocarpa*. The Aucubas do well in towns.

Butcher's Broom (*Ruscus aculeatus*) is curious, and its red berries on the spiny plants are pretty. It does well enough under trees, but berries best on dry banks. *Pernettya speciosa major* and *P. Drummondii* have small neat dark green foliage and red or coral berries. They like a dry site or rockwork. *Pyracantha* (*Crataegus Pyracantha*) or Evergreen Thorn, is the finest of all berried plants for a wall. Its clusters of bright red fruits are brilliant, and I am informed is called the Fiery Thorn in south Europe—its habitat. Grand as it is, it dwindles before the flame of Leland's *Pyracantha* (*Crataegus Pyracantha Lelandii*), which is "bigger and better," and brighter. Then there is the dwarf and very pretty little *Skimmia japonica*. It does best in shade, and has bright coral berries. Of its forms the best is perhaps *S. japonica intermedia*. They are neat plants in pots for decorative work. For surfacing or carpeting, what can vie with the cushion-like tufts of verdure dotted with the orange red berries of *Nertera depressa*?

The berries of deciduous trees and shrubs may be passed, only the hedges of Sweet Briar (*Rosa rubiginosa*), are large and bright, and the white berries of the Snowberry (*Symphoricarpos racemosus*, *alba*) are beautiful.—G. ABBEY.

SOME GOOD VEGETABLES OF 1886.

AMONGST the endless variety of vegetables now offered to the public there are some greatly superior to others, and further experience gained in 1886 enables me to speak with more confidence of many good sorts which were previously only regarded as novelties of no special advantage on the table. Amongst new Potatoes Sutton's Seedling has come out well. It is a white kidney, perfect in form, excellent for show, grand on the table, and superb in cropping and table qualities. I never had a Potato which pleased me better. Carter's Cetewayo is as black as ink throughout, free from disease, and is capital for a Potato salad, which is a dish not used so much as it merits. The Village Blacksmith is a very distinct Potato. It is round in form, handsome, and with a very rough russety skin. It is of excellent quality and has been introduced by many as their special property, but I believe it had its origin in Messrs. Daniel's Norfolk Russet. The White Elephant of the latter firm is gaining ground with its many good qualities. I am of opinion that those who may have discarded it after a trial of one season may have made a mistake.

Carter's Leviathan Broad Bean holds its own for size of pod and all good qualities. Next to this comes the Seville Long Pod, as it is early and very prolific. Cooling's Ne Plus Ultra has taken a place amongst the best Dwarf French Beans for forcing. It is also the earliest in the open air, and is here followed closely by Canadian Wonder, which is likely to keep in the front rank. Laxton's White Czar is a remarkable Runner Bean. It is very prolific, the pods are from 1 foot to 18 inches in length and very good. It will be much grown for exhibition. The pods being so large and fleshy, it is a difficult matter to save seed, and this will probably have to be accomplished in a warmer climate than ours. The Girtford Giant is a dwarf to it, and yet this is a handsome variety of great merit. The Transylvanian Runner Butter Bean should be grown for its delicate flavour. The pods are long, fleshy, and do not become stringy readily.

I do not know any new variety of Asparagus, and those which bear special designations are simply selections of standard sorts, of which the Giant, Mammoth, and Colossal are the leading types. Amongst Beets Pragnell's Exhibition is conspicuous with its fine form and extra deep coloured flesh. Borecoles or Kales increase at an astonishing rate, with what object I cannot tell, as they are amongst the most ordinary vegetables and are not much grown. Indeed, they do not merit extensive culture, as they are only acceptable after very severe weather, and then

they are not eaten if any other vegetable is obtainable. Carter's new Welsh variety is uncommonly early, hardy, good in colour, and tender on the table. Gilbert's Chou de Burghley is still regarded as a novelty by many, and apart from this it is an excellent vegetable.

Broccoli form such an extensive class that the varieties are quite bewildering, but three parts of them may be disregarded and the others require selecting. Veitch's Self-Protecting Autumn variety is still unique in November and December; Backhouse's Winter White follows, and Sutton's Winter Mammoth is a newer variety, which for two years has produced heads of high quality in January. Cooling's, Cattell's, and Leamington are still amongst the best of the March and April Broccoli, and Sutton's Late Queen has a rival in Veitch's Model in May and June. I do not know a Broccoli or Cauliflower connected with "Penzance" that is worth growing.

The main desire nowadays is to have Brussels Sprouts that produce side growths like small Cabbages, and in point of quality these are all very well, but they do not answer well when cooked and placed on the table, as they are then more like a mashed vegetable than the neat round sprout, which always retains its individuality. These are the proper kind, and are produced freely by the Reading Exhibition variety and Webb's Matchless. We have eight forms of them here this season, and these are the best. They are an excellent winter vegetable, and should be grown in every garden.

Cabbages form another extensive class, as in variety they number some dozens, but two or three at most are sufficient for all gardens. Ellam's Dwarf Early is the earliest we have any experience of. It is rather small, and might not be very saleable in the market when larger ones were offered, but it is very choice and of fine quality. Webb's Emperor holds a conspicuous place amongst first-rate Cabbages, as it is not liable to flower prematurely, and it forms weighty heads very early in the season, which are valuable for all purposes. Reading All Heart is one of the newer sorts which is remarkable for being of very compact growth, and I do not know any other three Cabbages to excel those named. Carter's Miniature Drumhead is a meritorious variety not well known nor as widely grown as it should be. The old Drumhead will be known to many of your readers, and this is a very small form of it. It is very hardy and stands the winter well, while in point of table properties it surpasses most of the Savoy.

Early Cauliflowers have certainly been improved during recent years, and the Early London, Erfurt, and one or two others are out of the field. The earliest is a new variety named Webb's Tom Thumb. Like its namesake, it is a miniature, but the heads, although small, are compact and possess all the qualities of a good Cauliflower. Veitch's Extra Early Dwarf Forcing comes next to this in point of earliness, and it is a little larger. Sutton's King of the Cauliflowers is excellent as a main crop or summer variety, and Eclipse sent out by a Manchester firm is very much like it. I have heard it often said that Eclipse and Autumn Giant were very much alike if not identical, but I cannot tell how anyone could think so; the Autumn Giant is superior, especially in late autumn and early winter.—A KITCHEN GARDENER.

(To be continued.)

THE MARGUERITE.

THE business of room and table decoration in winter having become so important a part of a gardener's duty, a line on the cultivation of the Marguerite may not be unacceptable to some of your readers.

Here we find this plant to be a most acceptable help in this department of work from October to Christmas, when well-flowered plants can be used to advantage and give us much pleasure, their glaucous foliage and bright silvery star-like flowers being always appreciated, but more especially in winter. We have had plants measuring between 6 and 7 feet through, one mass of bloom. Those of your readers who may not have grown them may easily imagine the effect such plants will have when placed in prominent positions in mansions—such as halls and stair landings. With careful attention to watering they will remain fresh for six weeks at a time. They are also effective for dinner-table decoration. Some use the foliage as a tracing in the form of a wreath on the cloth with bunches of flowers arranged in geometrical form with pleasing effect, and for glasses the flowers are most useful. By taking cuttings at once and growing them on like ordinary Chrysanthemums, plants from 2 to 3 feet through may be had by next autumn. They should be stopped two or three times during spring and summer, but in northern or cold districts not later than midsummer, and they should receive their final shift into 10-inch pots about the middle of June or earlier,

using a rich compost—good heavy loam three parts and one decayed cowdung, with a liberal dash of soot and Thomsou's or Beeson's manure. They should be potted firmly, and be placed in a sunny sheltered position, plunged in leaves or ashes. When they are well established in their flowering pots they should receive an occasional sprinkling of soot well watered in, and on no account should they suffer from the want of water, which often in very hot weather must be given two and sometimes three times a day.

The species I find most useful and liked the best is the common *Chrysanthemum frutescens*, flowering much more freely than the larger varieties, and its foliage is the most pleasing of any I have seen. The variety *Etoile d'Or* has not succeeded so well with me—always more or less affected by a grub (like the Celery grub) which attacks the leaves, and which with us has baffled all attempts at its eradication short of denuding the plants of the affected leaves, and even this is only a temporary remedy, as they reappear in the course of a little time. If any of your readers can inform me how to effectually get rid of this pest I shall feel obliged, as it is a disappointment not to be able to grow this most beautiful yellow variety.

To grow plants 6 or 7 feet through the old plants must be cut back in spring and grown the second year. All flowers must be picked off during summer.—OWEN THOMAS, *Chatsworth Gardens*.

CHRISTMAS GRAPES.

AT no other season are Grapes eaten so generally by both the upper and middle classes of this country as during the festive Christmas-tide. With many of the former the order of the day is, Grapes to breakfast, Grapes to luncheon, and of course Grapes to dinner, clearly showing that the demand for this wholesome and delicious fruit has become year by year greater and greater. It would be instructive and interesting to know something of the difference between the quantity of Grapes now consumed annually, compared with that of twenty years ago. I venture to predict it will be at least tons against hundredweights.

Notwithstanding this great increase in the consumption and ever-restless energy of British pomologists, it is surprising how slow we are in producing new varieties superior to those already in cultivation. My object in writing this is to mention some of the best known varieties, and those that have given most satisfaction. Amongst white varieties stands pre-eminently the grand old Muscat of Alexandria. It is a pity that so much difficulty is experienced by many in producing this Grape in first-class condition on Christmas day. Some gardeners, myself included, have made great mistakes in trying to grow this Grape in late span-roofed vineries standing north and south. Especially is this the case in Scotland and the north of England, where the sun's influence is less felt than in the south. When properly grown and thoroughly ripened Muscat of Alexandria can easily be kept fresh and plump to the end of the year, but unless the Vines are exposed to the full benefit of the sun's rays during summer, the fruit fails to colour to that deep bright golden yellow we so much like to see; unless well coloured long before Christmas the fruit begins to shrivel. Next in point of merit stands the Duke of Buccleuch, but unlike the Muscat of Alexandria I find the Duke does better in a span-roofed house than in a lean-to. When this grand Grape is kept into December its flavour becomes rich and luscious, and has a honeyed sweetness peculiarly its own. It may with safety be placed in the most select dessert without fear of fault being found with either its size or quality.

Trebbiano I consider the next good white Grape we have for this season, and this variety is not particular as to whether it is grown in a span-roofed or lean-to house; but like the Muscats the more light and room it gets to develop its large leaves the better coloured and flavoured will its fruit prove to be. Its bunches being large and handsome are always attractive both on the Vine and dessert table.

Of the black varieties there are more to choose from. West's St. Peter's has long held a foremost place as a Christmas Grape. Taking it all in all perhaps there is no superior black variety; its juicy, sweet, tender flesh is at all times refreshing and pleasant, therefore, though somewhat small in bunch and berry, it cannot be ignored in collections of winter Grapes he they ever so select. Mrs. Pince's Black Muscat is perhaps the richest flavoured black Grape we have at the end of the year, but like all Muscats I find the best results are obtained from Vines grown in lean-to houses facing the south. In order to have this Grape in first-class condition it is of great importance that the previous year's wood be thoroughly well ripened, otherwise it is almost certain to set its berries unevenly, and many stoneless.

Gros Guillaume is a splendid variety, and when properly grown its noble bunches and large berries never fail to draw forth admiration; its tender, juicy flesh and refreshing flavour make it pleasant to most palates. I cannot understand why some people persist in calling this a coarse Grape; with us it has always given the greatest

satisfaction. Many other varieties might be mentioned, such as Alnwick Seedling, Gros Colman, and Gros Maroc, which are said to be at their best about Christmas. These, with their magnificent berries, always look well and imposing upon the Vines, exhibition stands, or in fruiterers' shop windows; but when placed with those previously named they at best can only be classed as of second quality. Such sorts as Alicante, Lady Downe's Seedling, Raisin de Calahre, and White Tokay are not usually at their best until February or March. It is most important in the management of Grapes for winter and spring use that the roof of the house in which they are grown be watertight, and in order to produce them in their best condition it is absolutely necessary that the house be devoted entirely to them. Nothing is so detrimental to the keeping and well-being of ripe Grapes as moisture, no matter from what cause it arises.—J. MCINDOE, *Hutton Hall Gardens*.

WINTER AND EARLY CUCUMBERS.

I REMEMBER the late Mr. James Small, nurseryman, Colnbrook, telling me some twenty-five years ago that once in the early days of forcing Cucumbers he took seven to a London fruiterer in the end of March or beginning of April, and received for them the almost fabulous sum of £7. This was in the good old time, when forcing early fruits and vegetables was generally done by means of flues, fermenting stable litter, spent tanner's bark, and leaves from the woods, and before the advent of cheap glass and the general application of the system of heating plant houses by means of hot-water pipes, and before market gardeners had been handicapped by foreign competition. There were then no rapid means of communication for transporting choice perishable fruits and vegetables from France and the Channel Islands, or even from Cornwall and other early English counties, to the London market. How very much things have changed since then, and how greatly has the cultivation of the Cucumber improved since McPhail wrote that "Dung is the only thing yet found out by the heat of which the Cucumber may be advantageously cultivated." I wonder how our market gardeners could produce the enormous quantities of fruit that they do now if they had no other means of obtaining heat than that derived from decomposing manure. There are many growers in the vicinity of large towns all over the country, and Cucumbers are grown by the million in some establishments. It has puzzled me many a time to know where they find a market for them all. There are several market gardens in this neighbourhood where Cucumbers are produced by tens of thousands yearly from span-roofed structures built specially for the purpose. They are 12 feet wide, 9 feet high, and many of them as much as 300 feet in length. The variety principally grown in this district is Cardiff Castle. They are not grown on what is termed the "express or non-ventilation system," as practised by some of our modern cultivators, but air is admitted in the usual way when it is necessary. With proper attention Cucumbers and plants may be grown satisfactorily together, but in the case of market gardeners where great quantities are produced for sale they should be grown by themselves.

Here there is no Cucumber house, and I grow Cucumbers, Melons, and Pine Apples together. The house, which runs north and south, is thoroughly heated top and bottom, is span-roofed, 22 feet wide, 13 feet high, and 60 feet in length, with a bed in the centre for Pine Apples, and a bed or border, 2 feet wide and 18 inches deep, round the sides for growing Cucumbers and Melons. The roof is trellised rather more than half its length. When training the plants we use two light trestles, placed opposite each other on the side paths, and these support a strong board resting on them over the tops of the Pines. By this means the Cucumbers and Melons can be tied, stopped, and trained at any time without doing injury to the Pine Apple plants, and the foliage of the latter is very little drawn by the Cucumbers and Melons growing over them. The crops obtained from all three are as good as could be wished. The seeds of the winter Cucumbers are sown the first week in August in 48-sized pots filled with leaf mould. They are then watered, and a piece of glass placed over the top of the pot until they germinate. As soon as the plants are large enough to handle they are transferred into 4-inch pots in a compost of half leaf mould and half loam, are kept in a close frame for a few days, and shaded from strong sunshine till the roots have taken hold of the soil, when air is admitted.

After the plants have grown to the height of 6 or 7 inches they are placed out in their permanent quarters, the compost of which consists of three parts good rich loam and one of leaf mould, with a little soot and wood ashes added. In preparing it the loam is chopped into small pieces, and the leaf mould is passed through a rough sieve, all the small pieces of stick being picked out. After this both loam and leaf mould are roasted separately for a little time in one of the ash pits under the boiler furnace hats to kill the eggs of aphides, worms, and insects. Before adopting this plan the plants used to get infested with green fly every time the bed was top-dressed with leaf mould.

I now slightly roast all the soil and leaf mould I use for potting purposes; it kills insects and their eggs, and the seeds of weeds that may be in it, and does no injury to the productiveness of the soil or otherwise. After the roasting process has been completed, which does not take long, all is thoroughly mixed and incorporated together, and about 4 inches of good dung spread over the stone flags at the bottom of the bed. The whole of the bed is filled at once, and the soil pressed firmly down to the level of the curbstone.

In the course of a few days when the soil is thoroughly warmed, the plants are turned out of their pots and planted to the depth of their cotyledons at the distance of 4 feet apart. They are then tied to a stake and trained with a single stem till they meet the trellis, and allowed to grow to within a foot of the top of it before they are stopped. They are trained thinly over the trellis, and in a short time the roof is covered with strong healthy laterals which produce fruit fit to cut in eight or nine weeks from the time the seed was sown. The lateral shoots as they grow are stopped at the first leaf beyond the fruit, and as the demand for Cucumbers in private places at this season is not great the plants are cropped lightly until they are well established; after which they will continue fruiting freely till the month of May, or longer if required. All fruits not required, male flowers and tendrils, are pinched off as soon as they appear; and all leaves as they show signs of having performed their functions are removed.

The atmospheric temperature in mild weather is kept steadily at 70°, and the bottom heat at 80°. When the weather is fine the ventilators are opened for a short time in the middle of the day to admit fresh air, and the plants gently syringed early in the afternoon to prevent red spider and to keep them in a healthy growing state. Besides this the beds receive copious supplies of liquid manure and top-dressings of leaf mould and loam when required. Cucumbers grown here, under the conditions described, never fail to give satisfaction to the cultivator and others who have an opportunity of seeing them.—A. PETTIGREW, *Castle Gardens, Cardiff*.

FIRE BARS.

In a Wright's boiler one of the fire bars burnt itself away at the end nearest the fire door and dropped through. I took all the bars out and rearranged them minus the burnt bar. This allowed 1½ inch more play for the bars. I am pleased to note that I am a gainer in heat, this being steadier with no increase in consumption of fuel. The ashes will be coarser, but as I riddle them there will be no extra waste there. I had long thought the close bars did not allow sufficient draught. Certainly I might increase it by drawing the damper, but this is waste. There are now thirteen fire bars 3 feet 2 inches long, depth in centre of bar 4 inches, running down to 2½ at the ends, thickness of bars at the under side in the centre half inch, at the ends three-quarters.

Accidents frequently lead to better results, and when I put my hand on the boiler at night and again in the early morning I am pleased that the fire bar is missing. My stokehole is well built and protected from cold winds, and I never leave the door open unnecessarily. I often think what waste there must be in out-of-door fire holes. No water is kept under this fire.—STEPHEN CASTLE, *West Lynn*.

APPEARANCE v. FLAVOUR.

I AM afraid that in our eagerness to obtain varieties of fruit and vegetables which are good in appearance and of easy culture there is a danger of losing some other qualities which used to count for something—notably that of flavour. Of course, the majority of people who live in cities and large towns know nothing about flavour in vegetables. Peas are Peas, and Cabbages are Cabbages to them, and nothing more. It is nearly as bad with the majority of the nobility, for they seldom have vegetables fresh and well cooked except on those rare occasions when they pay flying and unseasonable visits to their country mansions, leaving the professional cooks behind them in town, and then they are astonished to find that they enjoy the vegetables.

But how is it, I would ask, that the average country squire and the village parson are content to follow the fashion of growing things which please the eye and disappoint the palate? Growing for market is a different thing altogether. The eye is the only member to be studied in this case. Strawberries 2½ inches across and well coloured, but without any flavour, will always fetch a higher price than average British Queens. That is taken for granted, and need not surprise us when we consider that very few of the purchasers know what they are buying; but I may remind epicures that British Queen with all its faults is still the best-flavoured Strawberry in its class. I say advisedly in its class, because some people, myself among the number, prefer the Hautbois. I have, however, never succeeded in growing the Hautbois well. Perhaps some of your readers could tell me how to do it. If Strawberries are required in autumn none equal the Alpine varieties, seed of which should be sown in a frame in spring and planted out a foot apart in the end of May.

Perhaps the most glaring instance of appearance and ease of culture superseding quality is to be found amongst Grapes. There is as yet no Grape to surpass a well-grown Black Hamburgh, but there are not half so many Vines of this variety planted now as formerly, and such an inferior variety as Alicante is offered abundantly for sale early in July. Worse varieties follow as soon as they can be coloured in the shape of Alnwick Seedling, Gros Maroc, and Gros Colman.

Within the last three years I have known fairly good Hamburgs hawked about the streets at 1s. 1b., while Alicante was exhibited in the shop windows at 3s. or 4s. 1b. Were I a gentleman able to keep a gardener I would tolerate no worse Grapes than Black Hamburgh on my table before February. I must think that the sale of Grapes which are good-looking but are acid and coarse does a great deal of harm in a city of invalids as Bath is. Grapes are recommended by the physician, and the most beautiful-looking bunch in the city is eagerly bought by a loving friend of the invalid at a high price. But it disappoints the patient, it produces indigestion and acidity in the stomach, and Grapes are pronounced unsuitable. Possibly in the end the vendor suffers most.

It is a source of gratification that the Muscat is not yet left out in the cold, perhaps it has been shown during the past autumn in as good a condition as it was ever seen. But the reason it is cultivated extensively is not because of its flavour, but because it is still the most handsome white Grape in existence. I almost hope no one will succeed in raising a variety which equals it in appearance, and is at the same time inferior in quality. Had Alicante never appeared we should have made more progress in the cultivation of the Hamburgh, but at the present time I am of opinion that we are going back not only in quantity with the last-named variety, but also that such as are grown are not grown so well as they were a few years back. I think I do not make a mistake when I say I have not seen a good bunch of Black Hamburgh this year.

Amongst vegetables I could name several instances where quality is giving way to appearance, but one shall suffice. The old Scarlet Runner Bean is fast going out of cultivation. But if anyone supposes he gets the same flavour in any of the so-called improved varieties he makes a mistake.—WM. TAYLOR.

THE FLORISTS' TULIP.

THOSE who know and cultivate the Tulip cannot but regret that it is so much lost sight of now, and therefore all the more deserves a word of kindly remembrance and advocacy.

All interests and friendships spring up anew, as if in bloom, at Christmastide; and the Festive Number of the Journal will be a gladsome opportunity for contributors to express a Christmas welcome to a favourite flower, or one that, being for the present popular, is expected to receive every possible attention and recognition. But outside the circle of specially attached admirers, the Tulip, a peculiarly interesting and noble flower, blooming on the frontier line of spring and summer, has fallen on neglectful days.

Its very name is chiefly associated now with those ready-made abundant bulbs from Holland that come for one bright bloom of conservatory life, or are employed in bedding as one of the changes in colour work, until their petals fall and they suffer a sudden, perhaps a rude, upheaval in favour of such plants as will next keep up appearances. I cannot help thinking that no plant is truly understood and cared for, that is only thought of and valued when seen in bloom. The greater and the not least interesting parts of its life and habits are never known to those who look at only flowers. Hence, from the Auriculas to the Orchids, I have never had a plant whose daily life I could not watch and tend. This is but the common story of any florist with his favourites. They are near and dear to him—flowers of the bosom and not of the button-hole; and when the care they need is more than he can any longer give he feels the time has come to part from them.

Foremost in the attractions of our florist Tulip I would place that wondrous property in the physiology of the plant which has no parallel in any other that I know, but which may be illustrated, though the analogy is not perfect, from the insect world. Just as a butterfly began life as a caterpillar with great expectations, so the flower of the seedling Tulip is but as the "larva" (mask) of what shall be its completed form. Beautifully marked as it eventually becomes with some bright colour on its pure ground of white or gold, it has at first, and perhaps for many after years, flowered in a plain self-coloured form, in some shade light or dark, brilliant or dull, of violet brown or red.

Tulips in this stage are technically known as "breeders," probably because of the greater vigour and fecundity they possess at this period of their life. When they pass through their great change they are said to "break" or "rectify." With many a slip between, of greater or less gravity, the breeder Tulip finally settles

down in life in one of the two recognised and valued forms of marking known as "feathered" and "flamed."

In the feathered flower the beautiful pencillings of colour are confined to the petal edges, the ground colour of white or yellow remaining spotlessly free.

The flamed flower possesses the same rich unbroken feathering, but there is added, upward from the "eye" of the flower and most solid at the base, a strong and flashing colour which forms the "flame," and with its sharp tongues leaps into the feathering. When there are several rich tints of cognate colour in the beam of the flame the effect is extremely rich. This brilliant combination occurs in such finely flamed flowers as Willison's Sir Joseph Paxton, Hardy's Talisman, Barlow's surpassing break of Polyphemus, Hardy's Ajax, Storer's Orion and Dr. Hardy, Martin's Annie McGregor, Barlow's Rose Celestial, and many others.

As well-marked instances of how greatly the fertility of the breeder form may subside in a superlatively fine break, I may mention a feathered strain of Hepworth's Lady May, which Mr. Barlow has had for twenty years, and of which he kindly gave me the second, and, so far, the only other bulb. Still more remarkable was our peerless Kate Connor, feathered, which we had between us for more than twenty years, and, up to the time of her accidental death in 1870, with never an offset at all. Kate is unattractive in the breeder form, and there has never been another such beauty in the family since. Nothing but the clumsy comparison of a sealing-wax scarlet on a pure white ground can describe the complexion of that feathered Kate.

Where the analogy of the Tulip to the caterpillar does not hold good is that the flower in its transition has no state correspondent with the pupa or chrysalis of the insect; none intermediate between its temporary and final form. If it but partially assume its matured state, either by confused markings or by not throwing the "mother colour" off, it is but a "bad break," and would become the founder of an undecided and worthless strain; though all its offsets, not born in the actual year of their parent's fall, have their blood untainted of evil, and the one chance in their life still not marred.

The late Dr. Hardy of Warrington, to whom we owe so much in the scientific literature of the Tulip, and also some grand varieties, used to say that when a seedling did not break in twenty years he threw it away as "too hard." Some are certainly most obstinately "solid," and one that my father raised in 1862 has only broken for the first time in 1886 well flamed.

Again, the insect has a definite time for its changes, but the Tulip none. An offset may "break" before its parent bulb, and live to see its great-great-grandmother a "breeder" still. Every break from the stock of any one breeder is a "strain," good or bad, of that variety; and every worthy break should in common fairness be kept to the name of the flower of which it is a break. It is a different thing from the "sport" in a Carnation, which is always into another class, or in the Chrysanthemum, where the sport colour makes a different flower of it. Breeder Tulips are judged and named when they first bloom as seedlings; and it is very wrong and confusing to give, unless in honest ignorance, a new name to a fresh break of an old breeder. From this cause a novice might buy Charmer, Mrs. Lomax, Mabel, and Pretty Jane, and find they were all but so many breaks of the same Rose breeder—one of Martin's. The term "rectified" more particularly applies to the higher type of change—the "feathered" flower: higher because gentler, fairer, purer, rarer, and only not in disparagement of the perfectly "flamed" state, which is a greatly valued and magnificent type.

There is no organic addition of new and more glorious parts in the rectified Tulip as in the perfected butterfly. Sometimes a flower looks of better shape in her rich court costume than in the pinafore petals of her younger years, when the old plain morning gown of the breeder petal vanishes entirely, and is replaced by that ground colour which may happen to be that of the eye or base of the flower, while the marking is something wonderfully new. When a flower breaks into colours duller or otherwise weaker than that of its breeder form it is said to "break badly," a different thing from a "bad break." Some of the loveliest breeders do this, and therefore every break from them is a misfortune.

Occasionally a seedling will appear rectified at its first bloom, and so have never been seen in its breeder state. However, since it will be from five to seven years old before it can flower at all, it has had time to break during the long term of its bloomless childhood.

If it be asked why we prophesy before we know, and affect to tell this before ever seeing floral proof of it, I may explain that the foliage of the rectified Tulip is distinguishable, being mottled or streaked with lighter shades of green, while "breeder grass" is invariably "solid"—that is, of one rich shade unmingled.

Vast interest attaches to breaking out the breeders, and everyone looks anxiously over the rising foliage for the streaky dawn of

hope no more deferred. But when they break, or how to break them, no one knows or ever will know. It is all hidden in the silent mystery of the flower's nature. Many coaxings and many hardships, many bribes and many tortures, have failed to elicit it. Eccentric and dangerous experiments have been tried, with different results and no revelations. Perhaps lowest in the scale of all unnatural absurdities suggested or attempted, we may reckon such atrocities as stitching an obstinate breeder with an embroidery of coloured thread to match the new dress it is desired to put on! or the idea (resplendent in its very enormity) of grafting the half of a rectified bulb upon the half of its refractory breeder!

Naturally, if the bulbs are vitally bisected the result is a dead failure—but, alas! not necessarily a disproof. For if the rectified half happens to have had the young shoot of bud and foliage left in uninjured, (something like the advantage which the tail leg of mutton may be held to have over the other leg), it may not perish. The Tulip bulb will bear many things so long as the radical plate and the leaf germ are not destroyed. Hence it is just possible that at any time might some such vivisector confront us and say in triumph, "Look here! See that grand break? Know how I did it? No? Well, you should do as I do—graft 'em."

Nay. If there be a way at all it is probably one that is grateful and not contrary to laws of health. Like as we all rejoice in change of scene, with all its helpful differences from the worn familiar round of life, so also the breeder Tulips seem to do. Change of soil, and especially of locality, are oftentimes coincident with changes in themselves, and we may account it due to the newness of such surroundings, but we cannot know for certain.

This deeply interesting and unique property of the Tulip is properly the most enjoyed by him who is the most entitled to the reward, the raiser of seedlings. A perfect break from one already known is much delight, but nothing compared to the double interest of first blooming a seedling of high qualities, and then watching the sunrise of expectation break into the perfect day of hopes fulfilled, perhaps transcended.—F. D. HORNER, *Burton-in-Lonsdale*.

(To be continued.)

OAK TREE DECORATIONS.

IF any of your country readers would like to furnish themselves with an appropriate and very pretty table decoration for May Day, let them sally out at once to the nearest clump of well-grown Oak—the bigger the better—and with walking-stick or umbrella-point let them turn over the wet leaves lying in patches under the new barren branches.

That the leaves will be found in patches is due to various causes, chief amongst them being the unevenness of the ground, and in the larger and deeper depressions the leaves will be lying in the thickest layers. Under these and close to the ground will be found abundance of acorns, which, thanks to constant moisture, have already started into growth. Let a pocketful of these be collected, and care taken that they do not get dry. Returning home, let your reader take three or four flower-pot pans, of from 6 to 8 inches diameter, and well wet two or three handfuls of cocoa fibre refuse. Placing a layer of this at the bottom of the pans, and scattering over it a dozen pieces of charcoal about the size of small hazel nuts, let him or her (as the case may be) lay the acorns upon it (on their sides) at the distance of about 2 inches from centre to centre of each acorn; then cover them with wet cocoa fibre to the depth of an inch. When gently pressed down, another dozen or so of charcoal "nuts" should be mixed with this covering.

The three or four pans thus filled should be placed in varying positions so as to insure a succession of growth. One may be placed in an intermediate or warm house, another in a cool greenhouse, a third in a cold frame, and a fourth in a sunny window. If care be taken to keep the fibre constantly moist (not flooded), sooner or later in the spring a very beautiful little grove of young Oaks will make its appearance in each pan. When these are from 4 to 6 inches high the pans, placed in vases, bowls, or deep plates, will be the source of much pleasure and admiration to all who see them.

Deep vases or bowls should be filled with moss or other soft material to such a height as when the pans are put into them the rims of both may be level, and if a little moss be placed over the two rims, and thinly inserted over the surface of the pan between the little trees, the effect will be much enhanced. These "groves" retain their freshness and beauty for a long time if due attention be paid to keeping the pans moist and the leaves clean. When they show signs of distress the "treelets" should be removed from the pans and planted three together in 48-pots. These should be plunged in a shady spot, and if lifted in the following spring and gently forced, will make charming decorations for the drawing-room or entrance-hall. A single "treelet" planted in a thumb pot, and treated after the manner of the Chinese, will in two or three seasons make a sturdy little tree only a few inches high, but "the very picture of his father."—T. B. WELLS.

CHEAP AND GOOD ICE HOUSES.

CALLING at Rangemore in September we were impressed with the great improvements that had been carried out in the extension of the pleasure grounds since our former visit; with the fine crops of Muscat

Grapes; excellent new bothies, and a splendid club and reading room erected by Lord Burton for the residents on the estate. But something plainer than all these arrested particular attention—namely, some simple structures in which ice is kept all the year round. In compliance with our request Mr. W. Bennett, the head gardener, has favoured us with the annexed plans and specifications, which cannot fail to be of service to those of our readers who desire to provide efficient ice stores at moderate cost.

"Some few years ago," writes Mr. Bennett, "the Duke of St. Albans,

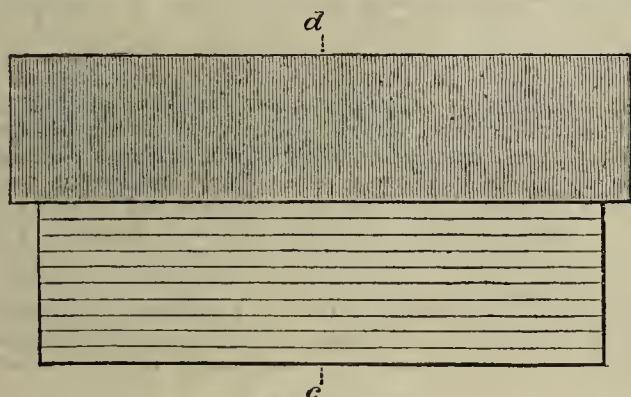


Fig. 78.—Side elevation.

when visiting here, kindly invited me to pay a visit to Bestwood to see His Grace's gardener there, Mr. Edmonds, and a very pleasant and instructive day I spent. Among other things taken a note of was a very economical and, according to Mr. Edmonds' report of it at the time, a most satisfactory way of keeping ice, and such I have proved it. I understood Mr. Edmonds to say he had seen it at some other place. I now enclose you a rough sketch, showing the smaller of the two houses we have here. They are made close to the ice pond, so that the ice can be broken and thrown directly in. This small house lasts all the summer months, the larger being reserved for autumn use.

"The sides are composed of 6 by 1½-inch common white deal boards



Fig. 79.—Section through a, b.

nailed to railway sleepers bought from the railway. They are creosoted and last well in the ground, in which they are placed 3 feet deep and 3 apart; purlins are 7 inches by 3, deal; wallplates, 4 inches by 3; principal beams, of which there are four to tie the building together, 4 inches by 4; rafters, 3 inches by 2, 14 inches apart.

"The roof is thatch of a good thickness to keep the place cool. All the space between the principal beams and the roof is left open, so the air has a free passage right through. This, I think, is the secret of success. If you consult section c, d (fig. 82), you will see the house represented

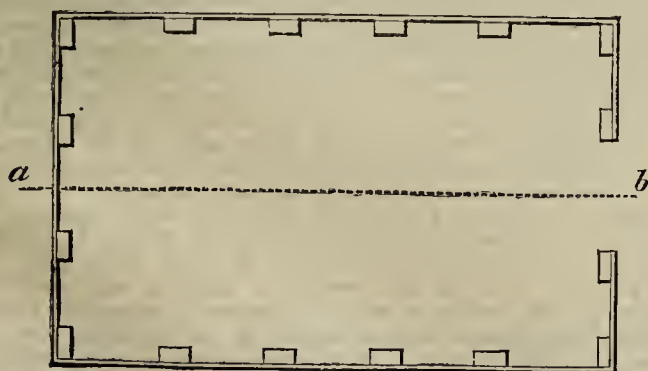


Fig. 80.—Ground plan.

full of ice; the bottom has a layer of faggots for drainage, and a foot of sawdust is put round the outsides of the building as the ice is put in.

The ice is broken up fine outside on a brick platform. The ice is completely covered with the sawdust. I may add we have two large expen-

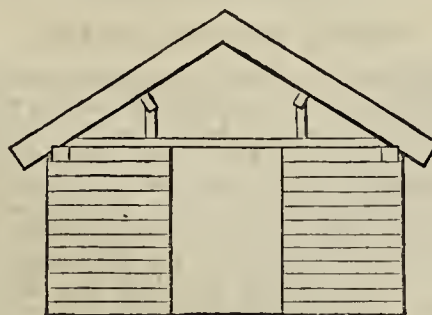


Fig. 81.—End elevation.

sive structures of an egg-shape built in the ground; these we never use now. They used to take a week to fill; with the same ice we can fill the present ones in three days, besides saving horse hire."

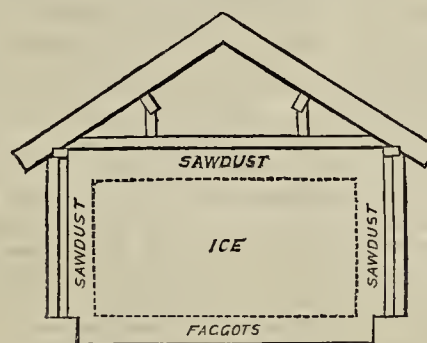


Fig. 82.—Section through c, d.

[In filling the houses moveable boards are placed round at the distance from the sides indicated in the section, and the space filled with sawdust; then as the ice rises to the level of the top of the boards these are simply drawn upwards, so continuing till the work is completed.]

GARDENERS' GAIT.

THERE is a circus in our neighbouring town which is constantly producing fresh wonderful feats of men and animals to attract sightseers. But I can produce as rare and interesting a sight for your readers, I think, as any which are to be found there. What is it? A gardener who runs at his work! Walk up! Front and reserved seats free to all gardeners! Runs, habitually runs, not because he is cold, not because anyone is looking on, but simply from zeal. Such a nimble hearty run to and from his work, and to fetch fresh tools, that it would puzzle many to catch him.

I began to take an interest in, and to watch gardeners before I was old enough to work myself, and now I can do hard work no longer, but I never saw anything like it before.

A neighbouring farmer, who has had much experience in the employment of labour in the colonies as well as in England, saw it unperceived, and wondered much. "I can't understand it," he said; "but," with a shake of the head, "I don't think it will last." But it has lasted. Come and see.

As a sickly child I was accustomed to sit on a handle of the wheelbarrow, and watch at his work the dear old man from whom I think I got a great deal of my love of gardening. And when he said to his subordinate, "Jim, just pop and fetch a besom," I used to look at Jim as he "popped," and wonder how that little short word, so expressive of alertness and energy, could be applied to the deliberate and shambling gait of Jim, the under gardener.

And I can remember another good old gardener, a model of neatness in his work, to whom I should be pleased to offer one of my most comfortable reserved seats—for he does not know to this day that I have seen him come to a flower bed just before eight in the morning with a barrowful of tools, spread them all out for the master's eye to see, just scratch the ground, and then go home to breakfast. Capital hands, both of them; much better educated, much better gardeners, but, with intelligent supervision, give me the running man. How can his assistant idle, when the superior comes back to his work like a hunted deer, and takes his tools and goes ahead, as if a flood was coming, and working for bare life? A man like that may be ignorant, but he is so zealous that he must learn; he cannot help it. If he clearly understands what is to be done, it will be done, if possible, without a thought of himself or his own dignity.

His employer was away from home; the Strawberries had to be sold; he could not get his price at the shops, so he cried them in the streets, and hawked them from door to door—and got it.

He has his faults, but, with supervision, the zeal covers them all.

Under gardeners, this is the spirit in which to get on. Go at your work with zeal. Run at it. Go at your book work and your bodily

work with a run, with your heart in one and your hack in the other, and you will be mounting the long ladder every day.—W. R. RAILLEM.

ROSES OF THE YEAR.

As, to the politician there are always three courses open, so the above heading may be considered to have a threefold interpretation, and to refer either to the new varieties sent out in 1886, to known varieties that have come prominently and to an abnormal extent to the front throughout the season, or to individual blooms whose extra-perfect development won them especial distinction and caused the recollection of their surpassing beauty to linger long after the impression made by the great mass of other blooms exhibited has faded from the memory; and therefore perhaps it may be excusable to make one heading cover a brief reference to the earliest display of the attractions of the little-known varieties, and to well known varieties, latest display of especial attractiveness.

Referring to the novelties that have as yet been seen in flower in anything like their true character in this country the name of "Her Majesty" naturally occurs at once as the fit and proper head of the list; but "Her Majesty," mindful no doubt of a royal decree that the Jubilee should not be celebrated until 1887, steadily refused to appear in public during the past season, and is waiting to dazzle us all with an appropriate burst of splendour next July; so that instead of Her Majesty being remembered merely as the Rose of 1886, the year 1887 may rather be recalled as the year of Her Majesty in the Rose as in the rest of the world. Under these circumstances the novelty of the year will probably be generally admitted to the white Tea-scented variety sent from America under the name of The Bride, a Rose which originated in the garden of Mr. J. May of Summit, New Jersey, as a sport from Catherine Mermet. On first hearing of its origin I was not much attracted by the glowing accounts of the merits of this "pale Saint" Catherine, for these Rose sports are generally inferior to their parent in some respect or other—either the flowers lack form or substance, or the plant lacks vigour; but the present instance seems to be an exception, for the plant is quite as vigorous as its parent, is very floriferous, producing large full flowers, only differing from the type in being white with a faint suggestion of lemon at the base instead of being pink. Everyone that has seen it speaks well of it, and one grower lately told me that he had ordered 500 plants of it. Unfortunately, a very poor bloom of it was exhibited at the National Rose Society's Show at South Kensington on the 6th July, which may have given some people the notion that it was of no value; and this tendency to exhibit a flower before it is obtained anything like in character is much to be deprecated, as it only has the effect of prejudicing people against what may be a valuable acquisition. This remark applies equally to the blooms of the H.P. Grand Mogul (Wm Paul & Son) exhibited at the same time, and which scarcely served even to show the gorgeous colour of this brilliant sport from A. K. Williams; and although when shown in good condition later on it was deservedly awarded a first-class certificate by the Royal Horticultural Society, the bad impression made upon those who only saw it at South Kensington on the 6th July will probably remain.

Of course the Hybrid Perpetuals cannot be seen in character their first summer to anything like the same extent that it is possible to see the Teas, but Clara Cochet (Lacharme) is at any rate an immense grower, and I am told by one who has seen it in flower that it carries enormous blooms, something in the direction of Her Majesty as regards size and colour; and American Beauty (Bancroft), another variety from the other side of the big pond, and which for practical purposes may be classed as a Hybrid Tea-perpetual, although correctly catalogued as a Hybrid Tea, flowered well this autumn, and displayed several good qualities, as thus: It is thoroughly autumnal, its flowers are large, well formed, with fine deep petal; it is amazingly fragrant, and its colour is crimson red, which, if it can suppress the lilac tint that is unfortunately present, and that disfigures all the other red Hybrid Teas except Reine Marie Henriette, will complete a useful addition. The Tea-scented Comtesse de Frigueuse (Guillot) has deep petalled flowers of a beautiful clear yellow, and will probably prove an acquisition in this attractive and much-wanted colour. Of the French novelties of the previous season that have held anything like a position during 1886, if we except the dark Horace Vernet, like Dr. Dor, which was well shown at South Kensington, there are only two—the gorgeous dark Hybrid Perpetual Victor Hugo (Schwartz), which, if large enough, is the best of its colour, and the very pretty and distinct Tea-scented Souvenir de Gabrielle Drevet (Guillot).

Of established varieties that came well to the front during

the exhibition season were especially some of the newer Teas, as Grace Darling, Hon. Edith Giffard, and Madame de Watteville, the last being conspicuous at most of the shows; Hybrid Perpetuals that require much sunshine were also noticeable, as Mons. Noman and Star of Waltham (frequently grand). Rosieriste Jacobs, Marie Rudy, Prosper Langier, and Horace Vernet were all often and abnormally fine; while, from southern gardens in particular, some of the light coloured varieties, such as Lady Mary Fitzwilliam, Violette Bouyer, and Duchesse de Vallombrosa were seen in great perfection. But among Rose growers all over the country the year 1886 will probably be remembered as a Reynolds Hole year. From maidens in Essex and Wilts, from cutbacks in Lancashire and Berkshire, from all sorts of plants in all kinds of places, came and kept coming grand blooms of this delightful though not always obtainable variety. In the list of Roses most extensively shown at South Kensington this year, Reynolds Hole came thirty-third, its average position for a period of eight years being only sixtieth, and I should think it certainly was generally exhibited fully twice as much as usual. There is no doubt that Reynolds Hole is like the little girl with a curl in the middle of her forehead—"When it is good, it is very very good." Probably at its best, the finest dark Rose; but it is not every year that it is seen at show after show and in box after box in the grand condition maintained during the season of 1886.

When it comes to notable individual blooms, it appears that Souvenir d'Elise alone was selected as the best Tea in the show about as many times as all other varieties put together; at any rate, five blooms of it were thus honoured to one of Anna Ollivier, one of Innocente Pirola, one of Souvenir d'un Ami, and two of Maréchal Niel. It is true that these two Maréchal Niels managed to get three medals between them, for one of them, having been cut on Monday evening, was decorated at Moreton-in-Marsh on the Tuesday, travelled back to Berkshire on Tuesday night, thence to Birmingham on Wednesday night, to receive there a second similar distinction on Thursday morning.

Among the Hybrid Perpetuals it is not much wonder to find A. K. Williams easily at the head of the poll; and though I do not recall a single instance of Marie Baumann being selected in 1886 as the best bloom in the show, such sterling varieties as Horace Vernet, Charles Lefebvre, Ulrich Brunner, and Lady Mary Fitzwilliam were well represented. The two surprises of the season were probably the selected blooms at South Kensington and Reigate, where Mr. Benjamin Cant's Boieldieu and Mr. T. B. Haywood's Ville de Lyon respectively were honoured. Mr. Cant's marvellously developed bloom was not so perfect in form or colour as some blooms of the variety seen in 1884, but though slightly faulty in outline and pale in colour, the immense size and depth of the bloom more than justified the selection. With Mr. Haywood's Ville de Lyon the most hypercritical could hardly find fault, and it lives in my memory as the bloom of 1886—a veritable giant among its fellows.

It is a pity that neither variety is by any means everybody's Rose, for Ville de Lyon is absolutely useless except as a maiden, and Boieldieu requires a baking season to develop its immense fulness, such as that which fittingly brought it to the front in 1886 as a Rose of the year.—T. W. GIRDLESTONE.

ORCHIDS.

CATASETUM BUNGEROTHI.

QUITE a sensation was caused at Mr. Stevens' sale rooms, King Street, Covent Garden, last Thursday, when the Compagnie Continentale d'Horticulture of Ghent sent three plants of a new Catasetum of a very remarkable character. This species, which is a recent introduction from South America, was figured a short time since in the "Lindenia" under the name of Catasetum Bungerothi, but the attractions of the largest specimen sold much exceeded those of the plant there depicted. Catasetums are generally regarded as curiosities, and although at one time several were cultivated they are now seldom seen except in the largest collections or those noted for their botanical interest. Some idea, therefore, of the horticultural value of C. Bungerothi can be formed when it is stated that after a spirited competition the plant in flower was sold for 50 guineas, and the two smaller ones for 32 and 20 guineas each, these probably being the highest prices that any Catasetums have ever realised.

At the same time as the Belgian plant was sold a specimen was flowering in the admirable collection of Orchids at Studley House, Goldhawk Road, Hammersmith, the residence of F. G. Tautz, Esq. This appears to be the first that has flowered in England, and from it the illustration (fig. 83) has been prepared, necessarily somewhat reduced, but showing the outline of a flower the full size at the upper portion of the engraving. The Studley House collection is rich in valuable Orchids, which are well grown by Mr. Cowley, but owing to the pressure of matter this week fuller reference to them must be deferred to another issue, confining the present notes to a brief description of the new Catasetum, based on the two specimens mentioned.

The plant has stout, conical, or spindle-shaped pseudo-bulbs, 6 to 9 inches high, and $2\frac{1}{2}$ inches in diameter at the thickest part, the leaves

pinnated. The petals are 2 inches long and $1\frac{1}{2}$ in diameter, broadly ovate in form, the sepals being slightly narrower, the dorsal one partly hidden



Fig. 83.—*CATASETUM BUNGEROTHII*.

being broad and somewhat like a Phaius. From the base of the pseudo-bulbs rises a stout raceme of six or seven flowers, much resembling individually at the first glance a magnified *Angraecum eburneum*. The flowers are of a bold distinct appearance and wax-like structure, greenish white when first opening, but becoming nearly pure white when fully ex-

posed. The petals are 2 inches long and $1\frac{1}{2}$ in diameter, broadly ovate in form, the sepals being slightly narrower, the dorsal one partly hidden by the nearly vertical petals, and the two lower sepals depressed towards the labellum. The latter organ gives much character to the flower, being heart-shaped, $3\frac{1}{2}$ inches in diameter, and $2\frac{1}{2}$ from the base of the column to the tip, with a yellow depression in the centre leading to a short spur. The column is stout, white, and wax-like, furnished with the two peculiar

cirrho or "feelers" at the sides, which in some *Catasetums* appear to have a special office in assisting the discharge of the pollinia, but whether in this case they have a similar effect has not been tested. In all points the plant may be regarded as a fine addition to the list of remarkable cultivated Orchids. The flowers are durable, those on the Ghent specimen having been open twelve days when shown. The plant is also apparently easily grown and free-flowering, and it may be expected to find a place in many collections.

Catasetums have been regarded as somewhat uncertain plants ever since their strange dimorphic or trimorphic characters were demonstrated. It will be remembered that Lindley formed the genera *Myanthus* and *Monachanthus* on what appeared to be reliable characters, but a plant was subsequently found bearing flowers of both these genera and of *Catasetum* as well. This led to the abolition of *Myanthus* and *Monachanthus* as genera, both being sunk in *Catasetum*. The same peculiar phenomenon of heteromorphism may be observed in species of *Cynoches* and *Renanthera*. All the *Catasetums* are interesting structurally, but *C. Bungeorothi* is far the best we have yet seen from a cultivator's point of view.

It may be added that Mr. Tautz grows his plant in a basket suspended in a stove with *Phalenopsis* and similar heat-loving Orchids.

HABENARIA MILITARIS.

Amongst many beautiful Orchids at the sale previously mentioned a plant in flower of *Habenaria militaris* was shown, a brightly coloured and distinct terrestrial species. The lip is long, flattened, and four-lobed, something like the *Calanthes*, and of a bright rosy scarlet tint, rather suggestive of *Impatiens Sultani*, but with more of a scarlet hue. The sepals and petals are greenish and inconspicuous, the lip being furnished with a curved spur $1\frac{1}{2}$ inch long. The flowers are borne in a close terminal raceme, the leaves being green tessellated with white or a lighter shade of green. This Orchid could, no doubt, be grown in a cool house, with somewhat similar treatment to that accorded *Disa grandiflora*, and if it could be induced to thrive and flower freely the colour would render it a welcome addition to such houses.

ODONTOGLOSSUM ALEXANDRÆ STEVENSI.

In 1884 an excellent coloured plate of this beautiful *Odontoglossum* was published in Williams' Orchid Album (plate 127), which was prepared from a plant flowering in the Duke of Sutherland's collection at Trentham, then under the charge of the late Mr. Z. Stevens. When this specimen was offered for sale last week it caused some little excitement amongst the leading orchidists who assembled in goodly numbers to bid for the prize, and after considerable competition it was sold for eighty guineas. The plant is a very healthy one, and had a panicle of thirty-seven fine flowers, white heavily spotted with cinnamon brown exactly like the Orchid Album plate, the petals broad, and the whole appearance very striking. It afforded a good example of the substantial prices the best varieties of Orchids invariably command.—L. CASTLE.

HOLLIES.

FOR the past fourteen years I have taken a special interest in the Holly, believing it is worthy of more attention than it generally receives, with the result that at the present time we have fully 100 fine specimen trees, pyramidal in form, varying in height from 10 to 22 feet, and from 6 to 10 feet in diameter at the base. The plants of Silver Queen and Hodginsi Hollies are especially fine. The attention I give them is as follows:—I annually prune the strongest shoots of the previous year's growth except the leader, with the result the trees are better able to withstand strong winds and heavy falls of snow. I find April the best month for pruning, as the young growth immediately following soon hides any appearances of pruning. Attention to moving them where required is of great importance, as overcrowding soon spoils them.

The following is our simple mode of procedure:—First, we dig a hole to work in at a safe distance from the centre to avoid injuring the roots and at opposite sides of the tree, then tunnel under the tree sufficiently to allow a board to be passed through. The board used is 2 feet 6 inches in length by 10 inches in width, with iron frame, which forms at the end two strong horizontal handles, through which four strong cords are passed for lifting purposes. Having carefully worked round the tree until it rests on the board we can then remove it to the position required. After transplanting during dry weather the tree is watered, and a mulching of short grass is beneficial in preventing a too rapid evaporation.—WILLIAM KIPPS, *Walton Lea Gardens, Warrington*.

MUSCAT GRAPES SHRIVELLING.

I, LIKE various other correspondents, have been troubled with Muscats shrivelling for the first time this season. The vinery is a lean-to and is ill south, the border is inside at present. The Vines have been planted two years, Muscat of Alexandria and Gros Maroc alternately, the latter variety being planted with the idea of using the pollen for setting the Muscats. The canes were started in February, they broke very strongly, and each Vine was allowed to carry from two to four bunches. Both varieties came in bloom at the same time, and they both set well. They appeared to do very well till they were ripening, about the first week in September, when the Muscats showed signs of shrivelling. The border was examined and found to be rather dry. A good watering was given at once in the expectation of the evil ceasing; but it made no difference, the berries still continued to shrink steadily. I am thus led to believe it

was caused by atmospheric conditions, as we were keeping up a pretty good fire heat, with plenty of air on favourable occasions, to assist the ripening of the wood, which was rather unripe, and I think the fire heat dried up the necessary amount of moisture for the sustenance of the fruit. This experience goes to disprove the statement of Mr. R. Kirby, page 527, regarding old Vines, for these are cropped for the first time, and still they have shrivelled.—JAMES B. RIDING, *Poles, Ware, Herts*.

POPULAR APPLES.

ALL interested in Apple culture know that there are numbers of varieties, good, bad, and indifferent, to select from, but I doubt if many readers are aware that there are 720 sorts recognised as being distinct, and another 430 synonymous, to further confuse the inexperienced. It is an impossibility for any private grower to give all these, or even a tithe of them, a fair trial, and those who venture to offer selections must, to a great extent, rely upon personal observation and information gleaned elsewhere than in his own immediate vicinity. I attach more importance to the educational value of fruit shows, or fruit classes in connection with horticultural exhibitions, than some are disposed to do. It is there that the finer sorts are to be seen at their best, and the exhibitors are always ready to impart any information concerning them. It may be urged that only the most showy varieties are exhibited, and, to a certain extent, this may be true; but if Apples both showy and fairly good in quality can be found, these are the sorts to cultivate, especially if known to be prolific. Dessert fruit cannot well be too attractive, "appearance being everything" in the case of fruit to be sold, while even in the case of kitchen Apples their value for marketing purposes is considerably enhanced when they are highly coloured. The most valuable varieties are those that are available for either dessert or culinary purposes, and those especially who propose to re-graft a number of old trees, or to plant a new orchard, should bear this fact in mind. This season I have had good opportunities of closely examining a great number of Apples, both on the trees and the dishes at exhibitions, in the counties of Wilts, Somerset, Gloucester, Dorset, and Devonshire, and what is found to be profitable and good in these districts may also be recommended for other, less favoured it may be, localities.

Dessert Apples.—What I believe to be the best, given somewhat in their order of ripening, are as follows:—Joaneting, very early and fairly prolific, but must be eaten at once. Irish Peach, the best early, handsome and good in quality, succeeds either as a bush or a standard tree, and rarely fails to bear well. Devonshire Quarrenden, a vigorous and prolific variety, the fruit are crisp and good, and keep well. Benoni, little known, but deserves to be more generally cultivated, no variety surpassing it either in appearance or quality during the latter part of August and September. At Sherborne Castle it succeeds admirably cordon-trained, and Mr. Pragnell has formed a high opinion of its merits. Red Astrachan, one of the showiest early varieties, of good habit, very prolific, and of fairly good quality if gathered and eaten at once. Beauty of Bath ripens in August, of good habit either as a dwarf or standard, bears abundantly, and the fruit are very handsome and of fairly good quality. Summer Golden Pippin, suitable for dwarf trees, bears well, fruit small, attractive, and very good in quality. Kerry Pippin, another small-fruited sort of dwarf habit; a great bearer, of excellent quality, and available during September and October, one of the best. Wormsley Pippin, dessert and culinary, good for orchards, a good bearer, and fit for use during September and October. American Mother, a showy October variety, and a favourite with most growers that have it true. Gravenstein, a capital variety, and should be in every collection. Have seen it good cordon, bush, and standard trained. It rarely fails to bear well, is of "taking" appearance, of excellent quality, and available during October and November. King of Pippins is very well known, and this excellent variety is particularly good this season. Scarlet Pearmain, good variety for small gardens, and with us rarely fails to bear well. It is handsome, good in quality, and in season from October to January. Cox's Orange Pippin is one of the most popular sorts in cultivation; it is very suitable for bush or pyramidal training, a sure bearer, and with us is at its best from October to January. Court of Wick, small fruited, moderately strong grower, bears well, and is good from October to the end of February; a thoroughly good variety. Mannington's Pearmain: Have seen this doing well both bush and cordon trained, and is a favourite with all who have it, a sure bearer, fruit small and pretty, is good during November, and keeps till March.

Ribston Pippin, an old favourite, unfortunately much liable to canker, to be seen at its best at all West of England autumn shows, notably Exeter, Bath, and Bristol. In this neighbourhood they have a spurious form of it, this being a better grower, but inferior in both appearance and quality. With us it is at its best during November and December. Margil much resembles the Ribston Pippin, and hereabouts is quite as much affected by canker, but does better on lighter soils. It forms a good bush or small standard where sheltered, is a sure cropper, and keeps rather better than the Ribston. Ross Nonpareil is a favourite of mine, and I should like to see it more generally grown. It is a fairly strong grower, is suitable for either orchard or garden culture, and the fruit are very pretty and good during November, December, and January. Keddestone Pippin is not often met with, but in one or two instances it is highly spoken of. It is a moderately strong grower, bears freely, and is good during November and till March. Braddick's Nonpareil is very popular in the neighbourhood of Exeter, and our trees rarely fail to produce fairly good crops. It is only fit for garden culture, and is available during December and to the end of March. Golden Pippin may be cor-

rectly termed a golden gem. Good for small garden or bush trees, invariably bears well, and though small is much liked by connoisseurs. It is fit to eat in November, and with good management keeps good till May, in which month I received a small quantity this year. Adams' Pearmain ought to be in every collection. It is one of the best bearers we have, and does well either bush or cordon trained. The fruit are apt to grow rather large but well coloured, very handsome and distinct in appearance, and available during November and till February. Wyken Pippin, a rather small sort, but which has several good qualities. It grows strongly, is a good bearer, and the fruit are good in quality during January and till April.

Cornish Gilliflower appears to be most at home in the western counties, and is a very distinct variety of superior quality, available late in November, and keeps good sometimes till May. It is not an easily grown or profitable sort, and requires special treatment in the way of pruning, the fruit being borne on the extremities of the young well ripened shoots. It is most weighty as an exhibition variety. Court Pendù Plat, or the Wise Apple, so termed on account of its peculiar late flowering habit, is very distinct in appearance, and altogether a most desirable sort. It is a sturdy grower either as a cordon or bush-trained, and usually bears well. Very handsome in appearance, though not of extra good quality, and is available during December and till late in April. Northern Spy, a good variety for orchards and the markets, and does well bush-trained. Have seen it cropping heavily this season, and the fruit are in season during January till May. According to Dr. Hogg it is an American variety and considered one of the best. Golden Reinette is particularly good on orchard trees this season, and usually bears well under any system of training. It also looks well on the exhibition tables as well as shop windows. It is good in November and keeps till late in March. Scarlet Nonpareil does well as a bush tree; a moderately heavy cropper and is good late in December and to March. Sturmer Pippin being a very good keeper ought to be generally grown. It does well either standard or bush trained, is a good cropper, ripens during February and frequently keeps good to June.

A limited selection from the foregoing may well consist of Irish Peach, Kerry Pippin, Gravenstein, King of the Pippins, Cox's Orange Pippin, Margil, Ross Nonpareil, Adam's Pearmain, Wyken Pippin, Court Pendù Plat, Northern Spy, Scarlet Nonpareil, Golden Reinette, and Sturmer Pippin.—W. IGGULDEN.

(To be continued.)

CHRISTMAS FLOWERS.

WITHOUT referring specially to the Chrysanthemum, of which plenty of blooms can readily be had at this season if late varieties be grown, there are abundant other flowers that prove most welcome now. Tea Roses may be named as general favourites, Safrano, Niphetos, and Isabella Sprunt being amongst the best for unfolding their delicate sweet buds during this dull period of the year. Then comes the Eucharis, so much in demand, with its pearly whiteness and rich delicate fragrance, strikingly beautiful in any association of flowers however chaste and choice they may be, or for whatever purpose they may be required. The highly prized and ever welcome Lily of the Valley seems particularly appropriate at this season. The sweet-scented Mignonette, which is always a favourite, even when it grows like a weed in summer, but amongst choice flowers is indispensable during the closing days of the year.

The Poinsettia with its brilliant crimson bracts is strikingly effective, either for massing with other flowering plants or for use in a cut state in any floral decorations. The natural flowering time is a little earlier than this, but if rooted the first week in June and slightly retarded in autumn, the plants can be had in full beauty at Christmas, when they are most useful. Euphorbia jacquiniæflora, with its wreaths of small scarlet flowers can also be had in bloom, but this requires to be forced slightly after the flower buds once show signs of forming. These and all similar plants last longer if they can be gradually hardened to cooler treatment in the growing house before they are finally used for decoration. Justicia flavicoma, with its feathery hair-like yellow plumes over the darkest of green foliage, outrivals the Celosia, although useful and telling for beauty; at this period for cutting, room, or church decoration it is equally well adapted. Linum trigynum, Plumbago rosea, and Centropogon Lucianus brighten the stove and intermediate structures, if they are useless for cutting.

Bulbs in quantity can be had, and the early white Roman Hyacinth certainly stands in the foremost rank, for its rich fragrance, favourite colour, and lasting properties commend it to all. Its easy culture renders it useful for amateurs or all who have a small greenhouse. The bulbs have been much cheaper of late years, and we do not doubt that they will be cheaper still in the future, so that they can be had in quantity during the season we are treating the same as is the case in spring when they are imported in small bunches. Two Dutch Hyacinths may be had in bloom—namely, Homerus single red. and double white La

Tour d'Auvergne. Tulips can also be had, such as the early scarlet Duc Van Thol and White Pottbakker. The flowers of the latter before they are fully expanded are nearly as effective for bouquets, wreaths, crosses, and other floral ornaments as are the buds of Niphetos Rose, which they very much resemble. What of Orchids? Why, they are amongst the best of Christmas flowers, and Calanthe Veitchi, C. vestita rubra and its varieties are indispensable. The same may be said of Odontoglossum Alexandræ, O. Rossi majus, and Masdevallia tovarense. Many of these naturally flower at this season, and effective for any form of decoration or for the embellishment of the conservatory.

Camellias and Azaleas are very serviceable, but to have them in quantity at Christmas they must be trained early in the year to make their growth, and then they will unfold them without undue forcing at this season. The two best Azaleas for this purpose are Deutsche Perle and Narcissiflora. The first is a beauty and naturally flowers early. The buds when expanding are very similar to the buds of a Niphetos Rose. All who have a house where a temperature of 50° or 55° can be maintained may have Zonal Pelargoniums in great variety, both single and double, and what can be more useful for a variety of purposes? Begonias will do well in the same temperature and yield quantities of flowers. Amongst the best are B. Ingrami, B. Knowsleyana, B. semperflorens, and B. s. carminea, B. s. rosea, and B. Carrieri. Callas are particularly useful and are as easily grown as Celery during summer, and only require gentle warmth in autumn to produce their beautiful spathes by Christmas. Any house where a temperature of 40° to 45° is maintained will yield in quantity the flowers of Abutilons, Habrothamnus elegans, Carnations, Ericas, Lapageria alba, L. rosea and Cyclamens.

Primulas are always acceptable, both the single and double forms. The single are not generally used for cutting, because they drop and scarcely bear moving, but if a small pin is placed through the calyx and the tube of the flowers they are amongst the most serviceable flowers that can be had for various decorations at Christmas.

These are but a few of many plants that can be had in beauty at this season of the year—for instance Primula Hirbinger, Bouvardias in variety, several other Orchids, Epiphyllums, Heliotropes, and others, if only the convenience exists for their production, and they are prepared and trained by judicious treatment to flower at this period of the year.—WM. BARDNEY.

EVERGREENS.

EVERGREENS play an important part in the Christmas decoration of our houses, churches, and places of amusement, and in this guise they have long been regarded as inseparable from this universal festival of the Christian world. But it is rather to evergreens in the attractive form of Conifers, as they present themselves to us in our gardens at Christmas, that I desire to call attention now. Living, as I now do in a veritable paradise of Coniferae, I am frequently impressed by striking features of various specimens, to which I would gladly call attention in the pages of the Journal if only time could be spared for such a labour of love, but the demands made upon my time are so incessant that my remarks must be brief. Conifers revel in a deep fertile loam with a free natural drainage, and develop such robust vigour as is never seen when they are planted in less suitable soil. Pinus cembra, that is invariably so unsightly in a poor thin soil, no matter how carefully stations may be prepared for it, is one of our most striking and ornamental specimens in the loam. Libocedrus decurrens forms lofty columns of a lively green hue that are wonderfully effective, and which bid fair to outgrow even the Wellingtonia. Thuja gigantea is no mean rival of the Libocedrus, surpassing it in bulk of stem, and, I think, in rapidity of growth. Specimens of it 50 or 60 feet in height, feathered with foliage to the ground, form striking features in a shrubbery or park, having a singularly light and elegant appearance when seen from a distance, but closer inspection shows that they lack the refinement of Thuja Lobbi, which is also of a richer shade of green and more dense habit of growth. Thuja Lobbi, I may mention, does answer well in a poor thin soil. I put this to the proof long ago upon the Hastings sand formation in Sussex, where it grew with remarkable vigour. So, too, did Pinus insignis, but Pinus cembra was so stunted in growth and sickly in hue as to be positively unsightly. Pinus insignis is, I think, more affected by climate than soil. Planted on the upper slopes of a valley in any of the southern counties it has no rival among Conifers. Its free robust growth and bright green foliage soon render it a conspicuous and very ornamental object.

Queen of all Conifers is the silvery form of Cedrus atlantica. Devoid of all formality, its appearance, when it attains the height of 40 or 50 feet, is elegant and effective, especially when planted near green-leaved Conifers. A fine specimen of it near my garden is perhaps the most important feature of a group containing equally fine examples of Abies Morinda, Cedrus Libani, Taxodium sempervirens, and Abies Douglasi. The Red Bark (Taxodium sempervirens), grows both in height and bulk of stem with greater rapidity than the Wellingtonia. A little grove of this curious Conifer in my shrubbery has a special attraction for me. The bark kept

in perpetual shade by the dense beads of foliage is so highly coloured as to afford a striking contrast to the green foliage, and the effect of the red stems is singularly picturesque. We have Cedars of Lebanon in considerable numbers, amounting to several hundreds, growing in the deep loam with such freedom that they have an imposing effect in the course of a few years. What a noble tree it is! so massive, so stately, so refined. What depth of shade is there among its flat spreading branches; and yet how bright is the effect of their sun-lit edges! One admires a noble specimen whose spreading branches sweep the turf, but one revels in a grove of them with clear stems like so many massive columns with wide spreading branches high overhead.—EDWARD LUCKHURST.



IN connection with the recent investment of the PRINCE OF WALES with the Japanese Order of the Chrysanthemum, his Royal Highness has been pleased to accept a copy of Mr. Molyneux's popular work, "Chrysanthemums and their Culture," the second edition of which is now in the press.

— THE FROST in the early part of the present week was very severe, varying in the neighbourhood of London from 12° to 21° on Monday. Low temperatures are also recorded from the north, 24° of frost having been registered in South Perthshire on the 21st and 22nd inst. Near the metropolis the temperature became somewhat higher on Tuesday and a dense fog prevailing, and on Wednesday there was a partial thaw.

— GARDENING APPOINTMENT.—Mr. W. Brittain, late of the Royal Horticultural Society's Gardens, South Kensington, has been appointed head gardener to Lady Pollock, Hatton Park, Feltham, Middlesex.

— WE are desired to state that the CHISWICK HORTICULTURAL SOCIETY'S summer show will be held on July 14th, and the autumn show on November 17th, 1887.

— MESSRS. J. WEEKS & Co. have sent us a copy of their "Horticultural Pocket-Book and Diary for 1887." It is a neat, substantial, and useful article that will meet with ready acceptance by gardeners to whom it is presented.

— A LIMITED liability company has been formed to purchase the business of MESSRS. HOOPER & Co. of Covent Garden and Twickenham, and it is stated that negotiations are proceeding with the object of effecting an amalgamation with Messrs. E. G. Henderson & Son, Pine Apple Nursery, Maida Vale.

— MR. BENJAMIN FIELD, Swan Place, Old Kent Road, London S.E., sends us samples of the JUBILEE FLOWER CUPS for setting up cut blooms for competition, but especially adapted for Chrysanthemums. The cup to hold the bloom is made to fit the water tube in a telescopic manner, no springs being employed, and the cup fits so closely that it can be readily raised to any required height, and yet is firm enough to avoid all danger of slipping. These tubes rank among the best we have seen.

— SEED CATALOGUES.—Before the year closes the catalogues of all the principal seedsmen are widely distributed. Most of them are tasteful productions containing much useful matter, in addition to the numerous illustrations and coloured plates which are now apparently considered indispensable in publications of this kind. As examples of the catalogue literature we may mention those just to hand from Messrs. J. Veitch & Sons, Chelsea; Sutton & Sons, Reading; and Webb & Sons, Stourbridge, and that from Messrs. J. Carter & Co., High Holborn, noted last week.

— CHRISTMAS FLOWERS.—Flowers of many kinds have been very abundant in Covent Garden Market this week, especially the Paper White Narcissus, Violets, and Roses. Of the last named large quantities have been imported from the Continent and sold by auction at exceedingly low prices, boxes of four dozen buds of Safrano and other varieties having been sold at 1s. 5d., or 4½d. per dozen, an extraordinary price for Roses at Christmas. The other flowers brought proportionately low prices, leaving little chance for the home growers to obtain a profitable sale. Some hundreds of crates of Mistletoe have been sold in a

similar way, the lowest price per crate being about 6s., not one-fourth of what was paid a few years ago for a similar quantity. The supply is chiefly derived from Normandy and other parts of the Continent, while a considerable number of crates, both from there and from this country, have been shipped to the United States of America.

— MESSRS. SUTTON & SONS, Reading, have just issued their POCKET GARDEN CALENDAR FOR 1887, which, in addition to information usually found in almanacks, contains concise directions for garden operations in every month of the year. It is neatly printed, and is bound in tasteful covers.

— WINTER CHRYSANTHEMUM SHOW.—We may remind our readers that there is yet another Chrysanthemum Show to be held this season—namely, the National Society's Exhibition at the Westminster Aquarium, January 12th and 13th, 1887. Prizes ranging from £3 to 5s. are offered in seven classes for collections of cut blooms and bouquets of Chrysanthemums. In addition to these, prizes are contributed by the Royal Aquarium Company in nine classes, for Cyclamens, Primulas, Solanums, Hollies, and Conifers in pots. It is hoped that a good exhibition will be obtained, as the chief object is to encourage the culture of late Chrysanthemums.

— MR. E. MOLYNEUX writes:—"Mr. Orchard's description of CHRYSANTHEMUM WHITE CERES, both in form and manner of growth, is exactly in accordance with my own ideas of it. I think highly of it, more particularly as it comes in just at a time when the general varieties are fading, and being pure white it is of the utmost value for decorative purposes; and I should strongly advise those who have not grown this variety to procure it at once, grow it well, and gratification is sure to follow."

— MR. S. CASTLE has sent us samples of the LEAVES OF GROS COLMAN VINE grown at the West Lynn Vineyard. They are very fine indeed, the largest, from a Vine grafted on the Black Hamburg, measuring 15 inches across, the other from a Vine on its own roots being 12 inches in diameter; this leaf is still quite fresh and green, while the other is brightened with autumnal tints. The leaves are remarkable for their great substance, being in this respect "like leather." Such Vines, not too heavily cropped, ought to produce first-class fruit.

— MESSRS. J. LAING & Co., Forest Hill, are sending out a coloured plate of their JUBILEE BEGONIAS, representing a dozen double varieties selected from their numerous beautiful seedlings. They range in hue from pure white, yellow, and pale rose through darker and richer shades to the most intense crimson. The flowers are beautiful, in some cases almost as symmetrical as Camellias. Double Begonias are becoming great favourites with many, as the flowers are very lasting.

— "A NORTHERN AMATEUR" observes:—"It seems that some southern growers have a variety styled AURICULA CAMPBELL'S GREEN EDGE. Assuming this to be Mr. Campbell of Falkirk, the raiser of so many well-known sorts, those who have a variety under that name may accept a correction based on the best authority. No such plant ever left his hands. It is in all likelihood Cunningham's unnamed flower."

— THE same correspondent, referring to the proposed AURICULA SHOW FOR SCOTLAND, remarks:—"I was glad to see the communication of Mr. Straton on this subject in last week's Journal. The suggestion could not come from a better quarter, whether we regard the man or the district. While a few veterans have been taken away of late years the ranks of Auricula-growers north of the Tweed have been far more than recruited; and, as a florist of note wrote me this spring, it is a reproach that Scotland should have no exhibition of a flower for which she has done so much. What must be first sought, I should fancy, is an approximation at least to the number of those likely to forward plants, and Mr. Straton may pardon the suggestion that he hold a muster-roll of volunteers who send to him with their own names such others as they may be authorised to transmit. One could thus canvass a district, and a sufficiently reliable estimate be secured. For such an object the movement must be a national one; local attempts have dwindled and died. I have little doubt that with the heavy guns of the Tayside contingent, the Fife horse, and the Border rifles, supported by the minor crops of the centre and west, such a review could be obtained in the jubilee year as would insure a permanent institution. I ask, What is the strength of the army? How is it to be ascertained?"

— WE have received an advance copy of that marvellous production, "WHITTAKER'S ALMANAC FOR 1887." It contains 632 pages of information on every subject imaginable. When we state that it contains 160 pages more than ordinary some opinion may be formed of the mass of matter which has been added to this issue.

— WE have also received one or two of "LETTS' DIARIES," which are now published by Messrs. Cassell & Co.

— "A. B." considers the idea broached by "Thinker" as to CHRYSANTHEMUM CHALLENGE TROPHIES a capital one. "An enormous amount of interest would be centred in the contest for such a trophy. I believe that any Society who had the courage to take the matter in hand would find the outlay well repay them, as such a prize would certainly draw the public. For such a handsome prize all sections of varieties should be represented. I would suggest that something like the following should be stipulated for:—Twenty-four varieties of incurved single blooms, the same number of Japanese, twelve blooms of reflexed distinct, twelve show Anemones, twelve Anemone Japanese in six varieties, Pompons in twelve varieties, three flowers of each, and twelve bunches of Anemone Pompons, three flowers of each in eight varieties. Single varieties should be staged in the same way. The whole would form a grand collection, and I am sure would bring the best growers together, which could not fail to make a most interesting exhibition."

— THE monthly meeting of the BELGIAN HORTICULTURISTS was held in Ghent on the 15th inst., when the following were present:—MM. J. Closon, Jules Hye, V. Cuvelier, Ph. Blancquaert, B. Spae, A. Rosseel, Desmet-Duvivier, and E. De Cock; M. Moens presiding, and Mr. A. De Smet acted as Secretary. Certificates were awarded to M. A. D'Haene for *Calanthe Veitchii rosea alba*; to M. Louis Van Houtte for *Cypripedium Leeaenum*, and the variety *superbum*; to M. Jules Hye for *Cypripedium caudatum* *rosae splendens*, *C. politum*, and *C. Lawrencianum*, fine variety; to MM. Boelens frères for *Odontoglossum Alexandrae album*, and *Dracæna fragrans aurea lineata* from M. Louis Desmet-Duvivier. Cultural certificates were awarded for *Tillandsia tessellata* from Madame Ve. Van Acker-Maenhout, *Cycas circinalis* from M. B. Spae, and *Restrepia antenniferia* from M. Jules Hye. Honourable mention was accorded to M. Jules Hye for *Cypripedium tonsum*, and *C. sylhetense* from M. Jules Hye, and *Cycas sinensis* from M. Spae-Vander Menlen.

— AT the ordinary meeting of the LEEDS PAXTON SOCIETY, held at the Society's room, Vicar Lane, on the 11th inst., Mr. Joseph Smith (the President of the Society) in the chair, and Mr. J. W. Frankland (Vice-President) in the vice chair, a paper was read by Mr. Thomas Garnett, St. John's, Wakefield, entitled "A Critique on Molyneux's Chrysanthemum Culture as applicable to the North of England." The room was crowded, about a hundred being present, including several visitors from neighbouring towns. There was a magnificent display of Chrysanthemums and other flowers. The room was also tastefully decorated with plants kindly lent by Mr. W. Crossley and Messrs. Shaw. Mr. Garnett read an admirable essay, criticising some of the rules laid down by Mr. Molyneux as requiring considerable modification before becoming applicable to the smoke-laden atmosphere of a portion of the West Riding of York. A long and interesting discussion followed, in which a number of members and others took part, and at the close a cordial vote of thanks were given to Mr. Garnett, on the motion of Mr. Featherstone, and seconded by Mr. Frankland. We shall take an early opportunity of publishing the critique which has been kindly forwarded to us for the purpose.

ZONAL PELARGONIUMS FOR WINTER BLOOMING.

WE are reminded of the extreme usefulness of these well-known plants for winter decoration by a visit to Chatsworth last week, where one of the small span-roofed houses near the large conservatory is now a flowing mass of colour. The plants are kept dwarf and compact by being placed near the glass, and are carrying fine trusses of bloom, some of them 7 and 8 inches across. The varieties grown are the well-known Chilwell strain raised by Mr. Pearman. No one will dispute the utility of a display of this kind, as the colour of a well grown Zonal Pelargonium is only rivalled by the Poinsettia, and those who have experience of the demand for flowers at Christmas know that the "brighter the better" at this season. The objection to Zonals as cut flowers on the score of falling petals may be obviated by a drop of florist's gum in the eye of each flower.

In growing, two methods may be adopted by those who wish to try their hands next season. Where frame room is plentiful the cuttings

may be struck in March, or even later, being potted as required, first into 3-inch and then into 5-inch pots, the soil used being good sound loam, and the potting being firmly done to encourage hard healthy growth. The plants should be grown in a frame all the summer, giving plenty of air, and picking off the flower buds as they appear until the time comes for them to be transferred to their winter quarters. Those who have not the convenience of a frame should choose autumn or very early spring-struck plants. Place them in 3-inch pots in March, and 5-inch the first week in June, when they may be plunged in a bed of ashes out of doors, taking care that the position chosen is fully exposed to the sun, so that the growth may be well ripened.

In growing winter-blooming Zonals out of doors, one of the most important points to be noted is to get them housed before the heavy autumn rains, which often cause failure by decaying the roots. When in their winter quarters it should be remembered that dry air is of more importance than a very high temperature. All necessary watering should be done in the morning, and all water used confined to the pots, not slopped about the benches, &c. By attention to these few details a fine display during the dullest months is within reach of those who have even the most ordinary accommodation. The following are a few of the best varieties:—Aida, blush white; Atala, scarlet; Burns, light scarlet, white eye; Chas. Smith, dark crimson; Constance, rosy pink; David Thomson, crimson; Edith Pearson, salmon rose; Enrydice, lilac pink, white eye; Gertrude, salmon; Henry Jacoby, very dark crimson; Herminius, scarlet, shaded magenta; John Gibbons, scarlet; Mrs. Gordon, scarlet, shaded magenta, white eye; Mrs. Leavers, pink; Mrs. Strutt, pale lilac pink; Omphale, pale salmon; Queen of Whites, white; and Zelia, magenta.—EXPERIENTIA DOCET.

FINE GROS COLMAN GRAPES.

ON page 515 we referred to some fine samples of Grapes received from Mr. J. H. Goodacre of Elvaston, and incidentally alluded to the still larger specimens of Gros Colman that were exhibited by this cultivator

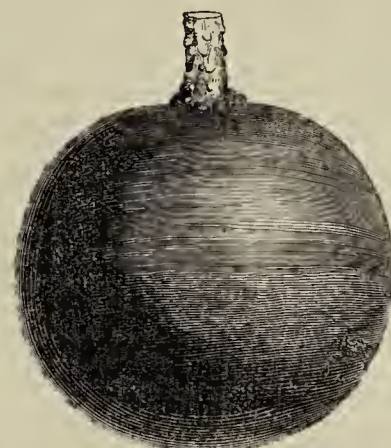


Fig. 84.

in November. Two Grape growers have asked for more precise information respecting the size of the berries. The figure represents the exact size of the largest, and that the rest were not small will be apparent when it is stated that the bunch from which it was taken weighed 7 lbs., but only contained sixty-eight berries. This bunch caused quite a sensation among the guests at the Mayor's dinner at Derby. We do not know if any larger Gros Colman have been grown than the one figured, but an opportunity is afforded for cultivators to settle the point by comparison. The Elvaston Grapes were admirably coloured, and we learn that Mr. Goodacre has no "secrets" to keep as to his method of producing them.

DINNER TABLE DECORATION.

THIS is a subject that requires great ingenuity and forethought in design, so as to give variety on each occasion when parties follow in close succession; and however well the plans are laid, great care is needed to carry them to a successful termination, in selecting suitable material, and good taste must be exercised to show it to advantage. There is no style of furnishing dinner tables that we like better than when the elegant trumpet-shaped glasses, with smaller arms around the central one, are placed down the centre of the table and dressed in a distinct and light manner, smaller glasses being also used where space admits, and coloured leaves, Ferns, and flowers used as a groundwork to the whole. It, however, sometimes happens that we have to make an entirely new departure to give to a table the novel and imposing appearance that a great occasion demands. At an important gathering at Longford Castle recently it was determined the dinner table should be worthy of it, and judging from the way in which it was admired, that determination was fully realised. Others might like to carry out similar arrangements, and I will try and describe the one in question.

The table was laid for thirty, and light was supplied by five candelabra arranged down the centre. The central one was raised on a block 1 foot high, the next pair 9 inches, and those at each end of blocks 6 inches high. Sheets of brown paper were placed right down the centre of the table. Mounds of fresh green moss were then formed around each of the blocks with a gradual slope to the top. The diameter of the central mound at the base was about 20 inches, the next pair 17, and the outside ones 15; the space between the mounds was then covered with moss, but instead of joining the outer edge of it in straight lines from one mound to the other, it was hollowed out so as to form the arc of a large circle sweeping towards the centre of the table from either side, which gave the whole design an informal appearance. It is now easy to imagine the centre of this as being covered with moss, with mounds rising around the candlesticks, and the outline hollowed out between the mounds; when this is done the most troublesome part of the work is over. The outer edge of the moss was then edged with brightly coloured pieces of *Alternanthera amœna*, which formed a beautiful contrast to the white tablecloth on one side and fresh green moss on the other. Two light, graceful Palms were next placed between the central candelabrum and those on each side of it, and small mounds made at their base to cover the pots. In the centre of the space between the other candlesticks two more mounds were formed around plants of *Pandanus Veitchii*, and at each end of the table a noble-looking Pine was placed; the whole surface of moss was then dotted irregularly with flowers of bright and distinct colours, such as Poinsettias, Camellias, white Chrysanthemums, Eucharis, Epiphyllums, Primulas, Carnations, Pelargoniums, and Azaleas, with small sprays of Salvias and flowers of Cyclamen peeping up here and there among fronds of Maidenhair Fern, with fronds of *Pteris serrulata* standing up well above the flowers. Fronds of *Polystichum angulare proliferum*, with *Nephrolepis tuberosa* and *Cyperus* springing up around the base of the candlesticks, completed the arrangement, the whole having the appearance of verdant undulating banks, with flowers and plants springing up from them in charming simplicity and profusion.—H. DUNKIN.

RENOVATING TREES AND SHRUBS ON LAWNS.

A FEW years ago Mr. William Paul of Waltham Cross described in the Journal a method by which a large specimen Golden Queen Holly on his lawn was restored from a state of debility and unsightliness to vigorous health and beauty. The plan was extremely simple, but not on that account the less sensible, and it had the great merit of accomplishing all that was expected from it, if not more. It consisted in driving down an iron bar at intervals of a foot or more, thus making a series of holes in that portion of the impoverished ground where the roots of the tree were expected to be established, yet starving. The holes made in the lawn were receptacles for food, and were filled with very rich compost, made so, if I remember rightly, by the liberal use of artificial manure. This renovating mixture was pressed very firmly down till no more could be crammed in, on the assumption that the roots of the Holly would find their way into the larders and supply nourishment to the failing branches. The anticipation was realised, and the enfeebled tree was transformed into a richly coloured and handsome specimen, which I have seen and admired.

Another striking instance of success resulting from the same kind of practice I have also had the pleasure of inspecting. The entire front of Sisters House, Clapham Common, the commodious suburban residence of Thomas Wallis, Esq., has for many years been covered with Euonymuses. They are very old and very large. They were simply planted in a narrow border, and the roots extended under the lawn in light gravelly soil. The fine wall-covering evergreens remained attractive for several years, but gradually assumed a sickly hue, and eventually lost nearly all their leaves, and became positively unsightly. They were doomed for removal; but just at that time Mr. Richard Holmes, the gardener, saw a reference in the Journal to Mr. Paul's method of restoring his Holly. The plan was promptly tried with the Euonymuses, holes being driven as deeply as possible into the lawn with a crowbar, where, it may be added, the grass was almost starved out. Water was poured in them to moisten the dry earth, and the holes, which were a foot apart, filled with a very rich mixture of soil and manure, rammed down as firm as it could be made. It was just in time to save all the trees but one. This died, but the others improved in a manner so rapid as to evoke surprise. The fine Euonymuses that most people would conclude were past recovery made fresh growth forthwith, and in one season the wall was clothed with rich green foliage. A new lease of life was given to the trees, and larger and finer examples are not often seen than those referred to.

There are so many specimen trees on lawns losing their lower branches and their beauty through soil-exhaustion that the above instances of successful renovation and the manner in which it was accomplished are worthy of attention. The plan may be carried out now if the ground is in suitable condition, or in spring.—A SUBURBAN GARDENER.

EVERLASTING FLOWERS FOR CHRISTMAS DECORATIONS.

It is surprising, since church decoration has become so general at Christmas, that more Everlasting Flowers are not employed; and when these are gathered in good condition and dried they are as effective as fresh flowers, and far more useful in many positions. What could be more beautiful arranged amongst a bank of moss along the sloping stone

work of the windows and many other similar positions? Flowers generally fade first, and destroy in a great measure the effect of the other decorations. But when Everlastings are used they are bright, cheering, effective until the whole has to be cleared away.

For this purpose a good supply of *Helichrysums* should be grown, which, if cut before they are fully expanded and dried in a light, cool, airy place, they will retain their colour and prove very valuable. A variety of colours can be obtained from a mixed packet of seed, and the flowers are telling in any arrangement provided the colours be well grouped. If a good supply of white flowers is required—and these are generally in great demand, no better plant for the purpose can be grown than *Ammobium alatum grandiflorum*. The seed of this, as well as of the *Helichrysums*, should be sown under glass about the middle of March; a hotbed covered with a frame will afford the requisite heat. The *Ammobiums* should be planted 18 inches apart in good fertile soil, and they will attain a height of 3 to 4 feet, and produce hundreds of small pure white flowers from the end of July until cut off by frost. Cut the flowers in a dry state before they are fully expanded. When they are properly dry and fit for storing for winter use they should be tied in small bunches of six, eight, or twelve flowers together, and in this form they are charming if associated with moss or evergreens. *Rhodanthes maculata* and its white form *alba* are invaluable for the same purpose, and may be grown by everybody that possesses a piece of garden ground. The seed can be sown outside during the months of April and May, and will in a very short time yield a good supply of both white and rose-coloured flowers. Great care is necessary in drying *R. maculata*, for if not carefully done the rose-coloured tint will not be retained. The best method is to dry them outside rather quickly, but not exposed to the full sun for the flowers are inclined to open, which must be prevented if possible by cutting them early.

Everlastings are alluded to at this period of the year because they are indispensable where large and varied decorations have to be carried out, and are equally as useful in many positions as fresh flowers. The latter can be retained for choice purposes. Those who have insufficient flowers at this season to carry out the work desired of them satisfactorily may be in a better position another year if they only cultivate these annual Everlastings in quantity. Many a dwelling might be rendered very ornamental by their agency at the cost of a few pence, not only during the Christmas festivals, but throughout the winter, if they would only be at the trouble of growing a few plants of each kind.—L. A.



HARDY FRUIT GARDEN.

FROSTY weather should be turned to account for applying the annual surface dressing of old hotbeds or farmyard manure to all bush fruit. Let there be no digging either among bushes or between the rows of Raspberries, for the roots are so near the surface that they are quite certain to be lacerated and much damaged by digging. A dressing of manure is all that is necessary to keep the bushes both healthy and fruitful; it keeps the roots at the surface, and supplies them so well with food that robust growth and fine fruit are a certainty, and in summer it keeps down weeds, and checks evaporation. We have tried Raspberries in separate stools, in rows, and have had the canes of lengths ranging from 2 feet to 6 feet. The best results were obtained from canes planted in rows 5 feet apart, and with the canes a foot apart in the rows, and shortened to about 4 feet. When planted the canes were all shortened to 18 inches, and the first year's growth was entirely satisfactory, strong canes being thrown up, and from the buds on the shortened canes came shoots which yielded a lot of useful fruit. This vigorous growth in the first year was obtained by planting stout shortened canes in very rich soil, prepared for them in this particular instance by making trenches in what was naturally a very poor soil, and filling them with a mixture of decayed vegetables, road sidings, weeds, stable manure, coal ashes, and lime, well mixed by turning several times. We have reason to recommend this plan for general practice, for we have seen some very inferior crops of Raspberries planted in deep loam, which evidently required heavy dressings of manure. Raspberries, be it remembered, answer best when the roots are kept near the surface by surface dressings and abundant supplies of sewage during growth.

Prune and tie the canes of established Raspberries. Currant bushes of all kinds may also be pruned, but Gooseberries should not be pruned till February, as there is so much risk of bud destruction by bullfinches. To avoid this protect the buds at once by syringing the bushes thoroughly with a mixture of soft soap, soot and water. A coating of this upon the shoots and branches renders the buds distasteful to the birds, and if care is taken to renew it after heavy rains the buds will be saved, and a full crop of fruit had every year.

FRUIT FORCING.

PEACHES AND NECTARINES.—*Earliest House*.—Cease syringing the trees when the flowers show colour, maintaining, however, a moderate

moisture in the house by damping the floors on bright days in the morning and in the early part of bright afternoons. The temperature may be maintained at 55° by day, ventilating from that degree upwards, closing at 55°, 50° being sufficiently high for the night; and if the temperature falls to 45°, and in very sharp weather 40°, it will be more an advantage than otherwise. Examine inside borders, and give, if necessary, a thorough supply of water at a temperature slightly in advance of that of the house. When the blossoms show the anthers clear of the petals lose no opportunity of ventilation, avoiding cold draughts, and not exciting the trees too much by fire heat. The temperature, however, must be raised early in the day to 50°, and kept between that and 55° through the day, with a little ventilation at the top of the house, and through the day 60° to 65° from sun heat may be allowed. The principle is to get a stont blossom, fertile stamens with abundance of pollen, and well developed pistils, and then resort to fertilisation with a camel's hair brush on fine days after the house has been ventilated some little time. The pollen will be dispersed in a golden shower clearly visible in the sun, and when this is the case the set is generally a favourable one, even without artificial fertilisation.

Second Early House.—The trees must be started without delay to have fruit in May or early June. Fire heat need only be employed to keep out frost at night and to insure 50° by day, above which ventilate freely. It is most desirable to bring the trees on slowly, and if once they make a move to keep them in steady progress. The trees and house should be damped on fine mornings and afternoons, but in dull weather the afternoon syringing can be omitted. The outside border should be protected with dry fern or litter, and if means are at command for throwing off heavy rains and snow it will be desirable to employ them.

Succession Houses.—Forward the pruning and dressing of trees both in succession and late houses, carefully examining the inside borders, as dryness at the roots will cause the buds to fall. If there is any doubt give a thorough watering. It will not do the least harm in properly drained borders. Keep the houses as cool as possible to insure a long and complete season of rest.

Strawberries in Pots.—When the crowns commence swelling and the trusses appear the temperature may be advanced to 60° or 65° by day with a circulation of air. A temperature of 50° to 55° is sufficiently high at night and on dull, wet, cold days. Syringe the plants lightly in the afternoon of bright days early. Examine the plants carefully every day and supply water to all those that require it. Keep a sharp look out for aphides, and if any appear inigate the house on two consecutive evenings, having the plants dry. More plants should be prepared for placing on shelves in Peach houses now or soon to be started, and are all the better for a fortnight or three weeks' sojourn in a house from which frost is excluded before being placed in heat. The decayed leaves should be removed and the surface soil loosened, removed, and top-dressed with horse droppings rubbed through a sieve. The drainage must be attended to, and if necessary rectified and the pots washed clean. Plants for introducing later will be quite safe in their outside quarters plunged to the rim in ashes, and in sharp weather a light covering of dry fern or litter will make all safe, removing it whenever the weather is mild.

PLANT HOUSES.

Allamandas.—Plants that have enjoyed a good rest in a temperature of 50° may be pruned close back, unless extension is needed, the old roots reduced by one-half, and then thoroughly soaked in tepid water. They should be allowed to drain for some hours and then repotted into the same size pot, or larger, as each case may demand. Drain the pots moderately, and press the soil firmly into them. If practicable, plunge the pots in a well-prepared bed of fermenting material composed of leaves and litter, and very little fire heat will be needed to maintain a night temperature of 65°. The moist genial heat that rises from the fermenting material will insure suitable atmospheric conditions about the plants to enable them to break freely and quickly into growth. Under these circumstances no syringing will be needed at first, and no water required at the roots before they have started into growth. Those that are planted out should have a good portion of the surface soil removed and top-dressed with fibry loam, one-seventh of decayed manure, and about one 6-inch potful of bone meal to each barrowful of soil; the same quantity of soot may be added. This compost is also suitable for repotting these plants.

Clerodendrons.—C. Balfourianum, if top-dressed with equal parts of loam and decayed manure, and then supplied liberally during the growing season, will do well in the same pots for several years. They do not like being disturbed at their roots, add this must be avoided as much as possible. If necessary to turn them out only reduce the ball by one-third, but if this is done they should break into growth first. If placed into larger pots, or the balls are reduced, repot them in a compost of loam two parts, one part peat, the remaining part being composed of leaf mould, manure, and sand; if a large shift is given add a little charcoal. Whether top-dressed or to be repotted soak them with tepid water, and plunge the pots by the side of the Allamandas. As the plants of C. fallax cease flowering they may be thrown away unless those that have seed pods swelling are required to perfect them for raising a hatch of plants for decoration next autumn and winter. A little seed of this variety may be sown at once in light soil covered with a square of glass and plunged into brisk heat.

Stephanotis floribunda.—Plants that have been trained under the roof since August, and kept for the past two months about 55° at night, will be thoroughly ripened and rested. Take down the plants and thoroughly clean them if any trace of mealy bug can be discovered. They will bear a strong solution of lemon oil, Fir tree oil, or petroleum, 1 oz. of the last

to each gallon of water. These insecticides will destroy bug, which if not eradicated now will increase rapidly in heat, and give endless trouble after the plant has commenced growth. Top-dress with manure, or repot as the case may require. If the latter use three parts fibry loam, one part peat, to which may be added one-sixth of decayed manure and sand to render the whole porous; a little charcoal may also be added for the same purpose. When the shoots are trained upon the trellis give a good watering, and plunge the pot in the fermenting bed, where it can remain for training the young wood on strings close under the glass until just before they commence blooming.

HELLEBORES.

At this period of the year, when our horders are destitute of flowers, we look forward to the blooming of the Christmas Rose with great pleasure. It is one of the most valuable hardy perennials we have, as it flowers in the open air when there is little in bloom, therefore it should be in every hardy plant collection. *Helleborus niger* is so well known that it needs little describing; it may be easily recognised from the rest of the Hellebores by its smooth green leaves and beautiful blossoms, which, as a rule, are borne on single stems about 6 inches high and about 3 inches across, varying from pure white to a bluish tint.

It is frequently used as a pot plant for decorating greenhouses or conservatories, but great care should be taken of them after the flowering period is over, so as not to expose the plants to the open air all at once, as they frequently suffer greatly when removed from under glass to withstand a severe winter. *Helleborus altifolius* is considered to somewhat resemble *H. niger*, but it is larger, and generally has two or more blooms on one stem; its leaves also are mottled with purplish spots, flowering as a rule in December. *H. olympicus* is another conspicuous form, with tall slender leaves, flowering in February, with cup-shaped blooms varying from pure white to a greenish tint.

The fine coloured hybrids which have of late appeared add greatly to the beauty of our winter gardens. Though not generally so well known as the white varieties, they are greatly admired, and should have a place on all herbaceous borders, for not only do their flowers stand the hard winter, but their foliage makes them conspicuous throughout the year. *H. colchicus* is a fine coloured form which grows to a large size, the leaves sometimes attaining the height of 2 feet; it may be recognised by its thick dark green leaves, which when in a young state have veins of a purple hue. Its blooms are of a dark purple colour, and are borne on long stems which rise above the foliage, and it generally flowers from February to the end of March. *H. abchasicus* is a tall and slender form, with flowers of a ruby crimson, very attractive, and well worth growing. Amongst other coloured varieties worthy of notice are James Atkins, Gretchen Heinemani, and Apotheker Brogren.

Most of them thrive well in ordinary soil, but for choicer varieties I should recommend a prepared soil consisting of good fibry loam, peat, and sand; rather a moist situation is best adapted for them. When coming into bloom it is advisable to mulch them with moss to prevent the rain washing the soil on to the flowers. When the flowers are required rather earlier than usual, they may be obtained by placing a handlight over the plants, if it is not convenient to lift the plants and pot them to be placed in the greenhouse.

They may be propagated either by division or by seed, which is produced plentifully in favourable seasons. If grown from seed, it should be sown in pans under glass, and when the plants are large enough to handle prick them out in a shady place, to remain there for one year, after which they may be transplanted to their permanent places. July is the best time for dividing, only the best and strongest plants should be used for this purpose. The divided pieces should be planted on light good soil and left undisturbed for two years, by which time they will be good flowering plants.—C. COLLINS.

THE BEE-KEEPER.

SECTIONS, LARGE AND SMALL.

It is apparently the intention of some bee-keepers to produce comb honey in sections of less size than those most commonly in use hitherto in the apiaries of this country. The idea seems to have originated from seeing the display at South Kensington, and hearing leading Canadian bee-keepers express their opinion and give their experience of sections of various sizes. It is argued that the smaller size will be more cheaply produced and more readily saleable. But it is at present not very certain that either of these conclusions rests upon any sound basis upon which bee-keepers may build their hopes without fear of finding that, after all their efforts have been made, they were led astray in the first instance. Smaller sections, it is said, can be produced in greater quantity than larger—or, rather, a greater weight of honey in the comb can be obtained from a stock in smaller sections than in the 4½ by 4½ by 2 ordinarily in use.

I believe that this idea will not be borne out in practice, but rather the contrary, for although on account of the demand for section honey in my locality I produce honey in sections to meet this demand, it has for some time been evident to me that a less weight of honey is taken from a stock upon which sections are used for supering purposes than from a stock upon which a large indivisible super is placed, or a super which, though divisional, is still in larger sections, as an example of which we may take the Stewarton honey boxes. If this loss is not merely fanciful greater loss still must ensue from using still smaller sections. Unless to counteract this loss separators may be dispensed with when the narrow sections are introduced, and the comb still be free from bulging, when the loss will not be so great as in the case of the quasi-standard section with separators. In my apiary separators are always used, and whenever an attempt has been made to work sections without them failure has been the result. Let those who desire to do so adopt a smaller section. I shall be content to watch the result with the conviction that the producer will find it much more difficult to sell to the retail dealer twice as many half-pound sections as to dispose of half the number of those of the ordinary size. When sections are of consistent good quality, and a fair attempt is made to sell them at a reasonable and remunerative price, no trouble ought to be experienced, and in future years, as the quality of the honey becomes more widely known, the local demand may quite possibly exceed the supply.

Notwithstanding contrary opinions held by others, I believe that the vast sale of Canadian honey in this country during the last few months has done an almost irreparable injury to the home producer. Those who have this year purchased this Colonial honey will another year also buy the same, unless the Canadian bee-keepers are foolish enough to send inferior brands. It is all easy to say that by the sale of so great a weight of honey the taste for it has been spread, so that in the future a greater demand will exist than in the past; but it is a very different thing to induce the purchaser of honey from abroad this year to buy it from the home producer next season. If he is able to obtain the same quality again next autumn at the same average price he will see no necessity to change. The consumer does not as a rule care who benefits by his purchase; he does not think that if he buys English honey he is doing something to foster British apiaries; nor does he think that in consuming Canadian honey he is injuring a home industry. The consumer tries to buy the best quality at the most moderate price, irrespective of all other considerations. There is not even the slight consolation that the honey of Canada is so vastly inferior to our own that the ordinary consumer can detect the difference. How many of the thousands of honey-eaters in Great Britain could detect the difference between two samples—the one Canadian honey, and the other English? The Canadian bee-keepers have been wise and made the most of their opportunity. English bee-keepers have been delighted to meet them and to discuss the great problems of the day with representatives of Canadian bee-keepers; but notwithstanding this pleasure it must not be forgotten that by the grand display of honey at the "Colindries" this year an enormous impetus has been given to the sale of Colonial and foreign honey at a time when the home market was glutted with supplies for which there was no apparent sale. It cannot be forgotten that the first principle implanted in every individual member of society by Nature is "self-preservation."

We rejoice at the prosperity, loyalty, and power of Canada; we desire to see that prosperity increase, that loyalty endure, and that power grow greater each succeeding year; we hope that good seasons, happiness, and profit will attend the bee-keepers of Canada; but we also most earnestly hope that the bee-keeper of this the Mother Country will do all that lies in his power to actually monopolise the home honey market, not with the assistance of protective tariffs, but by an honest

attempt to produce honey of good quality at the least possible cost, so as to enable him to beat out of the market all Colonial and foreign produce, and to resist the flood of competition which already surges at his door, threatening to break down the barriers which have hitherto restrained its pent-up force.—FELIX.

MEAD-MAKING.

A CORRESPONDENT wishes a detailed recipe for making mead of the best quality. The experience I have had in the matter scarcely entitles me to instruct others in the art, nor would it be wise even though I were a proficient to give a recipe as producing the best quality, for tastes differ so widely.

Many of the recipes for mead-making include foreign liquids and ingredients, such as brandy and spices. A recipe before me could be easily imitated by thoroughly dissolving a teaspoonful of honey in a glass of brandy or rum, and adding spices according to taste. "Athole Brose" might be regarded as the proper term. I delayed giving any instructions in mead-making until I had made inquiries of those who were likely to be able to give full particulars as to preparing mead from honey pure and simple, but in this I have failed. They either do not differ from my own system, or are of too complicated a nature.

Liquors made from honey are undoubtedly far more refreshing and safer to take than many of the compounds sold at the present day. What is termed beer, made from honey, is certainly a refreshing effervescing drink during hot weather. It is made here usually from the water that combs, after the honey has been extracted, had been steeped in, the pollen in the combs giving it a colour, flavour, and fermentation that pure honey would not do. The following is the recipe for making similar beer to that which took the first prize at the Caledonian Apian Society held at Edinburgh in 1884, and which was greatly relished by everyone who tasted it. The quantity of honey used may be more or less according to taste.

To every 3 lbs. of honey add 1 gallon of water, 1 oz. of hops boiled separately, strained, and the liquor added to the honey and water after the latter has been boiled gently for nearly an hour, and the scum skimmed off as it rises. Now pour the liquor into a cooler, and when about milk-warm add a gill of brewer's barm. After it has stood in the cooler and fermented for three or four days, bottle and cork tightly. The above gallon is Scotch measure.

The successful preparation of mead depends greatly upon circumstances and experience. To every gallon of water (imperial measure) add 3 lbs. of honey. In this case, as in beer, heather honey and honey with an admixture of pollen, give colour and flavour not obtained with honey free from it. Boil the liquor slowly for an hour and skim off the impurities as they rise to the surface. Have the liquor infused from the hops ready to be added when the liquor is skimmed, then pour into a cooler. If the weather is warm no barm will be required, but if cold add some barm. When sufficiently cold pour the contents into a well seasoned barrel, clean, and perfectly free from any mustiness whatever. This must be particularly attended to. Place the barrel in a dry place at a temperature not less than 60°. After it has wrought two or three days bung closely. A small spigot hole may be left open for a few days longer and the barrel kept full by a little of the liquor preserved for the purpose. If any particular flavour is desired, that can either be done before casking or after, as desired, but care must be taken that sufficient liquor is prepared to fill the barrel.

Mead made according to the above receipt is heating and is as good a stimulant as many of the high-priced wines imported into this country, mead being much safer for an invalid to use. After it has been kept in the cask for six months it may be bottled for use, corked and sealed. The following recipe is taken from "Honey as Food and Medicine." "Wine Mead.—To make mead not inferior to the best foreign wines pint 3 lbs. of the finest honey to 2 gallons of water, two lemon peels to each gallon. Boil it one-half hour and skim well. Put in the lemon peel while boiling. Work this mixture with yeast, and then put it in a vessel to stand five or six months, then bottle for use. If you choose to keep it for several years add 4 lbs. of honey to a gallon of water."—LANARKSHIRE BEE-KEEPER.



** All correspondence should be directed either to "THE EDITOR" or to "THE PUBLISHER." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

TO WRITERS AND READERS.—Owing to the unusual pressure on our space several valuable articles cannot be inserted this week. They are not the less appreciated on that account, and we are in the satisfactory position of having our literary stores enriched for the benefit of future issues.

Galls on Gardenia Roots (W. D.).—We have received the specimens, which will be subjected to careful examination, and an answer respecting them given in an early issue.

Early Authors and Cultivators (M. D.).—Hesiod is considered to be the first writer on husbandry whose work has descended to us. His poem entitled "Works and Ways" was described by Pliny as the first positively known as giving directions for the cultivation of the ground.

Montbretia crocosmæflora (Somerset).—Pot the roots in moderately rich soil, but drain the pots thoroughly, and do not supply much water until growth commences. A greenhouse or any hot structure will suit them, and very little trouble will be experienced in their culture. The number of roots to be placed in pots will depend upon their size, but they do not look well when very thin.

Gladioli from Seed (Surrey Amateur).—Thousands of plants are raised from seed annually in this country, but this method of increase is not commonly adopted by amateur cultivators. We observed a few bushels of fine corms in one of the vineries at Wimbledon House recently that Mr. Ollerhead had raised from seed in a very easy manner, and we shall shortly publish the details of the method he adopts in producing them.

Grapes not Setting—Artificial Fertilisation (E. Mason).—The bunch of Lady Downe's Seedling you have sent is very similar to an example we have received from Mr. S. Castle, who also favours us with a valuable article on the subject on which you desire information. The communication cannot be inserted this week, but will appear in an early issue. If after perusing it you would like to ask any further questions they shall have our best attention.

Root-pruning Fruit Trees (An Old Soldier).—You ask a question to which it is not easy to give a categorical reply. We think the best plan is to print it and leave those of our readers who have had experience on the subject to record their views. Your question is short, but not without significance—"Has root-pruning done the most good or the most harm to the fruit supply of this country?" We have seen beneficial results accrue from the practice intelligently carried out, and observed many trees crippled by the abuse of the practice; but, as suggested, the experience and observations of many in various districts are necessary for arriving at the general results that have followed as affecting the "fruit supply of this country."

Waite from Boiler (Unfortunate).—As you say there are no signs of leaking, yet after "extra firing" you have to occasionally put 15 gallons of water into the feed cistern in the morning, there must be much loss of water in the form of evaporation or steam. When extra hard firing has to be resorted to to maintain the requisite heat, and to effect this you have to make the water "boiling hot," that indicates there is not sufficient piping for heating the houses satisfactorily. It may be in that respect that you are "unfortunate," as many gardeners are, and the fault may not be in the boiler. The kind you name we have seen working as well as anyone could desire, still you will be justified in explaining your case to the maker, and he may perhaps be able to give you a hint that may be useful. He is a very practical man, and so far as we know, conducts his trade in a straightforward business-like manner.

Foliage in America (A. R.).—The colour of the foliage of most trees assumes a more brilliant hue in autumn in various parts of America than it does in England, or can be expected to do in Scotland; and though the winters are more severe in America than in the "old country," the brilliant autumns preceding the former ripen the wood better than it can be matured under our clouded skies, and consequently some plants pass the winter over the water that succumb here. *Andromeda arborea* is hardy in the south of Scotland, and if by "Japanese Ivy" you mean *Ampelopsis Veitchii*, it is hardy there too, and colours fairly well on walls having a southern aspect. *Bignonia grandiflora* we do not remember seeing on open walls in Scotland, but some of our northern friends may possibly be able to say if it grows and flowers in the open air in North Britain.

Temperature for Starting Vines (G. Wilkinson).—You ask if we "have ever known a case in which Vines were started in a temperature of 80° from the commencement?" We have only been informed of one such case, and our informant was the late Mr. T. Speed of Chatsworth. On inspecting a very good house of Grapes in the famed gardens alluded to, Mr. Speed remarked that it was his regular practice to maintain a high temperature of 80° or more, with moisture, until the buds fairly commenced swelling, then to gradually reduce the heat to promote strong growth. He observed that he secured not only a quicker but a more regular break by this method than by starting at 50° or so in November, at which time Vines are somewhat sluggish in their movements. The crop of Grapes on Vines that we were apprised had been subjected to that treatment was very satisfactory. Mr. Speed, in answer to a question on the subject, said he did not start with an exceptionally high temperature in the spring "because it was not necessary."

Ammonia in the Soil (B. G.).—Perhaps the following extract from Johnston's "Elements of Chemistry" will answer your question:—"Ammonia is naturally formed during the decay of vegetable substances in the soil. This happens either, as in animal bodies, by the direct union of nitrogen with a portion of the hydrogen of which they consist, or by a combination of a portion of their hydrogen with the nitrogen of the air; or, when they decompose, in contact with air and water; at the same time, by their taking the oxygen of a quantity of the water and disposing its hydrogen at

the moment of liberation, to combine with the nitrogen of the air and form ammonia. In the two latter modes ammonia is formed most abundantly when the oxygen of the air does not gain the readiest access. Hence, in open subsoils in which vegetable matter abounds it is most likely to be produced; and thus one of the benefits which follow from thorough draining and subsoil ploughing is that the roots penetrate and fill the subsoil with vegetable matter, which, by its decay in the confined atmosphere of the subsoil, gives rise to this production of ammonia."

Fuchsias from Seed (An Amateur Admirer).—We have raised many hundreds of plants from seed, but few of them on flowering proved equal to existing varieties; still the pursuit is interesting to amateurs who desire to have something new of their own raising. The pods should be carefully gathered when ripe. As the seeds are enveloped in a pulp it is necessary, in order to preserve them, to cleanse them effectually. This is done by washing; bruise the berries with the hand, and mix them with water; as soon as the pulp is all washed off pass the liquor through a hair-sieve fine enough to catch the seed, wash it repeatedly till it is quite clean, then dry it gradually; put it up in brown paper, and keep it in a dry room till spring. Sow it early in March in a mixture of light sandy loam and peat, cover slightly, and place the pots in a gentle hotbed. When the seedlings are half an inch high transplant them in rows across pots 5 inches wide—these will hold about twenty or thirty plants each—and then replace them in the hotbed. In these pots they may remain for a month or six weeks, and then they will require placing singly into 3-inch pots. Place them for a few days in a cold frame, and keep pretty close and shaded till fresh roots are formed, and they are then able to bear the full light, and a moderate admission of air. Give plenty of the latter as they acquire strength, and when the pots are full of roots give another shift into 4-inch pots, and let them remain in these last till they flower. Many of them will flower the first year, and then is the time to make a selection. The selected ones should be repotted, and grown on to the end of the season to prove them. Cuttings of the best may be inserted, and the whole kept in the coolest part of the greenhouse during the winter.

Names of Fruits.—The names and addresses of senders of fruit to be named must in all cases be enclosed with the specimens, whether letters referring to the fruit are sent by post or not. The names are not necessarily required for publication, initials sufficing for that. Only six specimens can be named at once, and surplus fruits beyond that number cannot be preserved. (*Stonebridge*).—1, Madame Millet; 2, Beurre Sterckmanns.

Names of Plants.—We only undertake to name species of plants, not varieties that have originated from seed and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in firm boxes. Slightly damp moss or soft green leaves form the best packing, dry cotton wool the worst. Not more than six specimens can be named at once. (*Houndswood*).—*Maxillaria leontoglossa*. (A. D.).—*Calanthe Textori*.

COVENT GARDEN MARKET.—DECEMBER 22ND.

CHRISTMAS week has somewhat improved business, but with heavy supplies, prices have only just been maintained. Hothouse Grapes are reaching us in large quantities at scarcely remunerative rates. Nova Scotia and Canada Apples in good supply.

FRUIT.

	s.	d.	s.	d.		s.	d.	s.	d.			
Apples	1	6	to	4	0	Melon	each	0	0	to	0	0
" Nova Scotia and						Oranges .. .. .	..	100	6	0	12	0
Canada, per barrel	10	0	13	0		Peaches	per doz.	0	0	0	0	0
Cherries	1	0	0	0		Pears	dozen	1	0	2	0	
Cobs	100	lb.	60	0	70	Pine Apples English ..	lb.	1	6	2	0	
Figs	dozen	0	6	0	9	Plums	1/2 sieve	1	0	2	0	
Grapes	lb.	0	6	3	2	St. Michael Pines ..	each	2	0	5	0	
Lemons	case	10	0	15	0	Strawberries	per lb.	0	0	0	0	

VEGETABLES.

		s.	d.	s.	d.			s.	d.	s.	d.		
Artichokes	dozen	1	0	0	0	Lettuce	.. ..	dozen	1	0	1	6
Asparagus	hundle	0	0	0	0	Mushrooms	.. ..	punnet	0	6	1	0
Beans, Kidney	per lh	0	6	1	0	Mustard and Cress	.. ..	punnet	0	2	0	0
Beet, Red	dozen	1	0	2	0	Onions	.. ..	hunch	0	3	0	0
Broccoli	hundle	0	0	0	0	Parsley	.. ..	dozen bunches	2	0	3	0
Brussels Sprouts	1/2 sieve	1	6	2	0	Parsnips	.. ..	dozen	1	0	2	0
Cabbage	dozen	1	6	0	0	Potatoes	.. ..	cwt.	4	0	5	0
Capsicums	100	1	6	2	0	.. .. Kidney	.. ..	cwt.	4	0	5	0
Carrots	hunch	0	4	0	0	Rhubarb	.. ..	bundle	0	2	0	6
Cauliflowers	dozen	3	0	4	0	Salsify	.. ..	hundle	1	0	1	0
Celery	hundle	1	6	2	0	Scorzoner	.. ..	hundle	1	6	0	0
Coleworts	doz. bunches	2	0	4	0	Seakale	.. ..	per basket	1	6	2	0
Cucumbers	each	0	3	0	4	Shallots	.. ..	.. .. lb.	0	3	0	6
Endive	dozen	1	0	2	0	Spinach	.. ..	bushel	3	0	4	0
Herbs	bunch	0	2	0	0	Tomatoes	.. ..	.. .. lb.	0	6	1	0
Leeks	hunch	0	3	0	4	Turnips	.. ..	bunch	0	4	0	0

These prices are subject to great alterations towards the end of the week on account of Church decorations for Christmas.

PLANTS IN POTS.

		s.	d.	s.	d.			s.	d.	s.	d.			
Aralia Sieboldi ..	dozen	9	0	to	18	0	Ficus elastica ..	each	1	6	to	7	0	
Arbor vitae (golden)	dozen	6	0	9	0	0	Fuchsia ..	per dozen	0	0	0	0	0	
" (common) ..	dozen	6	0	12	0	0	Foliage Plants, var.	each	2	0	10	0	0	
Azalea	per dozen	24	0	42	0	0	Hyacinths ..	per dozen	9	9	12	0	0	
Bedding Plants, var.	doz.	0	0	0	0	0	Hydrangea ..	per dozen	0	0	0	0	0	
Begonias	dozen	4	0	9	0	0	Ivy Geraniums	per dozen	0	0	0	0	0	
Chrysanthemum ..	dozen	4	0	12	0	0	Lilium auratum	per doz.	0	0	0	0	0	
Cockscombs ..	per dozen	0	0	0	0	0	Lobelia	per dozen	0	0	0	0	0	
Cyperus	dozen	4	0	12	0	0	Marguerite Daisy	dozen	6	0	9	0	0	
Dracena terminalis	dozen	30	0	60	0	0	Mignonette ..	per dozen	3	0	6	0	0	
" viridis	dozen	12	0	24	0	0	Musk	per dozen	0	0	0	0	0	
Erica, various ..	dozen	9	0	12	0	0	Myrtles	dozen	6	0	12	0	0
" hyemalis ..	per dozen	12	0	24	0	0	Palms, in var. ..	each	2	6	21	0	0	
" gracilis	per dozen	9	0	12	0	0	Pelargonium, scarlet	doz.	6	0	9	0	0	
Euonymus, in var.	dozen	6	0	18	0	0	Polanetella ..	per dozen	12	0	0	18	0	
Evergreens, in var.	dozen	6	0	24	0	0	Primula sissensis	per doz.	4	0	6	0	0	
Ferns, in variety ..	dozen	4	0	18	0	0	Solanums	per doz.	9	0	12	0	0	

CUT FLOWERS.

	s.	d.	s.	d.		s.	d.	s.	d.
Abutilons .. 12 bunches	2	0	4	0	Lily of the Valley, 12 sprays	2	0	4	0
Arum Lilies .. 12 blooms	4	0	6	0	Marguerites .. 12 bunches	2	0	6	0
Asters .. 12 bunches	0	0	0	0	Mignonette .. 12 bunches	1	0	8	0
Azalea .. 12 sprays	1	0	1	6	Narciss. Paper-white, bunch	0	4	0	6
Bouvardias .. per bunch	0	6	1	0	" White, English, bunch	1	8	1	6
Camellias .. 12 blooms	2	0	4	0	Pelargoniums, per 12 trusses	0	9	1	6
Carnations .. 12 blooms	1	0	8	0	" scarlet, 12 trusses	5	0	9	0
" " 12 bunches	0	0	0	0	Roses .. 12 bunches	0	0	0	0
Obrysanthemums 12 bebes.	6	0	12	0	" (iadour), per dozen	0	6	2	0
" " 12 blooms	0	6	2	0	" Tea.. .. dozen	0	9	3	0
Cornflower .. 12 bunches	0	0	0	0	" red dozen	1	0	2	0
Dahlias .. 12 bunches	0	0	0	0	Parne Violets (French)	4	0	5	9
Epiphyllum .. doz. blooms	0	6	0	0	Poinsettia .. 12 blooms	4	0	9	0
Eucharis .. per dozen	4	0	8	0	Primula (single) per bunch	0	4	0	6
Gardenias .. 12 blooms	6	0	12	0	" (double) per bunch	1	0	1	6
Gladioli .. 12 bunches	0	0	0	0	Pyrethrum .. 12 bunches	0	0	0	0
Hyacinths, Roman, 12 sprays	1	0	1	6	Stocks, various 12 bunches	0	0	0	0
Lapageria, white, 12 blooms	2	0	4	0	Tropæolum .. 12 bunches	1	6	2	0
Lapageria, red .. 12 blooms	1	0	2	0	Tuberose .. 12 blooms	1	0	2	0
" lougiflorum, 12 blms.	6	0	8	0	Violets .. 12 bunches	1	0	1	6
Lilac (white), French, bunch	6	0	8	0	" Czar, French, ps bunch	1	6	2	0



A WELL-STOCKED HOMESTEAD.

POULTRY rearing for market on a large scale has repeatedly been recommended as a means of affording some alleviation of the distress affecting so many farmers under the agricultural depression. So regarded it is worthy of particular attention as a branch of farming the profits of which are both sure and speedy, while the risks of loss may be fairly calculated beforehand. But we do not recommend Poultry farming to be taken up on a large scale at once by all farmers. Due regard must be had to locality, to many matters of detail, before the investment of much capital in such an undertaking is ventured upon. We showed last week how, by means of incubators, chicken hatching had ceased to be an uncertain and wasteful process, but there will always be a certain per-centage of loss among very young chickens. We have known hundreds of them to die from gapes simply from being kept on tainted land. It was our own serious losses upon a home farm in the centre of the Sussex poultry district which set us thinking about the cause of a disease common to all poultry and also to game. The probability of taint and infection occurred to us, and we resolved to put it to the test forthwith. About a hundred yards from the homestead we had about a quarter of an acre of grassland that was literally an island, for it was surrounded by a stream of water wide enough to form an effectual barrier to fowls, and here, as each brood was hatched, hen and chickens were brought and established in coops. Success full and perfect followed; not a single loss from gapes had we that season, for the chickens were kept on our island till large enough to be safe from attacks of a disease to which only very young chickens are subject. The knowledge so gained was subsequently turned to profitable account by many of our neighbours, as will be readily understood when we explain that the Sussex henwives get £20 per hundred from the dealers for early spring chickens. We commend this fact to the notice of farmers—may we venture to add of farmers' wives generally? One notable farmer's wife who is well known to us rears such a large number of chickens for the London market that a very handsome annual sum is realised. She has the able assistance of two of her daughters, one of whom superintends the poultry, and the other has charge of the dairy, the butter from which is in such high local repute that the demand for it is always in excess of the supply.

Regarded from such a reasonable point of view as an aid to successful farming and not as a substitute for corn-growing, the rearing of poultry and the production of eggs can hardly meet with serious objection from the most obstinate stickler for old customs. We concede the fact that a certain number of poultry are to be seen at every farm, but

they are generally kept for home use and not for market. It must be owned that there is room for considerable improvement here. Why should any farmer practically ignore the value of poultry as a marketable commodity? There are very few farms where from £100 to £200 or £300 a year might not be added to the income of the occupant from this source alone if only the matter was taken up in real earnest instead of being sneered at as women's work. It is by attention to such so-called trifles that many a man has been able to hold his own under difficulties to which so many others have succumbed. Depend upon it poultry management under good hands is anything but a trifle. It is worthy of our best efforts, and affords so ample a margin upon our outlay that though returns are quick, profits are the reverse of small. Curious indeed is it that such a matter should be so seriously affected by custom or locality. We are accustomed to hear of Norfolk turkey, of Surrey and Sussex chicken, as being offered at special prices in London markets, yet we know that both turkeys and chickens can be reared with equal facility and of equal quality in other counties. In Norfolk, Suffolk, and Essex—all great corn-growing counties—it is customary to see large flocks of turkeys out upon the corn stubbles after harvest, but then it must not be forgotten that there are other corn stubbles stretching far and wide—aye, even in the great dairy counties in the west, where few if any turkeys are ever seen. Why do we see poultry imported in such large quantities? Is it not because the general attention which we claim for it here obtains on the continent? We recently heard this matter discussed by a Cambridge professor, a keen political economist. Said he, "If I were a farmer I should certainly be inclined to rub my head and see if I could not obtain a share of the large sums annually paid for importations of eggs and poultry." Here is a fact which cannot be ignored, that while many of the farmers of this country are crying out for protection and other forms of State aid, they are apparently content to see large sums going into the pocket of the foreign farmer for an article of farm produce which might just as well be supplied from their neglected farms.

(To be continued.)

OUR LETTER BOX.

Hens not Laying—Plymouth Rocks (*M. B. D.*).—Old hens cannot be depended on for laying in the winter, and the probability is that you will not have any eggs worth mentioning from yours until the spring, no matter how well you may feed them and how good their "run" may be. For egg-raising in winter you must have strong pullets hatched early in the spring. These commence laying in the autumn, and afford eggs for many weeks. A Dorking and Brahma cross is good for egg-producing and table, but some of the chickens have yellow legs. Plymouth Rocks are large, hardy, and handsome, good layers, and good table fowls. You would perhaps like them. The breed is not described in old poultry books, as it is of comparatively recent introduction from America. Mr. J. Ollerhead, Wimbledon House Gardens, Wimbledon, has one of the finest stocks we know of this valuable breed of fowls.

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude, 111 feet.

DATE.	9 A.M.					IN THE DAY.				
	Barometer at 32° and Sea Level	Hygrometer.		Direction of Wind.	Temp. of Soil at 1 foot.	Shade Temperature.		Radiation Temperature		Rain
		Dry.	Wet.			Max.	Min.	In sun.	On grass.	
1886.	Inches.	deg.	deg.	S.W.	deg.	deg.	deg.	deg.	deg.	In.
December.										
Sunday	29.342	42.4	39.8	S.W.	41.0	49.3	41.2	64.6	35.3	—
Monday	29.723	43.8	44.2	W.	40.8	45.3	40.6	48.8	32.8	0.091
Tuesday	29.512	41.4	39.8	E.	41.2	48.2	38.8	55.3	33.8	0.642
Wednesday ..	29.091	46.1	44.1	S.	41.2	47.9	49.1	50.8	33.7	0.038
Thursday	29.402	37.7	37.1	calm	41.4	41.2	36.9	53.6	30.6	—
Friday	29.634	30.9	30.9	E.	41.2	33.6	30.1	34.2	25.8	0.056
Saturday	29.719	25.6	25.0	W.	39.2	33.7	23.9	47.4	27.2	—
	29.497	38.3	37.0		40.7	42.7	35.9	50.7	31.3	0.327

* Covered by snow.

REMARKS.

12th.—Bright morning, fair throughout.

13th.—Dull, with slight rain at intervals, and fog in early afternoon.

14th.—Dull early, wet morning from about 10.30, with squalls of rain and hail, and darkness at times; sunshine in afternoon.


15th.—Heavy rain in the small hours; dull, damp morning; rain at noon and 5.30 P.M.; sunbue in afternoon.

16th.—Overcast morning, sunbue in afternoon, bright evening.

17th.—Foggy all day, dense at times; snow in late evening.

18th.—Hard frost, bright and fine, with snow on ground.

A week of variable weather, bright sunshine, fog, heavy rain, and hard frost. Temperature a little below the average.—G. J. SYMONS.



COMING EVENTS

30
31
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5TH
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W

Sale of Orchids at Protheroe & Morris's Rooms, Cheapside.

2ND SUNDAY AFTER CHRISTMAS.

GREETINGS.



VERY many readers of this Journal—indeed, the majority—will receive the last number for 1886 on the last day of the year, though others, widely scattered in remote villages in Great Britain and Ireland, and in more distant homes beyond the sea, will have entered on the new year before they can peruse its pages. At the time of writing the old year is melting away—going steadily but surely with the snow that fell on the 26th inst., and which will be recorded as one of the “events” of the season. We will not dwell on a theme so chilling as the storm that will be memorable, but rather acknowledge the warm-hearted greetings that have been showered upon us during the past few days in the only practicable form open to us. We accept all the good wishes of which we are the recipients, come from whomsoever they may, reciprocating them in the fullest manner. Some of the letters before us we should like to publish, but as they may have been intended for our perusal alone they are regarded as private communications. One, however, is clearly not included in that category, for we are distinctly enjoined to “print it or not.” As it admirably embodies the sentiments of many correspondents expressed in felicitous terms we avail ourselves of the privilege accorded, and “print” the following greeting from “A Yorkshire Amateur.”

“This being the time of year for the sending of good wishes and congratulations to all our friends, may I convey mine to all connected with this Journal—its proprietor, its editors, its contributors, and, last but not least, its numerous readers? I have been for many years a constant and gratified reader of its pages, and I feel to have gradually acquired a kind of proprietorship in it, and an acquaintance—I had almost written friendship—with those who conduct it, and with those contributors who devote their leisure hours and spare moments to the pleasant task of writing down for our benefit those methods by means of which they have obtained almost absolute perfection in the various walks of their profession.

“I have something to say to all and each of the above mentioned, and I will begin with the proprietor and editors. To you, gentlemen, I say, it must be a great pleasure to know that your efforts for the furthering of the cause of horticulture, the increase of gardening, and the spread of the knowledge of the habits and successful cultivation of the myriads of beautiful and useful plants and shrubs which a bountiful Providence has bestowed on this earth for our benefit, have been and continue to be blessed with the largest measure of success. Is there a better paper than the Journal? Is there a paper which gives more or better information? There can, in my opinion, be only one answer to these questions, and it is a most unqualified and most emphatic ‘No!’

“I read with interest, a few weeks ago, a short history of this paper—of its initiation, its progress, and gradually increasing usefulness and success, until now, as I have just

intimated, it stands at the head of the horticultural literature of the present day. It is you, gentlemen—you, the editors of this Journal—who have done this; by your efforts and your care—to use a simile that will go to the heart of every gardener, you watched and tended the paper like a young and tender plant, as a good gardener watches and cares for a tiny seedling, which in course of time shall distance and outshine all competitors. It is a grand thing to deserve success, it is doubly gratifying to attain it. You have done well—you have done both.

“To you, Messieurs, the contributors, lay and clerical, I, in spirit (if you will not be offended) tender the right hand of fellowship. You too have had much to do with the raising of the Journal to the proud position it occupies. Over how many hundreds of pages have I followed your thoughts and instructions? Where all do so well it would be invidious to mention names, else I have a good many at the end of my pen. Some I might mention, I allude to those who have passed away; some, like fully ripened fruit, gathered in at the very end of autumn, like the late Mr. G. W. Johnson; others, called away sooner in manhood's prime, like our friend ‘Single-handed,’ whose articles illuminated these pages some years ago.

“Yours, my friends—the present contributors—is a labour of love, as theirs was; anybody who reads your articles can see that. You, too, have done well, but be not weary of well-doing. There is still much fallow ground and virgin soil untilled, much ignorance to be instructed, many fallacies to be eradicated, plenty of work for you yet. Go on and prosper, and may your efforts be crowned with success.

“And now for you, my friends and fellow amateurs, to you too I extend the hand of fellowship, and let me remind you that you belong to a grand old guild—the oldest and best in the world, the first to be founded on earth. I should like to tell you in a few words (and remember that I am one of the humblest among you) what gardening has done for me. What it has done for me it will do for anybody else who is in earnest. It has taught me many lessons—to persevere, for success comes not always at the first attempt. It has taught me to think, for knotty problems will arise sometimes which require to be solved. It has taught me to see, amongst other things, the beauty of every flower that blooms, from the exotic Orchid to the “wee crimson tippit flower,” the Daisy. Not naturally strong and healthy, it has by keeping me out in the fresh air benefited me greatly bodily, while mentally it has led me to make inquiries which have shown me more clearly what a wonderful connection there is between the smallest grain of dust blown about by the wind, and the greatest tree, or the greatest animal, even proud man himself, in creation. It has led my thoughts into channels which I think they could never have reached otherwise. I bless the day I commenced gardening. It is, if not the most, then one of the most innocent occupations possible. If any young man just commencing life should read these lines; if he is hesitating between a life of billiard-playing, drinking, theatre-going, and town-haunting generally (mind, I am no intolerant fanatic—moderation, the true temperance, is my motto), let me advise him to pause and try gardening—he will never regret it.

“Fellow readers, one word more—don't take offence, I mean none. Be earnest; you will do no good otherwise. What does the poet say?

“Lives of great men all remind us
We can make our lives sublime,
And, departing, leave behind us
Footprints on the sands of time;
Footprints that perhaps another,
Sailing o'er life's solemn main,
A forlorn and shipwrecked brother,
Seeing shall take heart again.”

“Man is an imitative animal, boy even more so. We never know when we may be leaving a footprint that may

influence another for good or evil. May all our footprints point in the right direction!"

We have not quite printed the whole of the genial letter, that we feel sure will be welcome to our readers, but have reserved to ourselves the pleasure of joining in the last sentiment of the writer—

A HAPPY NEW YEAR TO ALL.

EARLY MELONS.

WHERE a choice dessert has to be produced for the London season these are indispensable, and are easily obtained from the middle of May onwards, but to be able to pack them off in the "London hamper" from the middle of April requires a little more forethought and trouble. This is nothing compared with the satisfaction of placing on the employer's table fruit that is with difficulty obtained from the leading West End tradesmen, and as it is the business of these gentlemen to try and be first with any choice fruits, so it is that of the gardener not to be far behind them, or much of the credit is lost. Therefore to keep pace with the times the first batch should be started at once, and perhaps a few remarks at this season may not be out of place.

We have made it the practice for some years to make the first sowing on Boxing Day, and it seems to come natural now to do so. The seeds are sown in pairs in thumb pots and placed in bottom heat. As soon as the seed leaf appears they are placed on a shelf as near the glass as possible, the object being to induce them to show the first rough leaf before becoming too tall. The thumbs contain sufficient soil till this occurs. The plants are then potted into 48's, using soil the same temperature as the house—about 70°. In potting the stems should be carefully twisted round, so as to bring the seed leaf level with the rim, not dividing the ball. They are returned to the shelf, and what water is required is supplied by dipping the pot half its depth in tepid water, thus guarding against the danger of damping, as only that portion of the ball is moistened which contains the roots.

About this time the beds are made up with fermenting material, chiefly litter and leaves, as high as convenient. If the house was well heated both top and bottom I should adopt this plan, as it not only enables us to keep the plants well up to the light, but the material throws off vapour charged with ammonia, which seems to strengthen the plants remarkably. Upon this the hillocks of soil are placed about 18 inches apart, and in the course of about ten days from the time of potting the planting can be done, care being taken to keep the ball intact, and still allowing the two plants to grow side by side. They are secured at once to neat stakes, or they are apt to roll on their sides when dewing them with the syringe. The chief thing now is to try and get as sturdy a growth as possible by keeping a uniform heat of 75° by day, allowing it to fall 5° at night. I find the plants come on much better by covering the house at night with a rick sheet; by this means the atmosphere is rendered more genial than would be the case when so much heat is required in the pipes to keep the heat up, especially in windy weather; there is also a great saving in fuel.

When the plants have attained about six or eight leaves the weakest should be cut away. The advantage of growing them in pairs up to this stage is easily seen. The young tender plants are very liable to accident, either from insects or other causes. When the plants have reached the wires, say 18 inches or 2 feet high, I find female blooms can be produced sooner by pinching out the lead, as they show on the pair of laterals which follows directly after this operation; and I find, on referring to my notes of ten different seasons, I have been "setting" blooms as early as February 28th, and nearly every season from thirty to forty fruit were swelling by the 7th of March. As the female bloom is very valuable at this season, great care should be taken to get the pollen as dry as possible, as we have very little assistance from the sun in these short days.

Respecting the best varieties, most gardeners have their fancies, but I have never found one to answer so well as Best of All. There may be better flavoured Melons, but the constitution of different varieties has to be studied, and I have found this one, when several others were growing by its side in a spindly manner, make shorter jointed wood, with well cupped leaves, and showing female blooms freely. By following this system we have always cut fruits by the middle of April, though I am not in favour of taking two crops off the same plants. I have several times cut good exhibition fruits again in June.—RICHARD PARKER, *Impney, Droitwich*.

NOTES ON CHRYSANTHEMUMS.

NEW or supposed new Chrysanthemums make their appearance in such large numbers each year that it is at times rather bewildering

to know which varieties to grow the following season so that we may not be behind the times, and to an exhibitor this is important. It is impossible for almost any grower to burden himself with sorts that are not first-class. To growers not having the opportunity to judge for themselves by visiting the principal exhibitions in the metropolitan district, and depending upon catalogue descriptions entirely, it is no wonder that such persons are disappointed when flowering time comes. Catalogue descriptions to my mind are much too elaborate as a rule, the foreign ones particularly so. If more simple terms were used a great boon would be conferred upon growers of Chrysanthemums generally, which are a fast-increasing body, as shown by the increased number of exhibitions this season, also by the very strong competition in the various classes. For the information of those who have not had the opportunities of judging for themselves I have noted a few varieties which may be tried in the coming season. New incurred varieties are produced so sparingly that any addition to this class is always looked forward to with keen interest. Unfortunately only two sorts have appeared which promise well. The first is the yellow sport from Princess Teck, raised by Mr. Mizen of Mitcham, and placed in the hands of Mr. N. Davis of Camberwell for distribution, which is named Mrs. Norman Davis. I consider it quite an acquisition. It is a bright orange yellow, and evidently possesses in a marked degree the broad incurved florets of its parent. If it retain that form it cannot fail to be of the highest order of merit, as yellows of this class are much needed, for at present there are only two—Jardin des Plantes and Mr. Bunn. The former variety cannot always be obtained in first-class form; while the latter variety, being early, the best blooms are often over in the south of England before many of the shows. This new variety then will come in at a capital time.

Lord Eversley is the other variety alluded to. This also is a sport from Princess Teck, white, having a faint tinge of cream on its florets, which are very smooth, even (if it is possible) incurving better than its parent. It originated at Heckfield with Mr. Wildsmith three years ago, and has preserved its character since. A first-class certificate was awarded for it this year at the Reading Show, where it was much admired. It is certainly a grand late variety, and for producing flowers for late use is capital.

Bronze Queen of England has been disappointing this season, probably owing to over-propagation; but it should not be discarded without another trial for the reason above stated, and also that all the Queen type have this season shown a strong tendency to reflex their florets instead of incurve.

New Japanese varieties have this season appeared in large numbers and of variable quality. To a grower of new varieties this is not the least interesting part of the business. Much interest is attached to watching new varieties develop. Amongst seedlings large numbers are worthless, and it is right they should be, or I do not know what we should do with all that are grown. There is such a craving for novelties, particularly when they are improvements upon older varieties. The following sorts are all worthy of a trial in the coming season. The best variety of the year in the Japanese section is undoubtedly the new yellow sport from Meg Merrilies raised by Mr. T. Winkworth, Childwall Hall Gardens, Liverpool, and named Mr. Ralph Brocklebank. Having had an opportunity of inspecting it and its parent last year when the sport just appeared, I was much struck with its appearance, and I predicted for it a success should it become fixed. This has been successfully accomplished by Mr. Winkworth, who will no doubt in due course allow the public an opportunity of growing this charming variety. It is said to be of a better constitution even than its parent, not being so liable to damp. In character of the flower it is the counterpart of the parent except in colour, which is a soft yellow or deep primrose.

Edouard Audiguier is a very promising variety, the colour being quite new—namely, a deep purple maroon. The reverse of the petals being silvery gives it quite a distinct appearance, and being of large size it should be valuable as an exhibition flower. This is in the hands of Mr. Davis.—E. MOLYNEUX.

(To be continued.)

WATERTIGHT ASHPITS.

I OMITTED stating in my last communication on this subject that I keep my ashpits flooded with water, but seeing that they have not been made specially for that purpose, the quantity put in at "banking-up" time evaporates long before morning. I have no hesitation in stating that the advantage secured by employing steam, or water vapour mixed with air, will more than compensate for the rusting of the bars by the amount of hydrogen it supplies, and at the same time facilitating the combustion of the fuel. Mr. Burton seems to doubt the fact that red hot iron is oxidised by water and steam. He says, "It is contrary to the natural theory of metal oxidation, which does not take place with hot

metal." Of metals generally we have nothing to do, but as your correspondent's remarks are outside the facts, you may allow me to say a few words regarding the oxidation. Oxides of iron and manganese occur native and in a pure state. Oxides of others are procured by burning them in oxygen, or by heating the hydrate with the salt of the metal, or heating the metal with other substances capable of affording oxygen, such as potassic nitrate or chlorate, and by other means, but in all heat is invariably necessary to the rapid oxidation. Although iron will oxidise in a cold state, no chemist would adopt that method to obtain its oxide when it could be procured more quickly by making it red hot. And it is due to the rapid oxidation of red hot iron that chemists are able to accomplish some practical results. For instance, it is one of the methods employed in the preparation of hydrogen. A current of steam is passed through a red hot iron tube filled with iron borings, the iron takes up all the oxygen, and the hydrogen can be collected over the pneumatic trough.

Mr. Burton's illustrative experiment, which he meant to go to prove that red hot iron did not oxidise when in contact with water, was only an experiment half completed. Had he placed the piece which had been red hot and submerged in water on the blacksmith's anvil, and applied a hammer to it, he would have found little black scales fall from it, such as are seen around the anvil in every blacksmith's shop. These black scales are oxidised pieces of iron, and are known to the chemist as magnetic oxide of iron. I would give equations, but few would understand them who have not studied chemistry.

As to the "boiler and bars set but not in use" not lasting longer than one constantly at work, is a statement I cannot reconcile to facts. Seeing that iron will not oxidise in perfectly dry air, it is simply a question of the amount of aqueous vapour, or water, that may reach them, which will determine the period they will remain sound. Under ordinary circumstances they will see out a few of those in constant use.—J. RIDDELL, *Duncombe Park*.

PEARS.

[A lecture by Mr. T. Francis Rivers.]

I HAVE been asked to give some account of what I know about Pears. There is, of course, much to be said about a fruit which more than any other attracts the attention of the cultivated pomologist from the extraordinary development it has attained in our own time, the ancients having been contented with fruit certainly unequal in flavour to that which we enjoy. M. André Leroy, in his dictionary of pomology, has taken the trouble to make very learned researches into antique Pears, and enumerates four Greek and thirty-five sorts of ancient Rome; but he does not fix the time when these ceased to be catalogued, and gives only twelve sorts of Italian Pears between the fifteenth and sixteenth centuries, the varieties cultivated in France from Charlemagne to Louis XIII. numbering 260 kinds.

The Latin author Pliny names twenty kinds. Varro, Palladius, Cato, Columella, and Virgil are also pomologists and amateurs of Pears. The latter is very urgent in the matter of grafting Pears, but seems to have been aware of the modern axiom that "he who plants Pears, plants for his heirs;" his version being "*Inserere, Daphni, puros, carpent tua poma repotes.*"

Palladius recommends grafting the Apple on the Pear. The results were probably disastrous to the orchardist, and the practice was no doubt soon discontinued.

Pear trees are supposed to be indicated in the twenty-third verse of the fifth chapter of the second book of Samuel, but the word is more generally held to apply to the Mulberry. Dr. Karl Koch, writing to M. André Leroy in 1865, says, "I am certain, now that I have passed several years in the thinly populated countries of the Caucasus, Asia Minor, Armenia, and Persia, that all the European Pears are species become wild in our forests, and that in no case are they indigenous."

In 1665 John Rea, gent, published the "*Flora, Ceres, and Pomona*," in which he gives a list of twenty-one Pears described as being very good, one of them rejoicing in the extraordinary name of the "Dead Man's Pear." He describes the Winter Bon Chrétien as one of the most excellent, but requiring to be grafted on the Quince stock and trained to a wall. He also says, "that there are several good sorts of Wardens and baking Pears." In 1693 John Evelyn published a translation of the works of Monsieur de la Quintinye, a very voluminous, exact, and twaddling French author. In advising the setting out of a plantation of dwarf Pear trees, he begins with the choice of a dwarf tree to be planted alone—i.e., the "Winter Bon Chrétien," giving several reasons for this preference. "1, Because of its antiquity, and that by its singular excellence it gained the admiration and courtship of the world, the great monarchies, and principally that of old Rome having known and cultivated it under the name of *Crustumium*. 2, It was baptised at the very birth of Christianity itself, and consequently it should have the veneration of all Christian gardeners. 3, It should be considered of itself and with respect only to its own proper merit, which can alone entitle it to a preference." This is at all events a very proper decision

to arrive at, but the Winter Bon Chrétien has not kept the high rank assigned to it. De la Quintinye indulges in the most extravagant expressions of esteem, "That it grows to the weight of 2 lbs., that it is considered a handsome present to persons of quality, and that it is a Pear the beauty of which has caused the ablest gardeners to labour for it with the greatest passion." I have had a good experience of Pears, but I have never known this precious Pear except by name, but it may have degenerated, or we of the present time are more particular in our tastes. Of the other varieties named by Mons. de la Quintinye, the Autumn Bergamot, the St. Germain, the Colmar, and Crassanne have survived to our own time, but without holding rank as first class fruit; he, however, highly commends the Beurré Rouge, classing this as a synonym of the Beurré d'Amboise and Isambert, which he says, "possesses the first degree of goodness—viz., a smooth delicious softness with a fine delicate pulp," wasting many good epithets on the Winter Bon Chrétien, which would have been more properly applied to the Beurré Rouge. The Autumn Bergamot is not highly commended, although our friend says, "that it has a numerous and formidable party, and, indeed, that a thousand people assert that for its tender and melting pulp, its sweet and sugary juice, and the little smack of perfume which accompanies it, that is more valuable than all other Pears in general," remarks which a great many ignorant people make at the present day. De la Quintinye names some ninety or hundred sorts of which some of the names are expressive, as "Greedy Guts," "Chew Good," "Daughter of God," or "Fille Dieu." Some few of the sorts remain, among them the Rousselets, Chaumoutel, and St. Lezin. De la Quintinye's reasons for the enjoyment of Pears are curious. He states that "the rigorous cold which lasts from November to March enjoins our placing ourselves near the fire, and that to counteract the external foreign heat then taken in, Nature has provided us with Pears to prevent the great infirmities which might happen to us from the enjoyment of so much heat. So precisely at this time she has given us an admirable quantity of tender fruit, such as Bergamots, Louise Bonnes, Les Chasseries, Amberts, Virgoules, Epines, and St. Augustines." This garrulous author provides for the plantation of a thousand trees, but states that "the planter of so many would be a curious gentleman, for how could he dispose of 12,000 Pears unless he gave them away or made perry of them?" This difficulty would not be felt now. He concludes his remarks on Pears by a list of fifty good, forty-four indifferent, and sixty-six bad sorts.

In 1729 Batty Langley, in the "*Pomona*," gives the names of fifty-seven Pears. Those which are named by him and still cultivated are the Brown Beurré, Autumn Bergamot, Hampden's ditto, Crassanne, Epine d'Hiver, Jargonelle, Swan's Egg, and Windsor, and among baking Pears the Black Pear of Worcester and Catillac. Mr. Langley is not enthusiastic about Pears.

Switzer enumerates eighty Pears, advising the planting of the English Bergamot, "because of its goodness and antiquity, it being not impossible that it has been an inhabitant of this island ever since Julius Caesar conquered it, and that possibly it was the Assyrian Pear of Virgil, and was, as may be deduced from this, a part of the celebrated Gardens of Alcinoüs." A tree of this sort in the Sawbridgeworth Nurseries is said to be 300 years old. The Pears selected by Switzer appear certainly to have been the best of that time, and he testifies to the extreme goodness of the Winter Bon Chrétien.

Philip Miller, in his "*Gardeners' Dictionary*," 1759, begins his list with Petit Museau, and passes on to the Chio, Citron des Carmes, La Bellissime, bearing two crops in July and September, Jargonelle, and Cuisse Madame. The Cuisse Madame of the French is classed as a good Pear, and the Jargonelle as third rate; but Mons. Leroy describes the Cuisse Madame as a small inferior Pear ripening about the end of August, considering it as one of the few historical Greek Pears which have come down to us. The Poire d'Épargne or Jargonelle of André Leroy does not correspond with the outline of our Jargonelle, and he does not praise the fruit, calling it good only for the season. Our true English Jargonelle when ripened on a wall is exceeding good, juicy, and refreshing. Probably the spurious Jargonelle, which undoubtedly exists, has been introduced by those who have imported this sort from France, having been misled by the name, not being aware that the Jargonelle of the French nurseries is not the kind which passes under that name with us. Leroy says that Miller has muddled the Jargonelle, and that the confusion caused by him has lasted to our own time, the mischief arising from the Jargonelle and Cuisse Madame being classed by Mills as synonymous.

Miller names eighty sorts, and states that he has included in his list many sorts that are not worth planting to please those who are fond of a great variety. He is aware of the eccentricity

of the ripening period of Pears, for he says, "I have known the fruit of a Pear tree in one year all ripe and gone by the middle of October, and the very next year the fruit has not been fit to eat until the very middle of December." All of us can endorse Miller's remarks. I have found it a very difficult matter to fix the date of ripening, and the variations noticed in 1759 find their equivalent in 1886. In reference to this matter, Miller says that "if we look back to the best French authors of fifty years ago, they put down the times of ripening of Pears a month or six weeks later than now, and that in London it is much about the same, the time of ripening in London being quite as forward as Paris." This remark does not seem to indicate that the climate is becoming colder, as many are inclined to think. There are many writers on pomology after Philip Miller, but as far as the names of Pears are concerned we may step from 1759 to 1831, when a book was published by George Lindley and edited by Dr. Lindley, entitled "A Guide to the Orchard and Kitchen Garden." The list of Pears is here brought down nearly to our own time, 150 dessert Pears being enumerated, among them many of our old friends of 1665, 1693, 1729, 1731, and 1789, and adding to the list a number of new sorts raised from seed by Van Mons, Nelis, and others. According to Lindley many of these are not worth much, the Duchesse d'Angoulême and Beurré Diel being credited with special praise, the Marie Louise, however, not being very highly commended. In 1842 the Royal Horticultural Society published a list of 442 sorts, and Dr. Hogg, in the fifth edition of the "Fruit Manual," 1884, describes 732 sorts. André Leroy, in the "Dictionary of Pomology" has 915 sorts, and the cry is, "Still they come." The new sorts that have been constantly introduced showing that the highest standard of excellence has not yet been reached, and that no fruit is so susceptible of high development as the Pear, as it advances step by step with the higher cultivation of man; this advance being by no means rapid, as it has taken many centuries to produce a Pear of the quality of the Doyenné du Comice, this fruit being far superior to any of those noticed by Lindley in 1831.

It is curious that Shakespeare, country bred, should never have mentioned Pears by name, save once, in "Romeo and Juliet," when he alludes to the Popperin Pear, now known in Worcestershire as the Poplar Pear, still one of the common perry Pears of the county. It is evident from this meagre notice of Pears that Shakespeare's tastes were not gratified by good fruit. In "The Merry Wives of Windsor" he uses the phrase, "crestfallen like a dried Pear." The plump and juicy Pears of our century when fallen rot before they wither, but the tough perry Pears wither before they rot. Worcestershire abounds with Pear orchards, and Shakespeare, had he seen these orchards in full bloom, would surely have expressed his admiration. There is no allusion in any of his plays, poems, or sonnets to the beautiful spectacle of a Pear tree sheeted with its snow-white blossoms. Another country poet, Robert Herrick, although enthusiastic in praise of Strawberries and Cherries, never alludes to Pears. Herrick spent the best years of his life in Devonshire, which must have been almost destitute of Pear trees. Sir John Suckling celebrates the charms of a young lady in his lines—

"Her cheeks are like the Katherine Pear,
The side that's next the sun."

Batty Langley notices two Katharine Pears, the Royal and the Queen.

Standard Pears are utterly unsuited for small gardens, and should be grown in orchards only. Those who are blessed with old and decrepit standard trees may renew their vigorous growth by heading them down. In three years young, healthy, and fruitful branches will replace the old and useless wood of generations. A difference is sometimes observed in the conduct of trees on the Pear stock. Some will be more fruitful and bear larger fruit than other trees of the same sort and age. This arises from the influence of the stock upon the graft. All Pear stocks are raised from seed, and great variety of course exists. The difference sometimes seen in the produce of trees growing side by side is often so great as to cause doubts of the identity of the fruit.

The seedling Pear stocks imported from France are raised from the pips of perry Pears, and of these two sorts are distinguished, one with smooth bright leaves from the district of Le Mans, and the other, woolly or sage-leaved, from the province of Anjou. I believe the pips of the wild or forest Pear are employed in Germany for raising stocks.

Garden trees on the Pear stock should be either trained as espaliers, wall trees, or pyramids. Root pruning will

cause unfruitful trees to bear, and those who have them will do well to practise it. The Pear stock is not fastidious about soil. My own experience of the Quince stock convinces me that it is the most useful stock for all styles of garden training, it is adapted for espaliers, pyramids, bushes and cordons. Cordon training, although known and practised in England for some time, has been brought more prominently into fashion during the last thirty years. It is perhaps the most simple and productive of all sorts of training. An oak fence 7 feet high, planted with diagonal trees 18 inches apart, in four years will produce a large quantity of fruit, and a wall from 12 to 15 feet high in five to six years will produce like results. I have found that pruning twice a year (in June and October) is sufficient to keep the trees in fruitful order. In the June pruning the young shoots must be stopped at the fifth or sixth leaf, and in October every spur must be pruned as close to the main stem as possible, avoiding any injury to the fruit buds, which are of course easily detected, diagonal cordons may also be trained to wire trellises, and treated in the same fashion; this is a very interesting and ornamental style. The single horizontal cordons and the double horizontal cordons, trained at 18 inches from the ground, form a neat and fruitful edging to side walks. The five-branched vertical cordon has five upright shoots springing from a common horizontal base. These may be planted 4 feet apart. The horizontal cordon has the branches trained at regular intervals from a main vertical stem, this form is admirably adapted for espaliers by garden walks, and is very tractable and pleasant to manage. Vertical cordons planted in the open ground 4 feet apart will give large crops of fruit. Two forms of cordon training seem to me to be very unpractical—i.e., vase cordon and the plan of training over an arched trellis, the former is more trouble to manage than a bush tree and gives no better results, and the latter is contrary to common sense, part of the tree being grown in the shade. All cordons require the same system of pruning. Pyramid and bush trees on the Quince stock are charming garden trees, the pruning is somewhat different to that practised for cordon trees, the side shoots should be pruned in June and the leading shoot untouched until October, superfluous shoots being occasionally removed during the summer to admit the sun, the unpruned leading shoot must be shortened back in October.

Garden trees require root management, and a modified system of root-pruning should be practised with all. A circular trench about 3 feet from the stem of the tree should be dug annually if the room for the tree is restricted, in the autumn the soil in this trench should be refreshed with manure and fresh soil, and a surface dressing of artificial manure applied during the spring. For the latter purpose soot, superphosphate of lime, and guano are probably the most useful. The trench and the manure will render the planter independent of the soil. If Pear-growing is to be made a certainty, cultivation under glass must be adopted. A glass house is of course a prime necessity, it may be as plain as possible for the purposes of protection. During the spring the trees can be packed closely, for in the early period of growth they do not require much space; about the end of May, or when all danger of frost is past, many of the trees should be put out of doors, leaving enough in the house to stand 3 feet from each other. The trees taken out of the house should be plunged in a border prepared for them, and the trees inside sunk in the soil up to the rim of the pot, the sides of the pot should be perforated, but this is not an absolute necessity. The trees should be surface-dressed with manure, and watered with manure water twice or three times a week, when under glass abundance of air must be given. Culture under glass makes a crop a certainty, and requires no more attention than is given to Melon or Cucumber growing.

Protection to cordon trees trained about 1 foot from the ground may be given by planks on each side placed on edge supported by short stakes and covered with mats during severe frost. Ground vineries also form very efficient protection, but they are not so cheap as the planks.

Raising seedling Pears is always interesting from the uncertainty which attends the pursuit. I have raised some hundreds from the best sorts known, which I have crossed in every conceivable fashion. The "Conference" Pear, which gained the suffrages of the Committee of the Pear Congress of 1885, came from a baking Pear, the Leon le Clerc de Laval, the pips of which I planted without any special design. All pips intended for seed should be taken from the finest and best developed fruit.

The sorts of Pears of recent introduction selected by the Pear Congress of 1885 were the following :—

Beurré Gifford
Clapp's Favourite
Summer Beurré d'Aremberg
Madame Treve
Beurré Dumont
Pitnaston Duchess
Pr sident d'Osmanville
Madame André Leroy
Conference

Emile d'Heyst
Beurré d'Anjou
Marie Benoist
Beurré de Jonghe
Rose Crassane
Duchesse de Bordeaux
Olivier de Serres
Nouvelle Fulvie
L'Inconnue

And for orchards and market gardens

Beacon
Fertility
Souvenir du Congrès

Marie Louise d'Uccle
Durondeau

The improvement in Pears will no doubt continue, and in 1886 amateurs will wonder that we could be contented with fruit so inferior to that which they will enjoy, even as we are no longer satisfied with the fruits which charmed De la Quintinye and his friends.

THOUGHTS ON CURRENT TOPICS.

I WAS once taken for a doctor. The sensation was a little curious, but fleeting. It was in this way. A very respectable-looking gardener came up to me at the Liverpool Show last June, and asked politely, but a trifle excitedly, if I was Dr. Masters. He was somewhat overheated. On receiving a negative reply his response was, "I want to see him, as I hear he has been 'letting out' in the tent, and telling gardeners to mind their own business, and not to interfere about naming plants." I think my interlocutor had named one for which a certificate had been granted some time previously, hence, presumably, his interest in the matter. I thought no more about the episode till reading the discussion at the tercentenary meeting, as reported on page 522, and could not suppress the thought that the learned Doctor might sometimes with advantage follow his own advice in not interfering with what he does not understand. If he would quietly allow gardeners to "mind their own business" on such plain matters as Potato raising and growing it would be none the worse for him and for them.

OUR mentor is not, I think, a gardener, but a Doctor of Medicine, and like many another, is a good botanist, hence his lectures to his humbler and more practical brethren. But the majority of these appear to manage very well with a fair field to work in, and perhaps they know just enough science to guide them in the right path, though they make no parade about it. If there are any better gardeners as a body in the world than British gardeners are, it would be well to know where they are to be found. I have been told by persons who ought to know that the produce of continental gardens as represented in its broadest aspect by plants, flowers, fruit, and vegetables at public exhibitions is far below the average of that grown and displayed by gardeners in this country. Gardeners appreciate the teaching of scientists when it can be turned to practical account, and it is fair to suppose that scientists approve of the action of those workers who give in return a little lesson that long practice has taught them to be sound, and which events now and then show is needed.

How any scientific man could publicly proclaim his belief that the principal method employed by cultivators in raising new varieties of Potatoes was by "selection" passes comprehension. If science is needed by practicalists, practical knowledge is obviously required by scientists, who come to the front as teachers. Mr. Alexander Dean had the whip-hand in the discussion on the subject without a doubt. Not one per cent. of the new varieties of Potatoes that have been raised during the past ten years are the result of selection. With one or two exceptions they are the outcome of cross-fertilisation. The Doctor's lamentations of the scientific ignorance of gardeners may become a little tiresome, and it is well that their well-intentioned teacher should know it.

WHAT is to be the outcome of the Potato tercentenary? A "Potato Society" is foreshadowed; and suppose it should be formed, what would the "Society" do that would not be accomplished by trade enterprise in the production of new varieties and existing horticultural societies, notably by the Vegetable Committee of the R.H.S. in estimating their merits? As to cultivation, if gardeners cannot grow Potatoes now they will never be able to grow them, and a "Society" could scarcely do any good in that respect. I am not condemning a Potato Society, but only "thinking about" the proposition, and fishing for information. But this idea comes to the front now. If a Potato Society is a want of the times, why not a Wheat and Barley Society? I think, on the whole, special societies have done good, but if we extend them further the difficulty appears to arise as to know where to stop. Perhaps some of the "friends" can enlighten us on this subject.

I HAVE been waiting as patiently as possible in the expectation of seeing a reply several columns in length to Mr. Iggulden's wail (page 425) on the subject of hard water destroying boilers and pipes. Judging from the nature of the communication on the page quoted we might not unreasonably conclude there was no rain at Marston or in Wales. I have never yet seen a glass structure that did not have as much rain fall on its roof in a year that, if collected, would abundantly supply the apparatus employed in heating the house. But the "employer" will not incur the

cost of tanks. In this case he might perhaps be willing to risk the outlay for one or two petroleum casks. To incur necessarily considerable cost in purchasing and fixing boilers and pipes, and then to fill them with hard water while the soft is wasted or used for other purposes, is such a palpable mistake that it is surprising there is any necessity for writing about it at all. This I think is the substance of the communication of "A. W." on page 524.

ANENT the subject of water in ashpits. I thought Mr. Bardney in his generally interesting article on page 526 placed himself in a rather peculiar position. He appears to have studied Hood and Andrew Murray, and read all that has been written of late bearing on this matter, yet it is evident he is not satisfied. It seems highly probable that he will not admit any argument as conclusive till he has proved its soundness. I do not blame him; but when he says "No water is used below the boilers here, nor will it be until the advantages arising from its use in the preservation of fire bars, has been proved," I am at a loss to know if he will not believe in arguments till he has proved them, and will not adopt the plan to prove it, how he intends arriving at a decision. A little information on this subject, conveyed in a few lines, would almost certainly be acceptable to many readers of the Journal besides—A THINKER.

N.B.—When I saw the last issue of Journal I thought it a very first-rate one, and a good deal better without the foregoing crowded-out jottings than with them. If others think the same there will be a general agreement for once—a pleasant thought for the end of the year for pacific minds to dwell upon. But what of the future? We must wait and see.—A. T.

SOME GOOD VEGETABLES OF 1886.

(Continued from page 557).

WE left off at Cauliflowers and resume at Cucumbers. Multiplication has been a common rule amongst these of late years, but I am unable to tell what has been gained by it. Every new one is "handsome in form, fine in colour, grand for the table, superb for exhibition," and in short perfect, yet it is remarkable the large number of inferior Cucumbers we see at shows; but this is not surprising, as it is culture and not variety which produces handsome fruit. I do not know any sort that will not produce model fruits if properly grown, and those with the greatest recommendations will come crooked, long necked, and altogether inferior with poor culture. Large Cucumbers are more difficult to grow perfectly than short ones, and for this reason the Cardiff Castle variety is to be recommended above all others, as it is only about 15 inches in length, of fine form, and alike good in summer and winter. It is the best Cucumber introduced during the last ten years at least, and as a variety slightly longer. Sutton's Purley Park Hero merits high praise; it is of the pure Telegraph type, and when this is true the produce is always excellent. Of Ridge Cucumbers, Sutton's King of the Ridge is excellent in form, quality, and quantity.

Celery is a most important crop, but all varieties offered are not good, and very large sorts are to be avoided. The Aylesbury Prize Red is a new one of 1886; we tried a 1s. packet of this Celery, and the result did not equal our expectations. The American White Plume is gaining favour as an autumn variety, and in my opinion it will be a popular autumn Celery. Sutton's White Gem is of the type of the Sandringham, but is more compact and always proves first-rate; it is superb for stewing. Major Clarke's Red is not a new variety, but it is a good one, and of all reds we have again found it the best. There is still a grand opening for a perfectly hardy variety, as all sorts suffer much from frost.

Amongst Carrots the French Forcing is still the earliest variety, and as it is so short it is most suitable for hotbeds in forcing. The Short Horn follows this, and James' Intermediate has been superseded in quality by Sutton's new Red Intermediate. This is a grand main-crop Carrot. As a novelty Carter's Golden Ball is pretty and useful. Good Carrots are amongst the most valuable of all roots, and it is a great advantage to grow only the best sorts.

Endive is not generally grown in small gardens, but wherever a gardener is employed it is expected, and all will find Veitch's Improved Round Leaved Batavian to be excellent. It is large in size, good in quality, and very hardy. Carter's Model Endive is a gem, and the best of the curled section. Digswell Prize has not been satisfactory.

In coming to Lettuces, Veitch's Perfect Gem heads the list amongst Cabbage varieties. It is compact in growth, firm, and excellent in quality. This Lettuce first attracted my attention at Chiswick, and I have grown it ever since. The Paris Market is the earliest of all. Sutton's Red-edged Marble is distinct in colour and fine in quality, and Golden Ball from the same quarter is grand, while Criterion and Summerhill from Messrs. Webb of Stourbridge are two fine varieties. Summerhill is the largest of all Cabbage Lettuces, and the quality is first-rate. These are all summer Lettuces. New and good winter ones are not so plentiful, and raisers

might turn their attention to this section with advantage. The Hardy Green Hammersmith is still the best Cabbage variety for winter use, and the Bath or Brown Cos is the hardiest in this division. Hardy's Northern King is newer, but it does not fold well, and we do not like it on that account. The Reading Mammoth White is a giant; it is the largest of all, very tender, and a grand big Lettuce; and Webb's Monstrous White Cos is of high merit. We were long in favour of the Paris White and Green Cos varieties, but have given them up to make room for those named.

Of Leeks we have tried many, and our experience of 1886 has led us to say that in future our main crop will consist of Sutton's Prizetaker. We have had several prizes for it lately, but had we trusted to the other varieties grown we would not have been "in the money." The Lyon, and several other specials I could name, have a bad habit of coming with a round Onion-like end, and this, in my opinion, spoils them; but the Prizetaker is alike thick from root to leaf, and is of the very best quality. We weighed some of our specimens early in September, and they turned the scales at 3 lbs.—A KITCHEN GARDENER.

(To be continued.)

ORCHIDS.

MASDEVALLIA TOVARENSIS.

How is it that we hear so little of this elegant little plant now? When it was being sold at a guinea a leaf its beauty was extolled as regularly as the Christmas holidays, which is also the time when the plants are in full beauty. We have it now in full flower. The largest plant had on it 197 blossoms open at once—a sheet of dazzling whiteness. It is one of the easiest grown of Masdevallias, and now that plants of it can be purchased for 5s. each no one should be without it. We grow it in the cool house from April to October, and in the Cattleya house during the rest of the year. Orchids should be valued for their intrinsic beauty, and not because they can be sold for fabulous prices at Stevens' sale rooms, whereas many persons have a notion that these high-priced plants in all cases are so much more beautiful. Our Masdevallia tovarensis would have sold for £100 four years ago, now it would not realise a hundred sixpences, but it is none the less beautiful because of this.—J. DOUGLAS.

[We have seen Mr. Douglas's specimens, and they merit all he says of them. This Masdevallia is undoubtedly one of the most useful for winter flowering. The value of really good Orchids varies in proportion to their scarcity or abundance.]

VANILLA.

A LADY writer in the *Planter and Farmer* says:—The most precious crop here (South Sea Islands) is Vanilla, which is both pretty and lucrative, being worth about 4 dols. a pound. It is a luxuriant creeper, and grows so freely that a branch broken off and falling on the ground takes root of its own accord, and it climbs all over the tall Coffee shrubs, the Palms, Avocado Pears, and Orange trees, and everything that comes in its way, growing best on living wood, the tendrils thence deriving sustenance. It also flourishes best in unweeded grounds, the roots being thereby kept cool, so the steep wooded hill-side is densely matted with this fragrant spice, which scents the whole air; indeed, the atmosphere of the house is redolent of Vanilla. It is like living in a spiced box, as the pods are laid to dry in every available corner. They must be gathered unripe and dried in a moist warm place. Sometimes they are packed under layers of quilts to prevent them from bursting, and so lose their fragrant essence. All this sounds very pleasant, and only suggests light work. Yet in truth this cultivation involves most exhausting toil. The plant is an exotic; it lives in these isles by the will of the planter, not by Nature's law. In its native home exquisite humming birds hover over its blossoms, therein darting their long bills in search of honey, and drawing them forth clogged with the golden pollen which they carry to the next flower, thus doing Nature's work of fertilisation. Here the flowers have no such dainty wooers, and the Vanilla bears no fruit unless fertilised by human hands. So M. and Madame Valles and their son divide the steep hillside into three sections, and each morning they patiently but wearily toil up and down, up and down again, and again, in order to manipulate each blossom that has expanded during the night. "Faire le mariage des fleurs" as Madame Valle describes her daily task, is no sinecure; it must be done during the hottest hours of the day, when any exertion is most exhausting. It needs a keen eye to detect each fresh blossom, and any neglected flower withers or drops. Each day the ripened pods must be gathered, and in dry weather the plants require frequent watering and indescribable toil.

WASPS AND EARWIGS.

THE past season has been a peculiar one so far as my experience and observations have been. Last spring we had more queen wasps than ever I remember before the long spell of wet weather in May, which destroyed the bulk of the nests just as they were started, and the greater part of the queens perished with them. What nests were on dry banks or in hollow

trees do not appear to have produced many queens for next season. Late in the autumn I took a nest of *Vespa vulgaris* for a lecture, expecting to obtain some hundreds of queens as in previous years, but there was not a single young queen, only the mother of the colony, there being a large quantity of males and neuters. I have not seen half a dozen young queens this autumn on the wing, and I am looking forward to next season with interest. Can anyone kindly give any explanation?

Earwigs have been more numerous than ever I remember, and have done great damage to fruit. When gathering some Keswick Codlin Apples for storing I found they were badly eaten, although I had not noticed many earwigs. I had also a tree of Worcester Pearmain Apple, which were every one begun, and consequently spoiled for storing. I now determined on trapping, and procured from the hedgerows a quantity of dry Hemlock stems, which were cut into lengths of about a foot. These I rubbed in the fruit hard, making some of the pulp adhere, and placed them between the forks of the branches, or fastened them to the stems by plant wire, and in a few weeks I caught over 2500 earwigs, and even now I find they take to the traps in mild weather. On one occasion I counted the proceeds of my round, and found I had 382. I have hundreds alive now in a box with a glass lid, wishing to know something of their natural history. I always read "Entomologist's" notes with interest, but never remember seeing a chapter on these two important enemies of gardeners. Will he kindly reply? I shall be pleased to see the experience of others.—J. HAM.

BERRY-BEARING PLANTS.

In addition to the Holly, which is indispensable at this time of year, berry-bearing plants in pots are particularly useful and effective for many forms of decoration, and are especially commendable on account of their lasting properties. *Ardisia crenulata* is worth more extended culture. It can be raised from seed sown in heat, although they are a long time before they germinate, and also by cuttings from half-ripened shoots that spring from the stem. They should then be grown in heat and moisture until they are placed in 5-inch pots, a suitable size for them. From this stage they must have abundance of light and a good circulation of air to harden their wood, or they will not flower and fruit freely. When well grown and berried the plants are most effective as an edging to groups or for using singly; in fact they can be tastefully arranged amongst any plants.

Rivina humilis is very graceful, and can be used with great effect rising above dwarf compact plants. It naturally grows 18 inches or 2 feet high, and its drooping bunches of Red Currant-like berries, which are freely produced, are very telling. This plant lasts well, and when it has done duty and become shabby it can be conveyed to the rubbish heap. It is best raised from seed, and if plants have been once grown in the stove, or other warm structure, seedlings are certain to spring up in quantity amongst the gravel or other moisture-holding material. If a few are potted or raised by sowing the seeds at different times a succession of plants can be had.

Callicarpa purpurea is a useful plant with purple berries that are produced in bunches from the axils of the leaves along the current season's wood. This is readily raised from cuttings of young shoots in early spring, but two-year-old plants berry best in pots. They should be rested after the plants are shabby, then pruned well and started into growth in heat. During the growing season a high temperature is not needed, but the plants must have abundance of light to ripen the growth, then they will flower freely and set their berries. Although this can be grown very effectively in pots, it is much better when planted in a light warm conservatory, where it will make shoots several feet in length, 2 or 3 feet of which will be thickly studded with small purple berries.

Solanums are unquestionably amongst the most useful berry-bearing plants, for they will bear room and church decoration without much injury. After such treatment they only need pruning back and starting again into growth. Old plants produce the most berries, but good examples can be grown in a season from cuttings. To grow them well in the northern parts of the country they must be pushed early into growth and the berries set in a frame before they are turned outside. This insures them being well berried even in the worst of seasons. No greater or more striking effect can be produced than a group of *Chrysanthemums* edged with well-berried *Solanums*, or when they are over Callas take their place, and the *Solanums* still remain good.

The last that will be noticed are *Pernettyas*, and for Christmas decoration in pots they are equally as effective as *Solanums*. The newer varieties are dwarf and berry with great freedom, in fact some plants we have now have a mass of berries upon them. These can be grown outside in a sunny open position, and lifted and potted in autumn, and when they have done their duty they can be planted outside again. Any shoots that show signs of running away should be well knifed back. The following are amongst the best—*Atrosanguinea*, *atrococcinea*, *atropurpurea*, *lilacina*, *rosea major*, *rubra purpurea*, *rosea nana*, *coccinea*, and *carnea*.—A NORTHERNER.

VARIETIES OF PEACHES AND NECTARINES, AND TIME OF RIPENING.

Now that preparations are being made for another season, a few remarks on the above may be useful. I have divided the list into two classes—viz., those grown as fan trees on a trellis, which are planted in borders in the ordinary way, and those grown as pyramid and bush trees in pots. It is not advisable to compare all of the two classes together (although all grew in the same house), because the pot trees are to a cer-

tain extent shaded by those on the trellis, and consequently have not such a favourable chance for ripening.

TRELLIS TREES.

NECTARINES.

Name.	First Flowers Open	First Fruit Ripe.
Albert Victor	March 24	August 28
Lord Napier.....	" 28	" 9
Pine Apple	" 28	" 30

PEACHES.

Name.	First Flowers Open	First Fruit Ripe.
Barrington	March 28	September 21
Bellegarde	" 24	August 16
Dr. Hogg	" 24	" 26
Early Grosse Mignonne ...	" 28	" 24
Lord Palmerston.....	" 28	September 18
Prince of Wales	" 24	August 28
Princess of Wales	" 24	September 24
Salwey	" 28	October 11
Violet Hative	" 24	August 16

POT TREES.

NECTARINES.

Name.	First Flowers Open	First Fruit Ripe.
Albert Victor	March 28	September 15
Byron.....	" 28	" 10
Elruge	" 28	August 28
Gordonii	" 27	September 10
Humboldt	" 28	" 10
Lord Napier.....	" 24	August 20
Pine Apple	" 28	September 10
Rivers' Orange.....	" 27	" 14
Stanwick Elruge.....	" 24	August 28
Victoria	" 28	September 22
Violette Hative	" 27	" 1

PEACHES.

Name.	First Flowers Open	First Fruit Ripe.
Alexander	March 28	July 12
Albatross	" 27	September 17
Bellegarde	" 28	" 10
Chancellor	" 27	August 20
Crimson Galande	" 28	September 10
Dr. Hogg	" 28	August 28
Dymond	" 24	" 20
Early Alfred.....	" 21	" 24
Early Beatrice.....	" 28	July 21
Goshawk	" 27	September 2
Grosse Mignonne	" 22	" 17
Hales' Early	" 27	July 31
Lady Palmerston	" 27	October 13
Merlin	" 28	August 24
Princess of Wales	" 28	September 22
Royal George	" 24	August 28
Sea Eagle	" 24	September 15
Salwey	" 29	October 18

All the varieties mentioned were grown in our large house. Fire heat is available if required, but was only used a few times to a moderate extent, and principally early in the season to keep out frost. From a strictly economical point of view (by which too much of horticulture in private gardens has to be judged at the present time), I am not in favour of pot culture. There is a great amount of labour attached to it in comparison with trees planted out and trained on a trellis; neither is it possible, as a rule, to get such large fruits from pot trees. They are, however, very interesting for amateurs who have plenty of time to spare and require some light and healthy amusement; it is also obvious that a much larger collection of varieties can be grown by this means; but if fine large fruit is wanted that will look well on the dessert table, and occasionally take an honourable place at the exhibitions, there is nothing to equal good fan-trained trees on a trellis.—W. H. DIVERS, *Ketton Hall Stamford*.

AURICULA CAMPBELL'S GREEN-EDGE.

THE variety grown under this name was raised by Mr. Peter Campbell of Falkirk. Its history is this. Some twelve years ago Mr. Campbell sent me a box containing pips of a large number of his seedlings, amongst them was one or two good green-edges. One I mentioned as being particularly fine in my note to Campbell. Sub-

sequently he sent me a small plant of it in exchange for something else. I was disappointed with it, as it never came up to its first maiden promise. After some five or six years I had propagated a dozen plants of it, and as no name was given to me with it when it was exhibited, I simply wrote on the label Campbell's Green-edge. Campbell made no conditions or stipulations when he gave me the plant, and I had no hesitation, after six years, in giving plants to friends who called here. It is a free grower, but third-rate as regards quality. The above is the true history of Campbell's Green-edge.—J. DOUGLAS.

AN OLD LECTURE ON POTATOES.

BY MR. ROBERT FENN.

(Continued from page 536.)

My practice in preparing for Potatoes is to double dig the ground 2 feet deep, keeping the bottom spit down, and merely shovelling the crumbs of the top spit up to the surface. It is always safer to do this than to bring the whole bottom spit of subsoil up at once. A large body of soil is thus made porous to receive the warmth and action of the atmosphere, encouraging the decomposition of organic and other substances, ever present (to a great depth) in all soils, and which locked out from the sun and air would remain there unproductive till doomsday.

I will mention one or two instances of the value of trenching. The first relative to an old garden which came into my occupation. It was willingly given up by the former tenant as being a patch of ground comparatively worthless, and would scarcely grow Turnips larger than hen's eggs. I had a dressing of road scrapings hauled on and spread at the rate of sixty loads to the acre. It was then double dug, the crumbs between the spits only being shovelled upon the surface. This trenching affair caused rather a sensation, though little was said to me on the subject. I sowed the ground in the spring in drills with the White Belgian Carrot and the Yellow Globe and Long Red Mangold Wurtzels. I shall never forget the splendid crops, and I sold the Carrots as something wonderful in Ludlow Market at 5s. per cwt.

My second example refers to a garden that had been under cultivation for upwards of 200 years, and for a long time was considered as entailing more expense than it was worth, and the crops were certainly miserable. I knew that when a man found his cart sticking in the mud it was very little use calling on Jupiter for assistance; unless he put his own shoulder to the wheel, so I turned up my sleeves and set to work by probing the subsoil. I found it all right, but it had never been disturbed since the garden was made; below the depth of 30 inches a plastic clay presented itself, which made me decide at once for drains. The ground was drained and trenched, care being taken to keep the subsoil down. Several years' collection of refuse was cleaned out of backyards, and added as the completion and planting went on, which was all the manure afforded, I cropped the ground the first year after this chiefly with Potatoes. and the result gave over 200 sacks for the acre, and the bountiful produce the garden continued to yield, coupled with the vigorous health of the fruit trees and ornamental shrubs, was remarkable.

PREPARING SETS.

My experience leads me to believe that seed Potatoes are stronger when grown from whole than when they are reared from cut sets. I choose middling sized whole Potatoes at the time of taking up the crop, and since I have been particular in attending to this I have never experienced anything approaching a failure. The medium-sized Potato is scarcely ripe when taken from the ground, and this is a great recommendation for it as seed. My seed may be said to undergo a perpetual preparation, for the moment it is out of the ground it is disposed in single layers upon shallow wooden trays secure from damp and frost in an underground cellar lighted but dimly. On no consideration are the first shoots allowed to become maimed or bruised; and agreeably to the size of the tuber I allow two or three shoots to grow, but never more; all others that form are rubbed off in their infancy. By planting time the young shoots allowed to remain are robust and purple with health, with young roots starting from around their base, sturdy, so to speak, as the quills of a porcupine. The advantage can be plainly seen over the old enervating, spurting and cutting method. Nothing is here lost to the Potato. Whatever virtue is gone out of it remains stored up in the young shoot, and the seed is placed in the ground in the best possible condition. It is well known that each succeeding series of shoots consequent on disbudding is weaker than its predecessor, and that if done three or four times the leaf-buds are destroyed. Who, then, can wonder at the great loss to the crop? And it should be remembered that the upper end of the Potato brings the heaviest produce. Now this end generally buds first, and the consequence is that instead of two or three original stems we have, in the case of disbudding all the sprouts, a host of shoots of secondary power; and the result is,

instead of a given quantity of good produce fit for the market, there will be an inferior quantity small in size and of a quality which I would not care to give a fattening pig. But under the system of carefully protecting two or three first shoots they are sure to become the monopolisers, and the result generally happens that no weaker sprout will be able to make growth; thus a superior quantity and an even quality of good produce is the consequence.

(To be continued.)

CUSCUTA CHILENSIS.

THE profusion in which the very pretty fragrant flowers are borne over the whole of this leafless plant cannot but excite admiration, nor can its habit of growth and the inevitable consequence of its vigour, when growing on many of its foster plants, occasion any but feelings of wonderment. It has been cultivated under the erroneous name of *C. chinensis*, a species of only annual duration, whereas the one under notice is indis-



Fig. 85.—*Cuscuta chilensis*.

to form some idea of the character of this plant when growing in wild luxuriance on some of the most fitting of its foster plants, and readily realise the regard in which it is held by the Spanish Creoles, who have applied to it the popular name of Cabellos de Angel (Angel's Hair). Whether this exotic parasite, which appears to have been introduced from Chili in the year 1821, is capable of being acclimatised, is uncertain, but should it prove to be so, it would be difficult to imagine a more undesirable plant to introduce amongst some of our field crops. It certainly is sufficiently hardy to withstand 3° or 4° of frost, but flowering as it does rather late in the summer, when growing in this climate out of doors, there does exist for agriculturists the assurance that it would only, in very exceptional seasons, ripen its seeds; were it otherwise they might fairly be appalled.

When observed in a small state, growing on some suitable softwooded plant to which it has been allowed to attach itself for the purpose of preserving it through the winter months under glass, there is nothing particularly striking in its appearance, and, under such a condition there is relatively nothing to suggest the extraordinary spectacle it will present when its growth is fully developed. It is only necessary to have an established piece, even though it be growing on such a plant as would ordinarily occupy a 48-sized flower pot, and so soon as the late spring frosts are over to remove it to a suitable place to demonstrate its amazing characteristics. Supposing it to have been placed close to a dwarf Ivy-clad wall, sheltered and shaded by deciduous and evergreen trees of a large growth, here and there a Lilac, a Flowering Currant, or Box tree, and then large Elders, the latter perchance draped with that always picturesque British climber, Traveller's Joy (*Clematis Vitalba*), in such a place as this the Chilean *Cuscuta* would soon manifest its prodigious growth. Attaching itself to the nearest plant, herbaceous or otherwise, its nude stems presently embrace those of others within reach one after the other, in snake-like coils, sometimes singly, but not unfrequently in twos and threes, and in its progress completely fixing itself by penetrating their epidermis with its root-like tubercles. The more it becomes established the more vigorously it grows, sending out strong thong-like lateral shoots, in some cases several feet in length, and these soon take possession of the branches of the surrounding shrubs and trees, for a distance as much as 15 feet from the spot where it was originally placed. At the same time a portion of the parasite will be luxuriating amongst the Ivy, elevating itself above the branches in the most fantastic fashion, some of the more thread-like stems coiling themselves round the larger ones, and together eventually forming an inextricable densely matted mass of as curious an example of vegetation as it is possible to conceive. It is, perhaps, on Ivy that it best displays itself, so incredibly luxuriant does it become as to almost conceal it, and it is from a spray of this plant that the accompanying figure has been produced. As has been stated, it does not commence flowering until somewhat late in the summer, but then its delicate diaphanous flowers are produced in clusters over the whole of the plant in the greatest abundance. These are clear white faintly spotted with a purplish hue, and emit a fragrance alike suggestive of both Hoya and Heliotrope. This rather uncommon species of *Cuscuta* deservedly claims attention as worthy of cultivation, not only on account of its being so free flowering, but as well of the fact that there are very few flowers that can vie with it for retaining a fresh appearance when cut and placed in water, more especially if a portion of its foster plant be cut with it, in which case it will remain a pretty object for as much as three or four weeks. In combination with other flowers for table decorations it can be made to present quite a unique appearance, and for this purpose its value cannot be over-estimated.—S. P. E. S.

RHUBARB FORCING.

I OBSERVE "W. P. R." at page 537 says, "Market gardeners never use anything but a hotbed of manure for the purpose," but this is incorrect. Much Rhubarb is forced hereabouts by market gardeners, and they all have houses erected for the purpose, shelved at different elevations—three and often more shelves—depending upon the height of the walls. Some use no material to cover the roots, but the soil adhering to them, and some may occasionally throw in a little rubbish. The structures are commonly heated by flues, and the roots supplied regularly with water of the same temperature as that of the house, and the whole kept dark; but I may add that if a slight opening is left at the eaves the Rhubarb is all the better for it, and pushes ahead faster. With the constant steam wooden structures do not last long. I have advised turf walls, having a galvanised roof, well lined with straw underneath. The posts and runners for supporting the shelves too should also be galvanised angled iron. Such erections would in the end be more economical, and any labourer could erect one in a short time. Small houses of this sort would be found very useful for other purposes than forcing Rhubarb.

Rhubarb for forcing purposes should be lifted two or three weeks before it is placed into the forcing house, and if well frozen all the better. Rhubarb lifted and placed immediately in the forcing house neither yields a crop in bulk nor quantity like that exposed to the frosts after being lifted.

Regarding the last sentence in "W. P. R.'s" article, it will require "A Thinker" to elucidate it. He says "Lukewarm is the temperature required in forcing Rhubarb, and to be of service it must be underneath the roots and not above them." Heat no doubt ascends, and no one, I think, would think of placing the heating apparatus or material on a high shelf; but a great heat at the roots of anything while the tops were in a much lower temperature would be detrimental. I observe growing in a shed here some shoots of Gloire de Dijon Rose perfectly fresh, while the roots

putably a perennial, and it may be easily inferred the confusion as to names has arisen simply through an inadvertent clerical error. Many *Cuscutas* have been introduced from various countries, and these are more numerous than may be generally imagined, more than thirty being enumerated in Steudel's "Nomenclator Botanicus," and this does not include the well-known indigenous Dodder, an account of which has previously appeared in this Journal.

It has been stated that Didders grow only upon herbaceous plants and the smaller shrubs, yet Shakespeare employed the term "doddered" to the Oak, from which it has been assumed that the word formerly was not only applied to parasites generally, but figuratively, in describing trunks of trees clad with vegetation. As expressed by its name, the *C. chilensis* is a native of South America, and it so much resembles the Peruvian *Cuscuta*, *C. odorata*, that it is very probable the question as to whether they are not identical has yet to be determined. Those who have had an opportunity of witnessing its wonderful growth and effect when cultivated under favourable conditions in this country may be able

are outside, and the exposed shoots and buds are in its normal winter state. A little distance from me there are Gloire de Dijon and Maréchal Niel Roses planted outside a glass structure, and both of these Roses produce flowers during winter upon the shoots inside. My opinion is that to grow many plants well the temperature surrounding them must be greater than that at the roots. If a tree be planted near a house the moment its shoots reach the slates they grow rapidly and lie flat upon them. The growth of trees in this situation is more rapid than of those only a few yards distant.

FRUIT TREES.—I have some Apple trees that have shown blossom buds for many years, but although summer and root-pruned have never burst into bloom, but remained in a latent state. About eight years ago I resolved on removing one favourite tree to a more secure place. To prepare it for this during midsummer I cut back the current year's growth and cut a trench about 2½ feet from the stem of the tree, and in a few days the flower buds formed years before burst into bloom. Query, Why did it and others refuse to bloom under similar autumn and spring treatment, and what should be done to force similar trees to bloom at the proper time?—W. T., N. B.

THE PAST SEASON'S GARDENING AND SEED LIST.

MAKING out the seed list is a matter of great importance to gardeners. As the time is at hand for ordering next year's supply many will be engaged in filling up their respective lists, and to those who are making out their first order it will in some cases prove very difficult. Therefore I am sure your correspondents, "J. L. B." and Mr. Chisholm's notes, will prove useful. I only intend making brief remarks on a few sorts of vegetables grown here during the past season, the soil being light, of good depth, with a gravelly subsoil. Peas were sown in trenches, which proved a benefit, for during a long period of very hot weather we were enabled to water them with better results than if they had been sown on the level ground. Dicksons' First and Best was our earliest. Carter's Stratagem is undoubtedly a first-class Pea, and deserves to be extensively grown; Champion of England, Telephone, Carter's Surprise, and Fill-basket yielded good crops. French Beans.—Early Prolific, Carter's Longsword, and Canadian Wonder. There was not much to choose between the two latter, both being very prolific. Cabbage.—Little Pixie, Heartwell Early Marrow, and Mammoth Beef-heart. The former is soon ready for cutting, and of the two latter I consider Mammoth Beef-heart to be the best, I believe it will stand very severe weather. Cauliflower.—Eclipse, Veitch's Autumn Giant, and Improved Autumn Giant. Brussels Sprouts.—Carter's Perfection. Onions were sown without manure, and although the bulbs are small they are firm and keeping well, Blood Red and Brown Globe being the best; Giant White Tripoli for autumn sowing. The first sowing of Carrots in the open was a failure, owing to the wire-worm attacking them; Early Scarlet Horn for early use and James' Intermediate for succession were sown. I made a sowing of Early Horn Carrot and Green Top Stone Turnip at the end of July. They grew without any check and are most serviceable at this season. Potatoes.—Ashleaf Kidney for early use; Pride of the Market, Reading Hero, and Clarke's Main Crop Kidney. The last named was not so good and showed disease when lifted. Carter's Sukreta is the best second early I have seen, a very heavy cropper, with handsome tubers, which when cooked are white and mealy.

Celery.—Sandringham White, Incomparable Crimson, and Major Clarke's Red. I may observe here that the Celery seed was not sown until the end of March and not subjected to any artificial heat, but kept in a cool frame; none, so far, have run to seed. The Celery grub was troublesome for a time, but the best way to get rid of this pest is to pluck off all leaves with the grub in and burn them. This autumn a sort of scale has made much havoc among a part of the Celery; it appeared very suddenly and spread so rapidly that it seems almost impossible to eradicate it without destroying the Celery. Have others been troubled with it? A remedy for such a pest would prove a boon to more besides myself if it is at all general.—G. GARNER, *Amberwood Gardens, Hants.*

GRAPES WITHOUT HEAT FOR THE MILLION.

THE Vine is a free-growing, highly ornamental, and useful hardy climber. It is unrivalled for rapidity of growth and for covering a large space quickly; its handsome bright shining green foliage place it at the head of plants of the kind named. For my part, I consider there is no climber at all approaching the Vine in beauty. Others have more attractive blossoms. The Rose, Clematis, Jasmine, Passiflora, Honeysuckle, &c., are charming for flowers or scent, or both; but attractive as they are, and pleasing as they may be, the charm is lacking which gives the most enduring of satisfaction—namely, a rich harvest of fruit. To the cultivator no other subject appeals so forcibly as the Vine. It is so accommodating, tractable, and useful as to out-distance all competitors. Only fancy an eye, a bud very much less than half an ounce in weight, making a shoot almost as thick as a walking stick and ripening to a length of three yards, brown and hard enough, with eyes like nuts, in a few short months, say six, then given a few weeks' rest, and in six months more giving as many pounds of Grapes as feet of cane are left.

Grapes have been grown and ripened outdoors in Britain

from time immemorial. The Romans, no doubt, introduced the Vine, but there is no record of such event. Vineyards are mentioned by the venerable Bede, and he was a dweller in the "north country," so that vineyards, which means vintages and wine, were not confined to the "sunny south;" indeed, outdoor Grapes ripen in the Vale of York quite as well as in that of the Thames or Severn. The point seems to be to avoid wet or cold districts, either from a stubborn moisture-holding soil or an elevated bleak situation. A moderately high situation, so as to be free from stagnant water, lying well to the sun all day long, the south or other slope of a hill that would present the surface at an angle to absorb the sun's rays, withal sheltered from northerly blasts, soil of a nature securing the free percolation through it of rain, and an under stratum that admitted its free passage to the rivulet or streamlet; a land, in fact, of hill and dale, counterpart of the illustrious Syrian, and of limestone formation. The valleys or the flats, not all fens of dark vegetable debris, or of alluvial character, but sand, gravel, and marine animals tempest-tost and of pre-oceanic origin, out of which sprang oolite. Those limestones, oolitic and siliceous, are the basis of the soil for Grapes, and in no other, so far as I have experience, are they to be seen in all their wealth of flesh, juice, richness, and tempting colour and bloom. It is not the slightest use attempting to grow Grapes in clay; they need sand, or in bog they require lime. Our best Grapes are grown in borders prepared on these lines. What is the drainage but the gravel, the lime rubbish but the sand and lime, the bones but the fossils, and the loam but the vegetable debris, an artificial soil made corresponding to that the Vine has provided in Nature? Surface dressing and mulching are only what Nature gives in decayed vegetable matter annually fallen.

SITE.—The Vine if left to itself will run along the ground, forming aerial roots from the canes or rods after they become ripe, and these become true roots—at least, they send up matter for the support of the Vine from the soil. It is like any other climber—viz., runs along the ground until it finds something to clamber by, and then begins to ascend and rear its head, holding fast by the tendrils. It therefore needs support, and there are house walls; the only thing is that they be exposed to the sun. It may climb over rocks in its native wilds and so get shelter, warmth, and light, that I know not; in this country it requires all the warmth and light the sun affords. The aspect should be south. It is well to note that I saw ripe Royal Muscadine Grapes on an east and west aspect in 1886. Some on a west aspect ripened better than some on a south wall. The former neither lacked thinning of the bunches nor berries, but the latter lacked both, and whilst the thinned bunches were useful fruit the unthinned were worthless. Site, therefore, is not everything, cultivation must be taken into account. If the house have a projecting roof it will to some extent throw off rain; not a great evil in this country, as the drier the foliage the more able is it to perform its assimilating functions; besides, when the fruit is ripening it requires to be dry. The projection is also a source of warmth, arresting the passage of heat upward. Such walls are drier and warmer. The site should also be high. Houses are now built so that the floor line is above, not as in old houses below the surface level—i.e., the ground floor line is so high that a terrace and steps have to be made. Such are best. The terrace can be made into a border for the Vines. The width can be such as to admit of its being covered with glass and a cool house formed, in which Grapes can be grown better than against a wall, as the sun heat can be husbanded, and the glass house is an advance on the wall with projecting eaves or a wide coping, as the last is an advance on the wall, the coping of which projects little or is flush with the wall surface. Such a site will be high and dry, and this is better than making an excavation, putting in drainage, and bringing fresh soil.

APPLIANCES.—Now we have the site and the wall we decide to grow outdoor Grapes under glass, but artificial heat is not necessary. If the wall is to be covered with glass the brickwork should be wired, as it admits of the readier training or regulation of the Vine growths and nailing damages a wall considerably. The wires should be fixed about three-quarters of an inch from the wall, not more, and the nearer the better if the tying material can be got between the wire and the wall. The wires may be about 7 inches apart—i.e., in a line with every other course of bricks, employing eyes, terminal holdfasts, straining holdfasts, and No. 13 galvanised wire. Any handy labourer can fix the wires, and the trellises should be 16 inches from the glass. If the wall has no projecting eaves or coping, then it must or rather would be better with one—a coping of glass. Properly fixed it will be safe, but some are so light and the iron not galvanised that they are fragile and the iron rusts, which disturbs the putty and away goes the glass, or if held in by zinc or other

contrivance wet is held and frost breaks the glass. I have seen copings of this character. They are no good whatever. Either the iron should be galvanised or the coping be formed of wood frames, but the iron obstructs least light. These copings must be 18 inches wide and may be 30 inches. They need only have an incline from the wall of one-third the width, which, if 18 inches, will be 6 inches of perpendicular height. Boards will do, and they are warmer than glass, but what they gain at night is lost in favour of the glass by day through the boards obstructing light and heat; therefore glass is best, for though we favour dwellings or walls with projecting eaves or wide copings something may be lost at the upper part of the wall through their shadow; with glass we get the best fruit immediately under the coping. The coping is no use in winter, therefore it should be portable, soon taken off, and as readily fixed. From November to April the coping might as well be sheltering winter salads, Violets, or whatever needs protection.

If the means afford I advise not only the glass coping, but a glass front. Enclose a space, in fact, with glass to hold the heat and prevent radiation from the wall, which takes place less rapidly from such surface when the air is still than when there is a wind. The glass may be so fixed that the coping will form the roof, and the front can be upright or slightly inclining outwards—i.e., widest at the foot, but that is not material, so if it be 18 inches clear of the wall surface it will do—better more or at the foot 2 feet 6 inches, and the lights must be easily removeable, sliding to allow of free access for manipulation and for ventilating. The whole structure standing on oak posts or other bases, and portable, so that it can be cleared away at any time.

But we have only got so far as a base. The house comes next. By a house I mean a glass structure that the cultivator can get into and attend to the requirements of the Vines. It may be an unpretentious structure of 6 feet width, with top glass lights somewhat flat as advised for the coping, and the front lights can slope from the coping outward to the 6 feet of width; the front being of boards to a height of 18 inches, the uppermost one being hung at the top and opening outwards will be a ready means of bottom ventilation, and the top lights can be hung on pivots, so that top ventilation is readily given. The house to be supported by iron standards on brick piers, the roots of the Vines having free access outwards. The height of the wall being 12 feet to 13 feet 6 inches, we get the front lights at a sharp angle, and that is what we require, for we want to get as much sun heat as possible inside in the spring and early summer months, and during late summer and early autumn. The weather is hot enough in the dog days, therefore we need not trouble about the refracted rays at that time. With a sharp pitched roof we have the sun vertical, perhaps in April or early May, and this helps the Vines forward, and it is vertical again in late August and September when we have the Grapes ripening. Flat-roofed houses are no good for Grapes without heat, therefore either have sides sharply inclining or have them perpendicular with as little flat roof as possible. Flat roofs are very well when what is wanted of sun heat can be supplied by hot-water pipes; therefore, if the house must be detached, just have the span double the width of a 6 feet wide lean-to. The ends of the span should be north and south. Both the lean-to and span must be so constructed that all the glass can be removed, the whole structure being portable. Preference should be given to the lean-to. The house may be any width, but keep the same slope for the side lights and increasing the length of the top lights proportionately with the width. The same of span-roofs. Span-roofed frames can be utilised for growing Grapes, but they should have 11-inch wood sides, be 4 feet wide, and have a somewhat flat roof, or be 1 foot 9 inches high at the ridge. They must be placed on a layer of bricks.—G. ABBEY.

(To be continued.)

THE TASTEFUL ARRANGEMENT OF PLANTS.

It is not many years since the highest art in grouping plants consisted in simply sloping them from back to front and mixing them in the process, in some cases dotting a few taller plants throughout the group in order to yield a more graceful appearance. A not uncommon method in the case of conservatories and other structures was not only to slope the plants from front to back, but also to find out with mathematical exactness the middle of the group, making it fuller there, and receding slightly towards each end. The system of dotting plants in a groundwork of Maidenhair Ferns initiated by Mr. Wills came upon the whole horticultural world as a revolution, and good, bad, and indifferent imitations followed. I have seen extremely poor groups rewarded with honours at flower shows, not on account of the groups being in any way noteworthy, but simply on account of their following the fashion. Judging from the best examples I have seen, the idea was to show off to the best effect

certain plants of great beauty, either as foliage or flowering plants, and this was attained by a judicious arrangement, heightened by the introduction of the best available groundwork. There are many plants in general cultivation which either do not require a groundwork or which are better without it. *Chrysanthemums* we may take as an example when massed by themselves; *Zonal Pelargoniums* also are best grouped alone. We used to have a large quantity of these all through the winter and spring months, and any addition to the glowing mass of colour they presented would have detracted from the effect. Neither should I care to break up a group of well grown *Cinerarias* or of decorative *Pelargoniums* by the addition of any other plants. Of course there are people who consider bare masses of colour "vulgar," but so long as Dame Nature covers our moors with unbroken stretches of purple Heather, our meadows with sheets of crimson-tipped Gowans, and the shady banks of our streamlets with masses of yellow Primroses, we may well allow the charge of vulgarity to pass unheeded.

But if there are flowers which are most effective massed by themselves there are also others which show to much better effect isolated. Of such we may mention many Orchids—not all—as being greatly heightened in general effectiveness by judicious grouping. A few pretty foliage plants, such as *Asparagus*, *Curculigo*, *Cocos Weddelliana*, the variegated *Ficus elastica*, *Dracenas*, and *Pandanuses* can be used in this way advantageously, while the edges may be prettily edged with *Panicum*, *Ficus repens*, *Isolepis gracilis*, or *Maidenhair Fern*. I like to dot *Tuberous Begonias* among *Maidenhair Ferns*. *Narcissus*, *Tulips*, and *Dutch bulbs* generally look much prettier amongst *Maidenhair Ferns*. Some flowering plants are very pretty when employed as a ground to others. Thus *Primulas* with large healthy foliage may have graceful plants arranged amongst them, as, for instance, *Carnations*; *Cyclamers* also may have other plants dotted amongst them. *Yellow Crocuses* or blue *Scillas* are other examples of what may be effective as groundwork plants.

Then there is the old-fashioned system of grouping, which, with modifications, is of great value for utilising in the best manner small collections of different plants. Just now we have not a sufficient number of *Chrysanthemums* in bloom to make a massive group by themselves, but by mixing with other plants, these beautiful winter flowers are made to be still the predominating feature in the conservatory. Entering by the door, the centre bed appears full of these, although good plants are only arranged here and there, but then every one is seen. Along one side dark brown and soft yellow sorts are alternated along the back, the heads of bloom leaning over to the front. Along the front a few *Pompons* are intermixed with free-grown *Eupatoriums*, which are not staked, and showing among these are spikes of *Schizostylis*. Where the pots would be seen *Maidenhair Ferns* are placed. On the other side the front row is *Maidenhair Fern*, with *Mignonette* and *Lily of the Valley*. Behind these are good plants of *Cypripedium insigne*, with a few *Chrysanthemums* and *Arum Lilies* in flower. Close to the door the earliest *Tulips* are so placed as to be seen on entering. The whole arrangement rises from the door to the other end, and considering only a limited variety of plants succeed in the house during winter, the effect is very good. One advantage of mixed arrangements is that any particularly good plant may either be made to form the key to the whole, or it can be placed in a prominent position without offending good taste.

In arranging plants in rooms, as a matter of necessity much depends on the rooms and on the taste of the occupants. In one room we have to do with plants are kept in one of the darkest portions. Our endeavour is to keep this as bright as possible. At present *Pelargoniums* of crimson shades are massed in it. These are worthless if left over a week, the foliage becoming yellow. As edging *Maidenhair Fern* is preferred and stands best, though *Isolepis* is also sometimes used. *Richardias* do remarkably well in such a position, and in conjunction with brightly coloured *Tulips*, *Hyacinths*, and *Lily of the Valley* they will come into use directly. White is suitable for all positions, and the best white-flowered plants for rooms are *Richardias*, *Lily of the Valley*, *Lilium Harrisii*, *L. longiflorum*, and *L. lancifolium*. *Roman Hyacinths*, *Potterbaker* and *La Candeur Tulips*, *Paper White Narcissus* and *Narcissus ornatus*, *Azalea narcissiflora*, *Nicotiana affinis*, *Hyacinthus candicans*, and *Spiraea japonica*. In light positions any of these can be used. Of foliage plants for standing permanently in rooms good hardy forms are *Cissus antarctica* and *Aspidistra lurida variegata*. Much better are *Ficus elastica* and its variegated form, *Kentia Belmoreana*, *Scaevola elegans*, *Dracena gracilis*, and *Grevillea robusta*. All of these stand house treatment well, provided attention is paid to watering regularly and the dust occasionally sponged off. These are more suitable for rooms where there is plenty of light. On dark staircases it is better to use only plants, which will lighten them somewhat. In corners nothing is better than *Richardias*, while on pedestals, on banisters, and on landings the following are good, but should be changed every week. *Curculigo recurvata variegata*, *Bambusa Fortunei variegata*, *Pandanus Veitchii*, and *Cyperus alternifolius variegatus*.

As a general rule, but few plants should be employed for rooms, and these good. The white-flowered plants which are most suitable, though the list is not given as at all exhaustive, have already been noted; and with regard to coloured flowers, it is worth while to note that where these are mixed it is much better to harmonise colours than to have anything glaring or bizarre, and in all cases the first thought must be given as to whether certain colours will add to the general effect of the room. We have referred to crimson *Pelargonium* as being used in a particular room and in a certain position. Other flowering plants are also dotted in other positions, but these are all white-flowered. The vases are filled with shades of yellow, brown, or lilac and white, but no crimson. Examples of good colouring are deep and soft yellows, which may be worked out with

yellow Van Thol Tulips and Gloriosum Narcissus dotted amongst the Tulips. Marie or Mimosa Hyacinths and Orondates or Blondin Hyacinths dotted among Panicum is very pretty. Ida and Mont Blanc Hyacinths

as that assumed by Maidenhair Ferns grown in cold frames, snits yellow and white better than a very dark green. However, by far the best plan is to experiment with what gives the best effect. These are only hints,



Fig. 86.—A GROUP OF PLANTS.

form another combination soft and pleasing. Great care should be exercised when mixed colours are used in seeing that purples and certain lilac shades do not come near each other, or certain shades of pink and red or yellow. Lilac shading to white is very good, and a little yellow added gives quite a new tone. The addition of green has also to be watched, as for example, the effect of yellow is heightened by the employment of a dark lively green, such as Isoplepis. A yellowish green, such

the result of a close experience of years, which has taught, among other things, the good effect that may often be secured by adding or taking away something apparently very slight from even good arrangement. Simplicity is the great thing, a good variety of plants and plenty of these, a hundred of one sort being much better than a hundred distinct kinds. —B.

[The group of plants represented was sketched at a mansion in the

north of London, and commends itself for the pleasing manner in which the plants were associated.]

FIGS ON WALLS.

It is not my intention in this paper to go into the history of the Fig, but simply to make a few remarks upon its culture on walls. My observations are based upon nearly sixteen years' experience of trained trees in these gardens, covering a wall $10\frac{1}{2}$ feet high, and about 350 feet long, from base to summit, with healthy and fruitful branches. Two of the Fig trees here are of great age and size, having stems nearly 3 feet round, and branches extending from 35 to 40 feet therefrom on each side. Yet, owing to the method of training practised, the wood forming the individual trees is, with the exception of a few thick branches proceeding from the base, such as may be found in a six-year-old tree.

The varieties best adapted for culture against walls in the open air are the following:—Brown Turkey, a free bearer of large turbinate fruits, with a grooved surface; skin brown, with a slight purplish tinge next the sun; flesh tinged with red at the centre, rich and sugary. White Mar-sailles is another free-bearing variety, producing fairly large, roundish obovate, and slightly ribbed fruit, having a pale green skin, which becomes yellowish white when the fruit is ripe; flesh opaline, juicy, sweet, and rich. Castle Kennedy is a rather shy bearing variety, a fact which may account for the great size to which its obovate and handsome fruit attains to on vigorous trees; skin greenish yellow, pale brown towards the eye; flesh whitish, with stains of red near the eye. Brunswick is another somewhat shy bearing variety; the fruit is pyriform, very large, and handsome in appearance; skin pale brown next the sun, and yellowish-green where shaded; flesh opaline outside, reddish-brown at the centre, and fairly rich and sugary.

Seeing that the wood of Figs is naturally pithy and soft, moderately good loam, and one part of old mortar rubble and wood ashes well mixed, should only be used as soil. When Fig trees are planted in a narrow, shallow, but well-drained border composed of the compost indicated, they make a short-jointed and firm growth, with an embryo fruit in the axil of every leaf. But trees thus grown should have copious supplies of water at the roots during the summer months in the absence of heavy rains, and if frequent waterings of liquid manure be given, finer fruit will thereby be secured. In planting, the trees should not be buried any deeper in the soil than they were before.

A few inches should be allowed for the soil settling down within a few weeks from planting time. A wall having a south or south-west aspect is the most suitable for Fig trees to occupy, say at 30 feet from each other. The intervening space can in the meantime be occupied with young trees, Figs or otherwise, which, however, should be removed as soon as the permanent trees require more space on the walls.

Young trees should have their branches fan-trained at regular intervals on the wall, and at the same angle on either side the centre of the trees, so as to allow of two or more young shoots proceeding therefrom during the summer being trained in the same manner over the intervening space, and in order to secure a balance of growth in the individual trees strongly growing shoots should have their points pinched out. The temporary check thus given to the flow of sap will tend to the formation of embryo fruit on the shoots so stopped. In the case of established trees a space of 6 inches should be allowed between the branches of the previous year's growth, and between these one of the current year's growth should be laid in during the summer, and be stopped when they attain to a length of 20 inches for the purpose indicated, pinching all other shoots out as soon as they appear so as to prevent overcrowding of the shoots, and with this object in view the trees should be examined several times during the summer. The practice of taking down, bundling together, and covering the branches of Fig trees with mats and fern during the winter and early spring months is not only unnecessary, in the southern, western, and eastern counties at any rate, but positively injurious to the trees, inasmuch as it is calculated to thwart the very object in view, that of securing a good crop of fruit.

As soon as the trees begin to push forth leaves, which they usually do here the beginning of May, they should be pruned somewhat after the fashion of the Peach or Morello Cherry—that is, as many of the old branches as can be dispensed with should be cut out to make room for a like number of young ones of the previous year's growth, retaining, however, the necessary number of branches to form the tree which are best studded with young fruit, which will be obvious at that time, and on this account, together with the fact that the trees do not then bleed so much by reason of the absorption of the sap by the leaves as they otherwise would do, it is advisable to defer the process of pruning till May.—H. W. WARD.

GARDENERS' GAIT.

MY feelings on reading Mr. W. R. Raillem's remarks were like the Yankee Editor's, who received a poem for publication. He parsed it, examined it with a microscope, and sent it to a chemist to be analysed, but could not understand what the poet was driving at.

Are your correspondent's remarks meant as a joke, or are they intended as a sneer at a body of industrious persevering men? With regard to habitually running at work, few men are strong enough to do so, and a fair day's work can be done without it. But it is not so unusual as Mr. R. asserts to see a gardener run. Where forcing is carried

on during the spring months the gardeners often have to "pop" and put shading on and take it off.

Jim, too, is an extreme case and not a representative under gardener, as anyone may prove by visiting a London nursery when the men are going to or from meals. Your correspondent closes with good advice, which would have been received better without the illustrations. When I was under gardener the reading of such an article in the bothy would only have called forth uncomplimentary remarks.—A. L. G.



THE Prince of Wales has been enrolled as an honorary member of the LINNEAN SOCIETY. A deputation comprising the President, William Carruthers, F.R.S., Frank Crisp, LL.B., Sir J. Lubbock, Bart., B. Daydon Jackson, and Dr. James Murie, attended at Marlborough House for the purpose of obtaining His Royal Highness's signature in the Society's books.

— WE regret to announce the death on the 24th inst., in his eighty-first year, of MR. C. W. NEUMANN of Wyncote, Allerton, near Liverpool, whose gardener (Wm. Mease) has been so successful in the cultivation of Chrysanthemums and other plants.

— THE exceptionally heavy SNOWSTORM which commenced last Sunday evening, and continued until Monday morning, has caused a great amount of damage to trees and shrubs in many districts. The snow was soft and damp, accumulating in heavy masses on trees of all kinds, but especially on evergreens, which in numerous cases were crushed to the ground. Shrubs of a brittle character, such as Lilacs, were snapped off in a remarkable manner, stems 3 or 4 inches thick being broken short about 4 feet from the ground. Where Conifers have not been quite broken down, handsome specimens have in innumerable instances lost large branches, effectually destroying their beauty. Letters from several counties, both north and south, record equal devastation and when the full results of the storm are known it will probably be found to have been one of the most disastrous experienced for many years. In the neighbourhood of London the average depth of snow was about 9 inches, but it was considerably deeper in exposed places owing to the drifting.

— MR. S. WINDSOR, Glangwna Gardens, Carnarvon, sends us a fine flower of the peculiar STRELITZIA REGINÆ, which is remarkable alike for its strange form and the curious combination of bright orange and blue tints. Accompanying it were samples of Zygopetalum Mackayi, a strong raceme having seven large flowers of good colour; Calanthe Veitchi a vigorous raceme of richly tinted flowers, the fragrant and delicately tinted Luculia gratissima, and good flowers of Lapageria rosea. With them were Fern fronds and sprays of Asparagus, all indicating by their clean healthy condition the considerate treatment they receive.

— AN old and once well known florist, MR. THOMAS BROWN, formerly of the Royal Nurseries, Slough, died at Honolulu, Sandwich Islands, October 22nd last, at the age of eighty-two. Mr. T. Brown retired from the Slough nursery in 1840, and in 1846 emigrated to Honolulu, where he has since resided, with the exception of a few years passed in America. He held for a considerable time an official position as Registrar, and his eldest son is a member of the Legislative Assembly.

— IT is evident that at Rodriguez, a small dependency of Mauritius, the INDIGENOUS PLANTS ARE THREATENED WITH EXTINCTION from an enemy of a peculiar character. In the Annual Report of the Acting Civil Commissioner on Crown Lands and Forests for 1885 it is stated:—"In my report for the year 1884 I pointed out the existence of a kind of white lice, commonly called here 'cochenille,' which had in a very short time multiplied enormously, and threatened to destroy the forests of Rodriguez. During the year 1885 matters looked more alarming still. It was reported to me that these insects had begun to attack the Maize, Manioc, and Bean plantations. I, myself, while visiting the mountain, ascertained the correctness of the report. However, the Bean harvest had not been bad, and the inhabitants had not to suffer from any scarcity

of food. As regards the Citron, Lemon, and Orange trees, for which this island has long been famous, hundreds of them have been killed by these insects. The Mango and Cocoa-nut trees felt their baneful influence, and yielded sour and unsavoury fruits. One of the best forest trees which grow here, the 'Bois puant' (*Fœtidia mauritiana*), seems unable to resist their attack, and I am afraid that there will not be one of these trees left within a twelvemonth, unless, by some happy circumstance, these insects were to disappear altogether." We learn from Kew that the interesting indigenous tree, whose complete extinction within twelve months is here anticipated, is very rare in Mauritius, and unless steps are taken to preserve it at Rodriguez it will probably disappear altogether as a forest tree from the flora of these islands.—(*Nature*.)

— THE LATE MR. ZADOK STEVENS. — Mr. Edward Gilman, Ingestre Gardens, Stafford, writes — "I should like, with your permission, to add my tribute of respect to the memory of Mr. Z. Stevens, but it would need an abler pen than mine to do him justice as a thorough horticulturist, master, and friend. As the former he was known to a great many professional brethren throughout the United Kingdom and Ireland, and I believe I should state the truth were I to say throughout the world. As a master I always found him strict, kind, and considerate; one who served his noble employers long, faithfully, and well, and who also required the same to be rendered to him by his subordinates. As a friend I had the honour and privilege of counting and knowing him since I served under him twelve years ago. Socially he was genial, frank, kindly, and entertaining, one in whose company an hour was spent profitably and pleasantly. Most of the leading gardeners will have heard of his decease with feelings of deep regret. As an all-round gardener he had few compeers, for whatsoever his hand found to do that he did diligently, earnestly, and thoroughly, and those who knew him and his work best will admit that in his death we have to mourn the loss of one of our horticulturists of light and leading. He leaves a widow and three children."

— MESSRS. DICKSON, BROWN, & TAIT, Manchester, write as follows respecting CAULIFLOWERS—"Your correspondent 'A Kitchen Gardener,' is evidently in a fog as regards our Eclipse Cauliflower. We introduced this variety before Sutton's King was known, so that the latter may be like the former. Any gardener who has grown our Eclipse would not for a moment say it was identical with Autumn Giant; there is a wide difference in foliage, Eclipse being much more self-protecting, and the curd much whiter. It is a matter of opinion whether Autumn Giant is superior to Eclipse; we can give your correspondent abundant evidence from hundreds of leading gardeners throughout the country, including Mr. Penny of Sandringham, and Mr. Paterson of Balmoral, who hold a contrary opinion."

— MR. W. BARDNEY writes:—"Those who have not grown VEITCH'S CHELSEA BLUE PRIMULA should do so for another year. It is a great acquisition to this popular class of decorative plants. It is decidedly the best blue I have yet seen. The flowers are what may be termed deep lavender in colour; they are of the very finest form, and of good substance. Every plant I raised from a packet of seed last spring was true—not the slightest variation in the colour of the flowers. I feel convinced that whoever gives it a trial will not be disappointed with it, for it is perfectly distinct, and highly attractive when associated with either red or white varieties, or both, as the case may be."

— WE are requested to state that on January 28th, 1887, at 8 P.M., Mr. Richard Dean will deliver an address before the members of the CHISWICK R.H.S. MUTUAL IMPROVEMENT ASSOCIATION. Subject, "Round About the World of Horticulture."

— NATIONAL ROSE SOCIETY.—At the annual dinner of this Society the Chairman (the Hon. and Rev. J. T. Boscawen) proposed that some recognition of the Jubilee should be made by the members of a society whose object it is to promote the extended culture of the flower which is our national emblem. It was readily taken up, a committee was named, and at its first meeting held at the Horticultural Club it was determined that the first £100 should be devoted to the purchase of two challenge trophies to be competed for at the provincial shows of the Society, one for thirty-six blooms open to all nurserymen, and one for twenty-four blooms open to all amateurs. Subscriptions were announced in the room in sums varying from one guinea to five, amounting to upwards of £40, and circulars will be shortly issued to the members generally inviting their co-operation.

— THE Council of the ESSEX FIELD CLUB has decided to issue the "Transactions" and "Proceedings" of the Club combined in the form of a monthly periodical under the title of the "Essex Naturalist." The journal will consist of sixteen pages per month, but in all probability frequent "double numbers" will be issued, in order to keep pace with the rapid accumulation of papers which have been read before the Club. It will be sent, post free, to all members who are not in arrear with their subscriptions, and will be on sale to non-members at a price not exceeding 6d. per sheet of sixteen pages. The "Essex Naturalist" will contain papers read before the Club, or which may otherwise be placed in the Editor's hands, reports of meetings of the Club, and, as space allows, a special feature will be short notes, treating of the natural history, geology, and pre-historic archaeology of Essex, so that the journal may serve as a medium for inter-communication between the members on subjects included in the programme of the Society. The Editor, Mr. William Cole, Hon. Sec. Essex Field Club, 7, Knighton Villas, Buckhurst Hill, Essex, will be glad to receive communications from anyone interested in Essex, whether a member of the Club or not, relating to the above-named subjects; also books and papers for notice in the journal, and cuttings and extracts from periodicals and newspapers, furnishing information respecting the occurrence of new or uncommon plants or animals, the exposure of new geological sections by railway or other works, new well-sinkings, discoveries of archaeological interest, &c.

— THE number of the "BOTANICAL MAGAZINE" for December, 1886, completes the 112th volume of the entire work, or the 100th year of publication, a total of 6912 plates having been published. Sir Joseph Hooker in dedicating the volume to Sir Trevor Lawrence, Bart., makes the following observations—"Allow me, on this the hundredth anniversary of the 'Botanical Magazine,' to dedicate to you, as President of the Royal Horticultural Society, the volume that is the evidence of this work having attained a longevity far exceeding that of any other illustrated botanical or horticultural serial; and whilst thus commemorating your services to horticulture, I would associate with your name that of the lady from whom you directly inherit your love of plants and passion for gardening—the late Mrs. Lawrence of Ealing Park, whose locality and whose rich and beautiful conservatories were set forth by my predecessor in the dedication to her of the 68th volume (published in 1842) of this work, and whose kindness to myself when a very young botanist I shall ever hold in grateful remembrance." The plants represented are *Alpina mutica*, *Aristoiocchia elegans*, *Geranium tuberosum* var. *Charlesii*, *Carpenteria californica*, and *Aster Stracheyi*.

— THE illustration of *CARPENTERIA CALIFORNICA* in the December number of the "Botanical Magazine" is an excellent one, portraying the character of this handsome shrub very faithfully. The genus *Carpenteria* is closely related to *Philadelphus*, and *C. californica* has large white flowers $2\frac{1}{2}$ inches in diameter, with a cluster of stamens in the centre, resembling some of the "Mock Oranges." The leaves are elliptical lanceolate, 2 to 4 inches long, and the flowers are borne on axillary branches, the shrub attaining the height of 6 or 7 feet. At Munstead Grange, Godalming, the plant has been successfully grown out of doors at an elevation of 400 feet above the sea level, where it passed through last winter unprotected and uninjured.

— THE usual monthly meeting of the ROYAL METEOROLOGICAL SOCIETY was held on Wednesday evening, the 15th inst., at the Institution of Civil Engineers, Mr. W. Ellis, F.R.A.S., President, in the chair. Mr. G. R. Farncombe, B.A., Mr. C. E. B. Hewitt, B.A., and Captain S. Trott were balloted for and duly elected Fellows of the Society. The following papers were read:—1, "On the Proceedings of the International Congress of Hydrology and Climatology at Biarritz," by Mr. G. J. Symons, F.R.S. This congress was held in October, and was divided into three sections—viz., Scientific Hydrology; Medical Hydrology; and Climatology, scientific and medical. The total number of papers read was 109. An exhibition was also held in connection with the congress. The excursions were of primary importance to the medical men, and extended over a period of three weeks. The places visited were Bayonne, Cambo, Dax, Aroachon, Pau, Eaux-Bonnes, Eaux Chaudes, Canterets, Lourdes, Bagnères de Bigorre, Luchon, Ussat, Aix, Montpellier, Cette, Toulon, Amélie les Bains, La Preste, Banyulo-sur-Mer, and Thuer. 2, "Report on the Phenological Observations for 1886," by the Rev. T. A. Preston, M.A., F.R.Met.Soc. The weather was on the whole very ungenial, and everything much retarded; it was also very fatal to insect life, so that the complaints on this head have been far less than usual.

Bush fruits were very abundant; Strawberries and Peas were spoilt by drought in many places; stone fruits, except Plums were not abundant; Plums were extraordinarily plentiful, so much so that they realised nothing in the markets, the cost of picking and carrying often being more than they realised. Apples were very poor from the destruction of the bloom by heavy rain. Hay was good and plentiful and well harvested; corn and other grain were not up to average; root crops were, as a rule, remarkably good. 3, "A Criticism of Certain Points of Prof. Langley's Researches on Solar Heat," by Prof. S. A. Hill, B.Sc., F.R.Met.Soc. These experiments were carried out at Mount Whitney, in Southern California, during 1881. 4, "Account of the Hurricane of March 3rd and 4th, 1886, over the Fiji Islands," by Mr. R. L. Holmes, F.R.Met.Soc. This storm was the most destructive that has ever been known to occur in the Fiji group. The lowest barometer reading was 27.54 inches at Vana, in Taviuni. The storm was accompanied by a great wave from 18 to 30 feet in height, which swept over the land and caused an immense amount of damage. It was reported that fifty vessels were wrecked and sixty-four lives lost during this hurricane. 5, "Results of Meteorological Observations made at the Military Cemetery, Scutari, Constantinople, 1866-85," by Mr. W. H. Lyne. The annual mean temperature is 58.4°; the highest temperature registered was 103.6°, on June 22nd, and the lowest 13.0°, on January 25th, both in 1869. The annual rainfall is 29.29 inches; the greatest fall in one day was 4.06 inches, on September 25th, 1866.

GROUPING CHRYSANTHEMUMS IN COLOURS.

ANYTHING which tends to the advancement and improvement of Chrysanthemum exhibitions deserves not only the attention of growers, but of the committees of societies generally, and I think "B." was doing a good work in bringing forward the above subject for discussion. Doubtless many who annually visit these autumn exhibitions are often struck with the want of taste in the arrangements of plants. How often do we find groups arranged close together instead of being evenly displayed at much farther distances apart or round the sides of the building; or, again, very rarely do we find those groups arranged in the best possible manner—i.e., instead of being arranged in the square lean-to style, so to speak, how much better it would be if they were arranged in a half circle, and when finished off with dwarf neat plants how different would be the effect to the stiff square arrangements so often seen.

I quite concur in the remarks of "B." as to the massing of colours, for nothing can excel the effect of Chrysanthemums when so arranged, as I have long experienced; but I really cannot agree with "B.'s" views in re-arranging the plants at exhibitions after the judging is over. That I should strongly protest against for obvious reasons, and I doubt if that would find general favour with exhibitors, but at the same time I think the suggestion of massing colours worthy of consideration, especially where societies are prosperous enough to offer substantial prizes for larger sized groups, or for a good central group, also a few smaller groups of distinct colours dotted here and there about the building.

Trained specimen plants, again, would look much better grouped together than in double rows as they are generally seen. They could be grouped separately and the spaces filled with cut blooms—Primulas, or anything in this way, thus doing away with the formality generally found, and add a much more charming effect to the whole building.—W. A. WALTER, *Lillingstone House, near Buckingham.*

CALANTHES.

IN answer to a Sheffield correspondent, about two years ago I had under my charge a few plants of *Calanthe vestita* and others. My employer told me he had bought them two years previous to the time I speak of. They remained healthy plants for the first year, then they began to grow sickly gradually, becoming worse, however. When I went to the place they looked had. I turned them out of the pots, and I found the compost consisted chiefly of sand, this being one of the worst things employed in Orchid culture. About the end of February I thought it advisable to repot them, which I did, shaking as much of the old soil from amongst the roots as possible without injury. I gave them a large shift, using one-half loam, peat, and charcoal. About the end of August I gave them a top-dressing of old cow dung. From the end of October to the end of January they flowered well. The pseudo-bulbs were plump and healthy. I did not repot them the second year, but I gave them a top-dressing about the same time as I have before mentioned, giving them a good supply of moisture both at the roots and in the atmosphere. One great essential to the well-being of this plant is plenty of moisture physically and atmospherically applied. I do not know any cause of the blight spoken of by a Sheffield correspondent, but I think if he gives his plants plenty of drainage, and plenty of water, and uses the above-named compost his plants will prove satisfactory.—C. COLVILLE, *Linethwaite.*

A SHEFFIELD correspondent writes respecting his *Calanthes* not flowering, and I may say the same of *Calanthe vestita* under my charge. They were grown in two different ways, some being in a compost of sphagnum moss, fibre loam, peat, dry cow manure, and plenty of sand,

placing twelve of the best pseudo-bulbs in an ordinary wooden basket. These at the present time have twelve spikes 14 inches in length, having twelve flowers to thirteen on each. Out of the pseudo-bulbs that remained I again picked the best, putting six into 8-inch pots, the rest were placed into 1-inch pots to grow on. The second pseudo-bulbs in pots grew rapidly to the size of an egg, looking the picture of health up to the beginning of September, when they showed their flower spikes, the same as those in the basket; yet, though receiving the same treatment, they refused to develop and have been a complete failure. I attribute the failure to want of a free circulation of air amongst the roots, they being, of course, confined to the inside of the pots. I should like to have other opinions on the failure of this beautiful winter-blooming Orchid.—F. DEBNAM, *Foreman, Betteshanger, Sandwich.*

I HAVE never had to contend with disease in any shape among *Calanthes*, but a case of partial failure is known to me this season from something of the sort. The pseudo-bulbs and foliage were covered with black spots, the majority not attaining a size capable of throwing up a flower spike. I did not think to ask those in charge how early in the season the plants became affected, or whether this was the first season they had been troubled with it. Possibly this is similar to what is playing havoc among the *Calanthes* round Sheffield, but our midland friends do not state what the disease is like. In the case I have mentioned the pseudo-bulbs appeared sound, although stunted and spotted.

With one exception I agree with "W. K. W." as to cultural details. Our plants have done very well this season under similar conditions. Except the syringing no water was allowed to touch the foliage, and my experience leads me to believe that these plants are better without it. Our plants were copiously supplied with water at the root during the growing season, and weak liquid manure was also occasionally given, and the result is spikes of bloom of *C. Veitchii* over 3 feet in length, and pseudo-bulbs from 8 inches to a foot long.—JAMES S. BROWN.

LIGHTENING HEAVY SOIL A MISTAKE.

AS soon as anyone takes possession of a new garden, especially a vegetable garden, their chief desire is to find out the texture of the soil; and should any quarter be rather retentive or contain a little clay, they at once conclude it is unsuitable for the production of good crops, and no time is lost in adding materials to lighten the soil. Sand, ashes, and such like are generally employed, and these are frequently not only added to the surface, but large quantities are trenched into the subsoil. Where the whole of a garden is composed of very stiff soil it is very necessary to lighten some parts of it, as roots such as Carrots, Parsnips, Salsafy, &c., which penetrate deeply, do not, as a rule, grow to perfection in a very heavy soil; but speaking from experience, I have fully made up my mind that it is a great mistake to lighten the whole of the soil in any kitchen garden, as many crops become much finer in a heavy soil than a very light one, and in many cases it would be a great advantage to add a good dressing of clay or heavy soil to that which is very light. I have done a good deal in lightening soils, but I would think more than once of doing the same again, and here I have ceased all attempts to lighten some of the heavy quarters. In fact, some of those which have become light and open on the surface will have some of the heavy subsoil trenched to the surface this winter, and I will take care that nothing is done to reduce it to a state of powder again. I find Cauliflowers and Broccoli produce much larger and more compact heads on a very heavy soil than on either a light or moderately light one; indeed, no one will grow really first-rate Cauliflowers on a light soil. Cabbages, too, and all plants of this class prefer a heavy soil, and the finest of all Celery grows on a stiff soil. I do not say that a stiff soil is the best to earth it up with, but if the roots can be confined to a heavy soil and light material used for earthing, produce of the very highest quality will be secured. Many plants growing in a heavy soil suffer less from frost and wind than those in light material, and I conclude that it is owing to those in the heavy soil growing more robust and compact than in light soil. These remarks apply very forcibly to Winter Broccoli, where a system of rotation of crops is observed. There may be some little difficulty in confining crops which agree best with heavy soil to material of this sort, and subjects which delight in light soil to their proper quarters; but an attempt should always be made to reserve one or two of the quarters for the crops which I have indicated as preferring a heavy soil. I may remark that Onions when small and young do best in a light soil; but in the end the largest and soundest hulbs are always gathered from stiff soil.—J. MUIR, *Margam.*

CHRYSANTHEMUMS AT CLEMENT PARK, LOCHEE.

I, ALONG with two friends, had the privilege recently of seeing the grand collection of Chrysanthemums grown at Clement Park, Lochee, the residence of Mrs. Cox, whose late husband, ex-Provost Cox, was an ardent lover and grower of flowers. Mr. Moir, the intelligent gardener, introduced us to his houseful of beauties, and the first impression is admiration of the sea of bloom which meets the eye. The house, 70 feet long and 30 broad, contains 400 plants, representing the best of the newest as well as the oldest varieties. The aim of Chrysanthemum growers is to have their plants as dwarf as possible, and Mr. Moir has succeeded in getting his of a fair height, with compactness of growth and a profusion of bloom. Surveying the group of plants from one end of the house, the eye rests on thousands of globes of golden yellow, white, orange, pink, primrose

maroon, and other shades of colour rising above the peculiar green of the foliage, the whole making a sight not soon to be forgotten. Many of the incurved and reflexed varieties are models of symmetry, but what ragged "towsey tykes" are these here and there among the lovely throng? These are the Japanese kinds, which are now much in favour, and called "noble and striking" in appearance. They are striking inasmuch as they have no shape, have long loose petals, and are large sized. I may be accused of having no taste, but I do not admire these Japanese flowers. Perhaps, as an old florist, I may be in favour of fixed points in blooms. Mr. Moir, however, told me that they arrange better in a flat dish than the other kinds, and this is a point of considerable importance to the lady florist when decorating her tables. I took a note of the following varieties as fine in their classes:—Elaine—pure white, with broad petals, and very full, said to be one of the finest in the Japanese class; Guernsey Nugget—incurved, a large fine flower of a primrose colour; Lady Selborne—pure white, a sport from James Salter, another good flower, reckoned one of the best of the Japanese class; Bouquet Fait—a quilled Japanese flower, delicate rose, with a white centre, looks pretty; Peter the Great—pale yellow, and stands high among competition flowers; Dr. Macary—of a fine rose colour, is a grand flower in its class; Plutus—golden yellow, is a good specimen of the incurved class; Fair Maid of Guernsey, another Japanese, pure white, is always ranked among the finest in competition; Sœur Melanie belongs to the Pompon class, and is pure white in colour; Barbara—a very fine incurved flower, bronze, tipped with golden yellow. Princess Teck is a very telling incurved flower, pure white, with perfect shape. Mr. Bunn—a beautiful yellow incurved flower, in shape like one of the fine old double Dahlias. Empress of India is one of the very finest incurved varieties, pure white, and very large. Chevalier Damage is a beautiful yellow reflexed flower, one of the oldest varieties, but can hold his place well among the newest. Cassandra—a fine old incurved variety, white, shaded with rose towards the edge, is a very desirable flower. White Venus—one of the oldest incurved varieties, pure white, with flowers like balls of snow. Criterion—a large Japanese variety, of amber colour, can be grown 12 inches across. Cullingfordi is a reflexed flower, of a beautiful crimson-scarlet colour. There are more of the Japanese than of the other kinds in the list, but that arises from Mr. Moir's favour for them, and drawing my attention more to his curious pets than their finer sisters.—J. M. (in the *Dundee Courier*).

GARDENERS' IMPROVEMENT SOCIETIES.

FEW professions can boast of having their interests so widely and thoroughly represented by numerous societies as that of British gardeners, and none stand so much in need of them as the latter class of men do. As a body they are very much dependent upon each other, and therefore mutual intercourse and help becomes, to a great extent, an absolute necessity. It may, then, be readily supposed that their natural inclinations and tastes should gravitate, as it were, into corporate bodies, and by this union derive benefits of the highest value both socially and professionally. That societies, properly founded and conducted, are beneficial there can be no question; but when such organisations are employed for a purpose altogether alien to their original object then their real value and need of existence ceases. The societies now under consideration are purely educational.

My intention in writing this article is not to deal so much with the founding and conducting of societies devoted to fruit, plants, flowers, and vegetable culture for exhibition alone, as with those set apart wholly or partially to the social and intellectual improvement of gardeners of all grades, although they are so closely connected with each other as to render it difficult to deal with separately. The reason of this is quite obvious, for the best of the latter are those which form a part of the former, and the advantages and facilities for mutual intercourse and improvement are so much the greater for this combination of influence and strength. Nothing is more rational or sensible than that the same corporate body and the same funds which are employed for encouraging the culture of the products of the garden should be applied to the culture of the mind of those whose chief business it is to grow and tend such. Besides, there is the advantage of securing a greater amount of strength and interest in its welfare by holding out such an excellent inducement to the members as the existence of a mutual improvement branch.

There are several well-known societies which adopt this plan of federation, notably the Paxton Societies of Notts and of Yorkshire and many others, and no doubt they find it conducive to their best interest to do so. Special ones are, however, not altogether rare, though not so numerous in England as in Scotland. There is, we believe, an excellent one at Drumlanrig, also at Dalkeith, and other places thereabouts. Quite recently one has been formed at Birmingham by enthusiastic brethren of the craft, aided by Mr. Latham of the Botanic Gardens, and judging from the excellence of the papers read before its members, and from the fact that a capital library is in course of formation, it will not fail to prove a successful and useful undertaking.

In large establishments where a great number of men are employed, there are excellent opportunities for forming themselves into an association. By subscribing a trifle each every week to purchase books and papers, preparing and reading essays on gardening and other collateral subjects, giving each other mutual instruction, and occasionally refined musical entertainments, the long evenings of winter may be usefully and profitably spent. If there is no one among the number capable of giving his less educated brethren lessons in grammar, mathematics, geometry,

and other needful accomplishments, a small additional subscription would pay the services of a qualified teacher on one or more evenings during the week. A few necessary rules would be required to ensure its proper management, and these I propose to give in another article, with a view to assist those who may be desirous of starting a similar affair. An obstacle to these plans being carried out frequently arises through it being difficult to secure suitable rooms for holding the meetings, &c. In private gardens this may be overcome by holding it in the bothy, and where the members are recruited from several places the effect of a respectful deputation to the rector or managers of a school will generally ensure the granting of one of the rooms for the purpose. For carrying out a scheme of this kind a committee should be formed, whose duty it would be to arrange such matters as those referred to.—T. W.S.

(To be continued.)

TABLE PLANTS.

THE production of plants for table decoration is an important part of the duty of many gardeners. The committees of Chrysanthemum societies, recognising this, have offered prizes for table plants, and the free response thereto has added a pleasing diversity to autumn exhibitions, and afforded excellent opportunities for observing the "style of plants" and varieties best suited for the purpose in question. Plants from 12 to 15 inches high above the top of the pots, unless in the case of Palms, which might be a little higher, light, elegant, and more or less pendulous, clean, bright, and well furnished with foliage from the soil, even and symmetrical in growth, are usually the most successful in winning the prizes. It takes all those qualities to make a well-balanced table plant. The following varieties have figured very prominently in the winning classes this season, and may be taken to rank among the best for table and room adornment.

Palms.—Cocos Weddelliana is still one of the lightest and best, when bright and clean it is highly effective. Geonoma gracilis is somewhat heavier, yet very graceful and suitable for the purpose. Tbrinax elegans and Areca lutescens are good, but not, as a rule, quite equal to the others, yet the last named is particularly useful for certain positions in rooms, as it will stand more rough usage than any other Palm with which I am acquainted.

Crotons.—It is in this genus that we find the most effective of all table plants, although they are more tender, and consequently not so lasting as several others that are less ornamental. C. angustifolius, when at its best and well coloured, is still one of the best, its light pendulous habit makes it a general favourite; Cheloni is somewhat in the same character, being pendulous, light, elegant, distinct and effective; interruptus aureus is not quite so graceful as the foregoing, but it is very telling when well coloured; Weismanni, although this variety is a little heavier, the beautiful markings and the deep gold colour of the foliage are very striking in a well balanced plant; Rodeckianus has longer foliage sub-divided after the character of interruptus, the colour being a deep red intermixed with the green and yellow; picturatus, and many other of the broader-leaved varieties which colour highly, are very showy plants for decorative purposes, but the narrow-foliaged varieties are generally more highly esteemed for tables.

Dracenas.—The dark-foliaged varieties that are found in this genus form a striking contrast to the dark green of the Palms or the golden hues of Crotons. The varieties of nigra rubra, superba, and Sydneyi are among the best in the narrow dark-leaved, gracilis or marginata being attractive in the narrow green-leaved section.

Aralia Veitchi and elegantissima are two beautiful table plants, and should be included in all collections. Pandanus Veitchi is light and graceful in a small state, but it is very often too large and coarse for our purpose. Such plants as Reidia glaucescens, Cyperus alternifolius fol. var., and C. latus are good decorative plants, but not so well adapted as Palms, Crotons, Aralias, and Dracenas for tables, and if I were asked to recommend six plants these would be—one Palm, one Aralia, two Crotons, and two Dracenas, in the order as they are mentioned above.

In connection with this subject it will not be out of place to mention the advisability of keeping a stock of Selaginella Kraussiana in pots for covering the soil after the plants are placed in vases or other receptacles. I usually keep mine in large 60's, in a pit slightly heated, and make a practice of potting a succession every few weeks; by doing that I have always some in good condition. I find a good potful turned out and the bottom soil broken away, quite large enough for a good size vase or eporgne, and having a little soil adhered to the roots, the moss keeps fresh for a longer time than when torn away from a larger patch than is wanted for immediate use.—C. ORCHARD.

GARDENS ABOUT PRESTON.

WALTON FLATS NURSERY.

THE nursery of Mr. W. Troughton is situated at Walton-le-Dale, about two miles from Preston in the opposite direction to Howick House. This is the most extensive nursery in the vicinity of Preston, and the only one time permitted me to visit, but I hope on some future occasion to inspect others and report upon their condition if they contain any plants or other features of general interest. This nursery is approached by a drive fully a quarter of a mile in length, with a neat well-kept grass verge on each side, and a wide border of choice shrubs and Conifers. This gives

to the entrance a very striking and neat appearance. The grounds devoted to nursery stock are on a very much more extensive scale than I had expected to find them. The stock comprised a general assortment of trees and shrubs, evergreen as well as deciduous. Fruit trees are largely and well grown, in fact everything taken in hand appears to be well done. Amongst a flat of Yews, a golden form, with the same habit of growth as the old English Yew, was very conspicuous. It possesses apparently all the vigour of the green one, and is equally as golden as the form so familiar. The great recommendation of this new seedling is its natural upright growth. It makes a lead as free as the green one without having to resort to staking, which *Taxus elegantissima* does not. Mr. W. Troughton will do well to increase his stock of this plant, for when once known it cannot fail to become popular. The whole of the grounds devoted to nursery stock were particularly clean, and not a weed was to be seen. Taking the nursery as a whole, I do not remember ever visiting one cleaner or better kept throughout.

The glass arrangements are extensive, and the same marked tidiness pervaded every department. There is a large and very choice collection of hardy Ferns, and additional provision has been made for their accommodation, one good-sized house being full of the finer forms of *Scolopendrium*, many of the plants being of a moderately large size. Two or three other houses are devoted to other varieties, varying in size from those in thumb pots to specimen plants. Another house was full of *Camellias*, and, like the Ferns, were of nearly all sizes, from bushy little plants in 5-inch pots to those in large tubs. Another house was full of *Adiantum cuneatum*, plants 1 foot to 18 inches through for cutting. Another was filled with French and Fancy *Pelargoniums* in 5-inch pots for spring flowering. *Eucharises*, *Bouvardias*, double *Primulas*, especially the old white, are grown in large quantities; so also are *Roses* and many other plants that are to be found in nurseries for the supply of cut flowers and for sale. A long span-roofed house, low, no side ventilators, was filled with *Tomatoes*, the plants growing in small gutter tubs sawn in two, and the fruit was hanging like ropes of *Onions*, the variety being a select form of *Large Red*, and a large free-fruited kind it certainly is.

The houses are heated by two large Rochford boilers that are fitted up on the place, and Mr. Troughton speaks very highly of them. For the instruction of those who do not know the Rochford boiler, I may say that it is a series of cast pipes fitted together on nearly the same principle as the Chilwell Nurseries boiler recently described and figured in these pages. The pipes in the houses are arranged on a novel principle, and they alone are worthy of a visit by anyone interested in this matter if they are at any time within easy reach of Preston. Instead of forming dips to pass the doorways, the pipes are carried above the door, gradually rising from the front of the house to the centre of the door, and then sloping downwards again, and carried along the back wall on a higher level, in some instances, than the front pipe. In other cases, as they are carried over the door to the front, a pipe is taken along the roof, perhaps about the centre of the house; but this central pipe being the highest, takes the lead, and leaves the front cold, unless check valves were provided to prevent the water flowing directly through the central one. Mr. Troughton has just been carrying this principle out on a much larger scale to keep the frost out of the houses in which the hardy Ferns are grown. The pipes employed are 3-inch, and secured together by Messrs. Messenger & Co.'s patent joints. The pipes do not look unsightly when arranged on this principle, and the water is compelled to circulate through them, for the whole are arranged on the flow principle—that is, the water must flow all through the pipes before it leaves the house to enter the main returns; practically there are no returns in the houses where the pipes are arranged on the principle pointed out. This system does away with the objectionable dips that are costly to the trade, for unless the pipes are laid in good chambers, they soon corrode away, and are never certain, in practice, to act satisfactorily. In theory, dips can be made to work by adhering to certain limitations, but in actual practice they invariably fail. I was well pleased with my visit to this nursery, which, on the whole, was not only of a highly interesting nature, but profitable, for several valuable hints were picked up that may prove of future use.

PRESTON PARK.

There are two parks in this old provincial town provided for the public—one principally for recreation purposes, and therefore no remark will be made about it; the other is a beautiful park, and the inhabitants of Preston have a just right to feel proud of it, for few if any provincial towns can boast of a more charming park than the one under review. It is comparatively close to the town—in fact, can be entered from the station, as well as from various other parts. It was laid out by Mr. Milner about eighteen or twenty years ago, and is a splendid piece of work, displaying thought and taste. The park is not large, but the most has been made of the ground, and the clumps of trees and shrubs have been so arranged that a very natural appearance has been imparted to it. In some respects it resembles Battersea Park, London, while in others it is totally distinct from that or any other that I have seen. One portion of the ground is naturally high and slopes gradually to the centre, and then rises again slightly towards the river. The higher ground has been arranged with a series of terraces and imposing flights of steps. Below is a large portion of lawn devoted to hedging, which is well and tastefully carried out, the carpet heds being neat and in good keeping. Through one portion of the park the London and North-Western Railway passes, and crosses the river by a high bridge. This, what would

appear objectionable, has been rendered one of the most charming portions. The raised ground on which the railway passes before reaching the bridge over the river has been rendered most picturesque by a quantity of ornamental rockwork, with waterfalls here and there. The rocks rise some 20 feet or more in height, and completely hide the wall from view which supports the railway embankment. The rocks are fairly well furnished with *Iberis*, *Ivy*, and other rock plants. Below the rockwork is a flower garden; in the centre of a lawn surrounded with heds and clumps of *Heaths*, *Iberis*, and other similar plants arranged amongst rock that are in keeping with the more massive rockwork beyond.

Mr. Rowbottom, the present superintendent, laid out these grounds according to Mr. Milner's design, but they have been wonderfully improved since. The rockwork, for instance, has been erected of recent date. This park is well kept, and reflects great credit upon Mr. Rowbottom, who is a genial and very able patron of horticulture.—W. B.

DECORATION WITH PLANTS.

AT this time of year the resources of gardens and the ingenuity of gardeners are taxed to their utmost extent. Balls and parties are frequent, and the ever-increasing demand for cut flowers and plants that are so necessary to successfully carry out suitable embellishments on such occasions renders their production and economical use a matter of great importance to gardeners generally. When plenty of plant houses filled with material specially prepared for such times are at command the task of decorating is much simplified; but it sometimes happens that a sudden demand is made for furnishing material, and no opportunity given for preparation in the thorough manner we should like. A little ingenuity applied at such times may often be the means of making a more imposing display than is sometimes the case where abundance of material is at command.

I will now offer a few remarks on plant decoration which have suggested themselves to my mind at various times when I have had considerable practice at that kind of work, and which have again been brought forcibly to my mind during the past week. I am not now speaking of that kind of plant decoration in which they are allowed to remain in the various rooms of the mansion as long as they will keep fresh and then be replaced by others, but of the kind generally required for balls, concerts, and other parties where the plants only remain for a short time, which admits of more "making up" being done than would otherwise be the case. At such times they are generally used for arranging in entrance-halls, passages leading to the hall-room, over mantelpieces, in fireplaces, and around band-stands, or to fill in recesses, when it often happens there is ample scope for the display of considerable taste in the arrangement of beautiful groups, by which means an unattractive-looking hall may be converted into a veritable paradise.

Palms of almost all kinds are extremely useful—in fact, indispensable for the purpose, as, in habit of growth and great variety of form, they are so distinct from other plants, and nothing can compete with them for forming backgrounds and giving a varied and undulating surface to groups. *Dracenas*, *Crotons*, *Grevilleas*, *Acacias*, *Arundinarias*, *Curculigos*, *Cyperuses*, and *Pandanus* are among the most useful of foliage plants; while the following kinds of flowering ones are all in season and very suitable for decorative use. *Primulas*, *Cyclamens*, *Ericas*, *Calanthes*, *Cypripediums*, *Epacris*, *Epiphyllums*, *Solanums*, *Azaleas*, *Deutzias*, *Roman Hyacinths*, *Hebeveria retusa*; but two that deserve special notice just now are *Poinsettias* and *Callas*. They give all kinds of arrangements quite a distinct feature when dotted about here and there and showing well above the other plants, but the effect is quite spoilt if they are used too freely.

A very common mistake in arranging plants is to crowd them too closely together, and give a mass of bright colour with but little to relieve it; the effect is then anything but pleasing. We always like, when arranging groups, to have a groundwork of Ferns, Grasses, and such like plants, with flowering or brightly coloured foliage plants springing from it at irregular intervals, and standing well above the groundwork, with Palm leaves drooping gracefully above and around them, the whole surface having numerous irregularities, from which spring plants of striking appearance, and that the eye cannot ramble over the whole group at once, but catches something fresh in every glance.

For finishing the edges, plants in small pots of *Panicum variegatum*, *Isolepis gracilis*, *Tritonias*, *Pileas*, and Ferns are excellent; but when a large amount of grouping has to be done it often happens that although plenty of plants can be found to fill the main part of the group, there is not a sufficient quantity of small ones to complete the edges in a finished manner, and the effect is greatly marred if large pots are visible. But that difficulty can be easily overcome, as with the help of a few branches of shrubs the pots can be hid, and the appearance be much better than is sometimes the case when pot plants only are used, and they packed closely together without anything to break the flatness. Spread out the plants that are at hand; then, if any large spaces remain between, fill some small pots with soil and make up nice little bushes with different kinds of shrubs, such as *Box*, *Yew*, *Laurustinus*, *Berberis japonica*, *Holly*, &c., and place between. In some cases lay the pots on their sides, so that shrubs face outward; it is then an easy matter to fill in with small branches of shrubs so as to completely hide every pot and yet look light and pretty, the shining leaves of many of the shrubs looking remarkably

well when seen under artificial light, when mixed among *Isolepis* and *Panicum*. If a pot is visible in any part of the group, a branch or two of shrub placed there will effectually hide it, and if plants are scarce a few larger bushes could be made up and arranged with them. With a given number of plants a much greater show can be made in this way, and the effect is very good indeed.—H. DUNKIN.

INDIAN EXPERIENCES.

(Continued from page 476.)

IN continuation of my experiences as a planter. On my arrival, late in the afternoon, at the house or bungalow of the gentleman with the foreign name I found him in company with another reclining in a long-armed American chair with his feet at almost the same elevation as his head, and a look of supreme contempt on his face. I was duly introduced by his English assistant whom I had met at the foot of the hill on which the bungalow was built, and without attempting to rise from his horizontal position Mr. Bassano—for such was the name of my future superintendent—greeted me with the words "Oh, ah! so you are the swell gardener they have sent me out from England? Very well; you can stay with me here till such time as you can build yourself a house. I will charge you at the rate of 45 rupees per month for your board and lodging. The estate I intend putting you in charge of is about two miles distant from here, but you can easily walk that distance night and morning till I can get a pony for you." Now, as it was distinctly expressed in one of the clauses of my agreement that, in addition to the salary named at the beginning of these papers, I was to have a free house on the estate and the use of a horse when required, I was not a little taken aback at finding that I had to build my own house and to do the work of a superintendent of a Coffee estate without the assistance of a horse, at least for a time. I saw also at once from Mr. Bassano's manner that I was, for some reason or other unknown to me, "not wanted," and the resolution to take advantage of the optional break in my agreement was again strengthened. I found out afterwards that the manner of my reception was caused by the owners of the plantation in England and Bombay having engaged me and arranged for putting me in charge of one of their plantations without the knowledge of Mr. Bassano, the manager on the spot. The discovery of this fact of course made my position rather an uncomfortable one, at the same time I did not hesitate for a moment to go to work with a will and trust to time and the course of events to alter my position. So far I was charmed with the country and felt, as it were, a new world opened up to me, and was contented to take my chance as a Coffee planter for the period of three years at any rate.

Before proceeding further with my experiences while resident in the Wynaad district, I may state that at the time of my arrival in the country Coffee planting in Malabar was in the heyday of its prosperity. A comparatively small area of land had as yet been brought into cultivation, and a still smaller area into full bearing of Coffee; but a consecutive run of favourable seasons and consequent abundant crops of Coffee, and also the briskness of trade in Bombay at that period, had the effect of inducing capitalists and speculators to invest large sums of money in the purchase of already existing plantations and uncleared jungle land for the purpose of Coffee cultivation. Old estates were bought and sold for sums generally far above their value, and so-called estates, with perhaps a score of acres or so newly planted, and perhaps 100 or 150 of jungle, fetched greatly more than their value, even if the whole area had been under Coffee in full bearing. The "old hands" of the district saw at once that their time had come, and did not hesitate to sell plantations of a fully matured or embryonic nature, and made all possible haste to open, or make a show of opening, others with which to tempt the Bombay speculators both European and native, in too many cases to their ruin.

The young hands, myself included, being unable to grasp the exact meaning of all this dubious and rapid transfer of property, or not being in possession of consciences of such elasticity as their elder brethren, were content to labour on in the attempt to bring the plantations under their charge up to a high state of cultivation and productiveness, whilst looking on at their more knowing and experienced if more unscrupulous neighbours realising a maximum amount of money for a minimum amount of labour. But the crash came at last. The bubble companies of Bombay suddenly burst in the year 1866, and the supplies of money for the cultivation of numerous estates were as suddenly stopped, bringing ruin and dismay into the district, from the effects of which it never afterwards fully recovered.

The plantation of which I was made superintendent was cut out of a dense hardwood and Bamboo jungle on the high road leading from the western coast to the Mysore State, and within two and a half miles from the Mysore frontier, and situated further to the eastward than any plantation then opened in the district. There were two typical districts in the Wynaad called the Bamboo and the forest districts respectively, and clearings for Coffee in these localities were called Bamboo or forest estates, as the case might be. The forest estates lay at the foot of the Ghaut range slopes facing eastwards, and were cut out of the dense black forest already described, and the Bamboo estates on the flat or undulating land more to the eastward, favouring a growth of deciduous hardwood trees and Bamboo jungle only, and with a much lighter rainfall and warmer climate. The Coffee plant on the forest estates was slow in coming to maturity of growth and full bearing of crops, whilst on the Bamboo estates the growth of the plants was extremely rapid, early maturity and heavy crops in favourable seasons being the usual result. The soil of the estate of which I took charge was of the usual description all over the

Bamboo tract—black or dark coloured loam of a light nature, and with an average depth of about 15 inches, the under strata being generally of a gravelly or gritty nature impregnated with iron.

Up to the second or third year after planting the Coffee made a rapid and luxuriant growth, and an estate of that age of from 100 to 200 acres in the Bamboo district was a truly beautiful sight, either when simply covered with its glossy and shining evergreen foliage, or loaded with its pure white and deliciously scented blossoms, lasting in its beauty for only twenty-four hours, but beautiful in the extreme. The first Coffee blossom I saw was that produced by a few trees growing by the side of an artificial water channel, and appearing rather out of season in the middle of the hot weather. This was brought about, of course, by irrigation, a system of culture which, when applied to Coffee, was looked upon with extreme disfavour by all planters at the time of which I write, but a system which, before I left India, was held in universal favour, and in furtherance of which large sums of money was spent by estate proprietors wherever water was available, the uncertainty of the spring showers being the main cause of this revolution of opinion. But on the subject of irrigation I shall have more to say hereafter from notes made on the spot.

The estate I took charge of had about 120 acres already planted; some 40 acres would bear its first crop the following season, the remainder only having been planted some six months. The elder part of the estate looked very healthy and promising, with few, if any, vacancies or gaps in the field. This, however, was not the case with regard to the younger portion of the planting. Gaps occurred here in abundance, and an estimate made at the time went to show that nearly one-half of the plants put out six months before had perished, and this simply from careless planting, the result of frequent changes of estate superintendents, and other causes. I mention the fact of these failures advisedly, because all my subsequent planting experience went to prove that the planter had no more difficult task allotted to him than to fill up these vacancies successfully with growing plants. From a variety of causes it was found extremely difficult in all cases, and in some quite impossible, to replant successfully spaces where deaths had occurred even on openings of only a year's standing, whilst it was sheer folly to attempt to close up gaps on old standing plantations by planting young seedlings. True, some might survive, but they never reached the height or dimensions of the first planted trees, and never yielded any crop, notwithstanding the exercise of the greatest care in cultivation.—PLANTER.

(To be continued.)



KITCHEN GARDEN.

HOTBEDS.—The time has come when hotheds may be worked to advantage. Where glass houses and hot-water pipes are scarce the hotbeds furnish excellent forcing quarters for Rhubarb, Seakale, and Asparagus; but those now recommended to be formed will do more than this, as Carrots, Radishes, and other early spring vegetables may be sown on them, and it will be found that these succeed better over a hot manure heap than they do above hot-water pipes. The heat from a hotbed is moist, mild, and in every way conducive to the germination of the seed and the healthy growth of the young plants, and every garden of any importance should have hotbeds in the early months of the year. Recently fallen leaves and manure from the stable are the best materials for making them, and they should be made very firm. This is the secret of successful hothed making, but many fail with them, as they heat very violently for a week or two, then become quite cold, and this is the result of careless making. When built up and only pressed down with the fork they do not retain the heat long, but if every layer is trodden down as it is placed on, it will retain the heat for three months or more, and we would impress on all who wish to succeed with hotbeds to make them firm.

MANURE FROM RUBBISH.—There are now many prunings from fruit trees and refuse everywhere, and the most profitable way of disposing of all such rubbish is to burn it. This not only disposes of all objectionable matter, but it converts it into first-rate manure, which is of the greatest value for all vegetable crops. Small prunings and rough leaves become greatly reduced when burned, but when once the fire is fairly set going a little clay or rough soil may be added, and if this be applied several times during the time the fire is burning the quality of the ashes will be greatly improved, as burned clay is a most valuable material in all gardens. We burn large quantities of rubbish every winter, and it is in frosty weather that we burn most, as the work is very suitable for weather of that kind, and advantage is taken to clear out every hole and corner containing rubbish.

EARLY RADISHES.—These are easily forced, and they gain maturity quicker than anything that can be sown at present. A hothed is the best place for them. Soil to the depth of 6 inches should be placed inside the frame and trampled down very hard. The seed should then be sown broadcast and cover it over to the depth of 1 inch, when the surface must again be trodden as firmly as possible, and then make it smooth.

Radishes at all times succeed best in a firm soil. The young plants will appear in a week, and they must never be allowed to become crowded, as they are so easily "drawn" that the slightest overcrowding will spoil them. Air should be admitted to them on fine days, but water at the root is rarely needed on hotbeds at this season. If the seed is sown at once they would be ready for the table by the first week in February.

THE EARLIEST SEED POTATOES.—Where Potatoes are planted in frames and other sheltered positions in January and February the seed tubers should now be taken in hand, as it is a great advantage to have them with strong healthy sprouts at the time of planting. If they are left in heaps on the top of each other until the time of planting, as is often the case, the sprouts will be long and spindly, and of benefit in advancing the earliness of the crop; in fact, many of these elongated stems are broken in planting and they should be avoided, but if they are spread out in a single layer in light and air every one of them will produce robust growths, which will not fail to give satisfaction. Where there is no shed to sprout them in this way they should be stood up on their ends in shallow boxes, and, placed in a frame or cool glass house, they will soon be in excellent condition for planting. We have proved that Potatoes sprouted with care in the manner we suggest are a fortnight earlier than those not so treated when lifting time comes round.

CHICORY.—The recent frosts have been hard on Lettuce and Endive, and open air salad plants are now very scarce, and where salads are in frequent demand those who have to provide them will find it no easy matter to do so. Chicory, however, is the best substitute we know for Lettuces and Endive, and a superb salad may be made with Chicory, Mustard and Cress and Beetroot. The latter three are easily secured, and so is the former, as where the roots were grown in the summer and autumn they may now be forced into luxuriant growth in a fortnight. They should be dug from the ground without breaking the Carrot-like roots, and six, eight, or ten of them may be potted into 8-inch or 9-inch pots; they should then lie plunged in a bottom heat of 80° or 85° in a dark place, and crisp leaves will soon follow.

EARLY LETTUCES.—Where seed was sown in autumn with the view of securing plants at this time from 3 inches to 4 inches high, a stock of early spring Lettuce will be secure, but where no such provision was made a blank will occur unless seed is sown at once. Veitch's Early Paris Market is the earliest of all Lettuce, and a pinch or two of this variety should be sown at once in a shallow box or pan. The seed may be germinated in a heat of 65°, but as soon as the young plants appear they should be put in a temperature of 45° or 50°, kept near the glass, and well aired on all favourable opportunities. These plants will be ready for planting by the first week in February, and fine crisp young heads may be cut by Easter or earlier where proper attention is given them.

SEAKALE.—We are cutting this now, but it is the least satisfactory of all our early vegetables, as it is not so easily forced as Asparagus, before the new year at least. Now, however, it grows more freely and luxuriantly, and a good number of roots should be put in to force at once. The pot and hotbed system of forcing may be followed, or the roots may be lifted, potted in batches, and forced on in a warm dark place. This system has given us our produce now, but if the pots are turned upside down over good crowns, and these are well banked round with hot manure, Seakale will become abundant in a short time.

FRUIT FORCING.

PEACHES AND NECTARINES.—*Earliest House.*—The trees started early in the month will now be in flower. The temperature from fire heat should be 50° by day in dull weather, rising to 65° with sun heat, air being freely admitted in the day and a little at night, a stagnant atmosphere being fatal to the blossom. In cold weather the temperature may fall to 40° at night. A moderate moisture in the atmosphere will suffice. In bright weather the floor or border may be sprinkled in the morning, keeping the soil in a moderately moist state at the surface and thoroughly moist beneath. Insure the distribution of the pollen by shaking the trees, admitting air in fine weather so as to insure a circulation of air, which has a wonderful effect on the liberation of the pollen. To avoid any anxiety after the setting dust the blossoms carefully with a camel's hair brush or a feather. Take pollen from those varieties that afford it freely, such as Royal George, and apply it where there is a deficiency.

Second House.—The house having been closed fire heat may be used, so as to afford a temperature of 50° by day and 40° at night, allowing it to rise to 65° by day with sun heat, accompanied by plenty of ventilation, sprinkling the trees morning and afternoon until the blossom commences to open, when the sprinkling of the floor in the place of the trees will be sufficient. If the roots are partly outside that part of the border should be covered with leaves and litter, so as to keep the roots from being chilled by frost or melted snow. The inside borders must be rendered thoroughly moist by repeated waterings.

Later houses should be placed in order at once, and if any trees are swelling their buds more rapidly than is desired a covering of mats over the lights will prevent the temperature being raised by sun heat to a prejudicial degree, retarding the flowering considerably.

CUCUMBERS.—Young plants coming into bearing should not be over-cropped, assisting them by removing unnecessary fruit blossoms, also male flowers and tendrils. Plants in bearing will require to be cut over at least twice a week, removing all weakly and exhausted growths, reserving as much of the young growths as have space for expanding their foliage. Stop the shoots at one or two joints beyond the fruit, but young plants should be allowed more freedom, laying the foundation of a well furnished plant, avoiding overcrowding. In mild weather the temperature should be 65° to 70° at night. In severe weather 60° to 65° at night

is more suitable; by day 70° to 75°, with a rise of 10° from sun heat, admitting a little air at 80° if the outside air be moderately warm and soft; but if cold and sharp it is better to allow the temperature to advance a little higher than admit cold air even when the sun is powerful, the heat turned off when there is hot sun will do much to lessen the necessity for ventilation. A little flowers of sulphur dusted on the foliage and hot-water pipes is a good preventive of mildew and red spider. Quicklime rubbed well into the parts affected with canker will subdue it. The floors will need damping in the morning and early afternoon.

Raising Plants.—Sow now for raising plants to put out in pits or frames early in February, which are heated by fermenting materials. If no convenience exists for raising the plants a bed of fermenting materials should be made forthwith, the seed to be sown so soon as the frame affords a suitable temperature—70° to 75°. The plants from this sowing will be available for planting to afford a late spring and early summer supply of fruit, under good treatment fruit being forthcoming in March and early April. No variety surpasses Rollisson's Telegraph for general use.

MELONS.—Seed to afford plants for the first crop may now be sown. Fruit from this sowing may be expected in late April or early May. Sow singly in 3-inch pots, filling the pots about two-thirds full of soil moderately light in texture, which will allow of soil being added as the seedlings advance, strengthening them wonderfully. They should be kept near the glass, the object being to secure a short stem and sturdy growth. A temperature of 65° to 70° at night, and 70° to 75° by day is suitable. Longleaf Perfection is an excellent green or white flesh, and Blenheim Orange scarlet flesh. If variety is wanted have Eastnor Castle, Hero of Lockinge, both green flesh, with Benham Beauty and Scarlet Premier scarlet flesh.

PINES.—In most establishments where Pine Apples are grown there is a demand for ripe in May and June. It will be necessary to take into consideration the present condition of plants that are to afford that supply. Where there was a good show of fruit of such varieties as Smooth-leaved Cayenne, Charlotte Rothschild, Black Jamaica, Montserrat, with Black Prince in October and November, the necessity of starting plants now will not be so imperative as where there was not a sufficient number of those varieties showing fruit at the time named, and as fruit of those indicated starting now will not be ripe at the requisite time, plants of the Queen, Enville, and Providence varieties, which require less time to arrive at perfection, should be induced to start their fruit. Select from the successional stock plants that have been subjected to somewhat cool and dry treatment, choosing those that have an enlarged base with a tendency to open in the centre. Place in a light house or pit, and plunge them in a brisk bottom heat of 85° or 90°, the atmospheric heat ranging between 60° and 70° at night, according to external conditions, allowing from 5° to 10° more by day. A genial atmospheric moisture must be kept up about the plants, but not by steaming from the hot-water pipes or syringing the bed between the plants, but by occasionally damping cool surfaces about the house. The soil must be examined once a week, employing tepid water with a little guano in it or some other approved stimulant, applying it copiously when needed and at no other time.

TOMATOES.—Where plants have not been raised from cuttings made in autumn seed should now be sown rather thinly in light soil and placed in a house where there is a temperature of 55° or 65°. We prefer to sow singly in 3-inch pots half filled with soil and to place near the glass. The plants are earthed up as they require it, and are transferred to 48's—i.e., 5 inch pots—with the balls entire. From these they are planted in the fruiting bed, which ensures a depth of about 12 inches for soil, the part under being stubble, over and surrounding hot-water pipes—in fact, the exact counterpart of a Cucumber house. The bottom heat makes much difference, just as it does with Cucumbers, especially for winter and early crops, but it is not essential. The plants should be encouraged to make a sturdy growth, keeping them well up to the light. Plant them out when they have filled the 5-inch pots with roots in ridges the whole length of the house and about one foot wide at top, had in some few days to warm and down to the first leaves, making the soil firm so as to ensure a sturdy growth. The plants should be 18 inches apart. Train to wires a foot from the glass, with one stem, keeping off all side shoots, and the plants will be single cordons. Fruit will show right along, therefore stop only when the last truss is gained on the extent of the space. Good loam with a fifth of well-decayed manure will grow them well, but some lime rubble, about a sixth, and a free admixture of charcoal, is advantageous. A 2-feet width of border is ample, the plants being earthed as the roots protrude. Surface dressings and liquid manure can be given when the roots have possession of the soil. Where cutting plants are forthcoming they be planted out at once, affording a night temperature of 55° to 60°, 60° to 65° by day, and 70° to 75° from sun heat, ventilating from 65°. In dull, damp weather a crack of air should be left on constantly, as a close atmosphere is very enfeebling. When in flower ventilate freely. The bottom heat should not exceed 70° to 75°. Early fruit can be had from plants in pots, 8-inch or larger being employed, the pots being filled about two-thirds with soil, and that space left after planting for surfacing. Train with one stem, and keep well up to the light. About five trusses of fruit are good for pot plants. Hackwood Park Prolific is a reliable sort.

PLANT HOUSES.

Acorns.—The whole of the stock must be kept free from insects, for thrips quickly destroy the foliage, and scale and bug check the growth. Syringe the plants with a solution of tobacco water if they have even a trace of thrips upon them. Those that flowered in the autumn may have any irregular growths cut back, but in other respects should be kept quiet

for the present. Those partially pruned in early autumn and repotted will be in good condition at their roots. These, if plunged, will, by the aid of the bottom heat afforded from the litter and leaves, soon commence activity, and as the days lengthen, with increased heat they will grow luxuriantly and produce their large beautiful trusses early in the season, and afterwards yield a good autumn supply of flowers. Young stock struck in autumn and now in 2-inch pots may be transferred into 4-inch pots; drain them liberally, and be careful that the soil is well warmed before they are repotted. The compost may consist of peat and a liberal dash of coarse silver sand. Water these with great care, but do not syringe their foliage at present.

Caladiums and Gloxinias.—A few of these may now be turned out of the old soil in which they have been resting, and either placed in small pots according to their size, or placed together in pans amongst leaf mould until they show signs of growth. The last method is the best, and the pans or boxes containing them can be plunged amongst the large plants trained upon trellises. A few *Achimenes* may also be started, but the tubers of these may be laid in good soil in pans, for they will have to remain in them for some time to supply cuttings for making up pots and baskets. These plants do well in any light rich compost.

Cyclamens.—Attention must now be directed towards raising the stock of plants for another year. Seedlings must be carefully pricked singly into 2-inch pots filled with equal parts of loam and leaf mould and a good sprinkling of sand. Supply with tepid water, and plunge the small pots closely together on a shelf near the glass in sand or cocoa-nut fibre refuse. They must be kept in a temperature of 60° and not allowed to become dry. If the plants are insufficient for the stock required more seed should be sown at once. From seed sown now grand plants in 5-inch pots may be produced in twelve months.

Roses.—If a bed of leaves, or these and litter, can be made up in a cool house for standing the pots of Hybrid Perpetual Roses upon, and if finally plunged they will break strongly. The heat from the bed will be ample for some time, and they will grow much stronger and remain cleaner than if subjected solely to fire heat. The gentle warmth from the leaves encourages root-action, and the shoots possess a healthiness and vigour that it is scarcely possible to obtain by any other method. Young plants of Tea varieties that were rooted in early autumn, and now in 3-inch pots, may be placed into 6-inch, and if stood with the H.P.'s, or in a temperature of 50°, will quickly throw up from the base and produce flowers if they are desired.

THE BEE-KEEPER.

SKEP MANAGEMENT.

Not a few specimens of the old-fashioned bee-keeper of a former age remain in the less densely populated districts of this country, showing by contrast the great advantages which new methods of management have given over the sulphur pit, at one period generally in use when the bees had to be deprived of their stores. It is unnecessary to point out the manifest advantages of the modern system, but for the benefit of those who have hitherto followed the dark and weary road travelled by the apiarians of the earlier part of this century, I will, at the expense of some necessary repetition, give a few plain instructions to those who desire to save their bees while appropriating their honey.

It is quite lost labour to smear the inside of a hive into which a swarm is to be placed; the sugar, the beer, and the cream so commonly made use of may be saved and put to some more practical use. The hive must be clean and sweet, and the bees will then stay and build their combs, thankful to begin their housekeeping afresh under such happy auspices. Occasionally, it is true, a swarm persists in leaving the hive into which it has been shaken, and when bees are obstinate they seem, like men, to continue their obstinacy until the circumstances have been changed. Why it is has never yet, so far as I have heard, been explained; but when bees refuse to stay in one hive and they are placed in another apparently the same as the former in every respect, the swarm will remain content and happy and give no further trouble. It is quite unnecessary to make the hideous sounds formerly attendant upon the issue of a swarm; they do no good, and are not of themselves sufficiently interesting to be continued unless they are practically useful.

Many of the straw skeps now in use are far too small for profitable management, and at least nine-tenths of the larger size are less profitable than they ought to be, because the hole in the top of the hive connecting the brood chamber

and the super is too small to afford a ready passage to the many thousand bees continually seeking ingress and egress when the honey glut is at its height. To talk to bees was formerly a general custom in villages, and even now not a few instances could no doubt be found in which the owner of a few stocks talks to them—as a village bee-keeper said to me the other day—"like Christians." "Pretty creatures, did they be disturbed?" but they do not treat them "like Christians!"

When we see in a garden a few stocks of bees in a dilapidated condition our advice is—unless the man is more than ordinarily intelligent and apt in learning—to allow the bees to swarm naturally, and then place them in new hives, so that even in that, the first year, some little surplus may be taken, and in addition a foundation is laid for a profitable apiary in the future. Artificial swarming is very useful, and when performed by men of experience is a safe way to increase stocks naturally without allowing them to swarm and being compelled to run the hazard of losing the swarm by its coming off when nobody is at hand to see and hive it; but for a novice to attempt to take an artificial swarm is rather a dangerous experiment. Indeed, in America artificial increase does not appear by any means to be in universal favour, and even some prominent bee-keepers of this country prefer to have a natural increase with its attendant hazard rather than compel the bees to leave their homes before they are ready to form a colony. After the first year increase should be entirely prevented if surplus honey in supers is required. How to prevent swarming has so often been pointed out that it is quite useless to go over the same ground again.

In feeding bees there is a great danger, lest by the careless exposure of sweets the vice of the honey bee should be aroused and a raid be made by the bees of another hive upon the one to which the food is given. Great precaution must therefore be used, and the greatest possible care taken not to spill the slightest drop of syrup in or around the hives.

Dryness and warmth conduce to safe wintering. The coverings of hives must be therefore of such a kind as to admit of packing with warm material and throwing off the wet; but the floorboard must not be so large that wet can lodge upon it and trickle down into the hive. Mice must be excluded, the hive kept clean, and no food given unless the hive is absolutely in want during the winter months. If food must be given a cake of candy on the top is best at this time of the year, but in spring a copious supply of syrup must be supplied, for bees are careful insects, and if they find that food runs short they will be careful not to produce extra mouths when there is nothing wherewith to feed them—FELIX.

SMALL v. LARGE HIVES.

In my endeavour to show how the cottager can get his honey from his straw skeps in a more saleable form by the adoption of sections, I hope they may not conclude that I am an advocate of small hives as compared with large ones. The price of honey has now fallen to such a low figure that it can scarcely be advisable to urge cottagers or anyone else to lay out much money on costly hives with the hopes of soon making a fortune with them. The fact of the matter is, bees must now be managed on the most economic principles to get much pay out of them. But apart altogether from the question of profit, bee-keeping is extremely interesting, and their presence in the cottage garden is generally a sign of industry. The honey produced, if it brings but little in the market compared with what it did a few years ago, is always welcomed by the cottager's wife, who will sweeten many a butterless crust for her hungry children. Let cottagers who have small hives use them to the best advantage, not in aiming to have a great number of them, but by uniting his late "casts" to others, and so make up a less number strong in numbers, and with favourable weather at the right time he may depend on a fair return for his labour.

Let those, however, who are in want of new hives get one large one if it costs as much as two small ones, and be content with half the number. Large straw skeps are now supplied by dealers cheap and good, and of sufficient size to carry a tray of eighteen 1 lb. sections without projecting beyond the stock hive. But there are many ways by which a handy man may make very good hives out of very simple and cheap materials. As an illustration of this I have made a sketch (fig. 87) of one that I made two years ago. I procured two large cheese boxes at the grocers'

took the bottoms out of both, reduced one in size and fitted one inside the other, filling the vacant space between them with sawdust and stopping the ends (to retain the sawdust) with wooden hoops. Into one end was then fitted cross bars with a piece of comb-foundation attached to each, and arranged $1\frac{1}{2}$ inch (from centre to centre) apart. A thin board is then fitted on the top, having an opening about 10 inches square. This is surrounded with a stronger piece of wood, as will be better understood by referring to *a* in our sketch. This makes a stock hive 15 inches in diameter and 11 inches deep, which is a fair size. On the top of this a bottomless box (*b*) is placed, not fixed. A narrow lath is nailed round the bottom of it to keep it in its place and keep the union dry. For a roof two pieces of stout board the shape of *c* are joined together by nailing two laths on to the narrow ends, and a sheet of zinc, 2 feet by 2 feet 3 inches, nailed on the top at *d*. The box, *b*, is 8 inches deep, and the top makes it two more, so that there is depth enough for two racks of sections on the hive at the same time. The roof is the most expensive

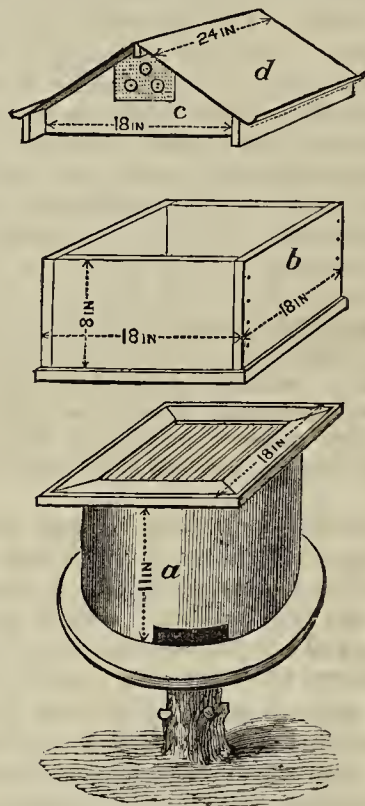


Fig. 87.

part of the whole hive, the zinc costing 1s. The box, *b*, is an old 500-section case, the top and bottom of the same being utilised in other parts. The cheese boxes were 4d. each, and the floor board is the end of an old claret cask, the latter being securely nailed on to the top of an old tree stump sunk into the ground. This completes a rough-and-ready but cheap and roomy hive.

A quilt, similar to those recommended for placing over sections, must be provided for the opening in the top of the hive, and a small bag of chaff on the top of that, the latter to be used on the top of the sections also. Into this hive on the 12th of September, 1885, I placed four lots of driven bees—my first attempt—leaving the queens to fight it out. I fed them with 20 lbs. of sugar, and gave them a similar quantity after the middle of March following. I gave the cottager 3s. for the bees, and the sugar cost 8s. 4d.—11s. 4d. altogether, and the return was eighteen 1 lb. sections, three only of which was not quite filled. I have four bar-frames hives, and did not get more from either of them, and two produced none at all.—A COTTAGE BEE-KEEPER.

DEATH OF A VETERAN BEE-KEEPER.

It is with deep regret we have to record the death of an old associate and veteran bee-keeper, Mr. J. Lowe of the Clydesdale Bank (Limited), who died at his residence, Slateford House, Slateford, on Wednesday, the 15th December, leaving a son and daughter to mourn his loss. Mr. Lowe was a great scientist, and in bee matters quite an enthusiast. The active and spirited part he took in the discussion with the late T. W. Woodbury on foul brood and other topics will be remembered by many. Never in our experience has the enthusiasm run so high on bee matters, nor at any time did people show more eagerness to learn about bees from the pages of this Journal and its contributors than at that time. In addition to his interesting controversial contributions many original articles came from his pen. He was also the author of various articles—to wit, "The Reproduction of the Honey Bee," and a poem entitled "The Flight of Time." The latter was published for distribution amongst his friends in 1845, and the text fully portrays his character, finding—

"Tongues in the trees, books in the running brooks;
Sermons in stones, and good in everything."

He was amiable and kind, always ready to help in any movement those who were by circumstances less favoured in knowledge than himself. He frequently gave lectures, astronomy being one of his scientific pursuits.

He was a lover of flowers, and during his health the pages of this Journal afforded an interesting recreation to him, and in his last years he found much solace with his flowers in his little greenhouse.

As a bee-keeper he was more given to the study of the physiology and natural history of the bee than their profitable management. He had to contend against an unfavourable district for honey gathering, besides other difficulties. He had a large collection of appliances of very old date, all of Scotch make. Most of his researches were made through a leap hive, and, although he did not always form a correct opinion, was always open to conviction, and wrought continuously yet fearlessly amongst his bees. I never saw him use smoke or any quieter nor veil while manipulating, and I never saw him stung. He was greatly in favour of the yellow races of bees, but complained sadly of the way they were packed and sent to this country, being often received dead.

MR. WALTER THORBURN, station master, Ecclefechan, and bee-keeper, died in Dumfries Infirmary on Friday, the 24th December, through the effects of an accident on the railway on the 23rd. Mr. Thorburn was an advanced and clever bee-keeper, and was for forty years in the service of the Caledonian railway company. Mr. Thorburn was much respected by his employers, as well as by all who knew him for his affable and obliging disposition. He leaves a wife and grown-up family.—LANARKSHIRE BEE-KEEPER.

FOREIGN BEES.

SOME time ago "A Hallamshire Bee-keeper" spoke very highly of the honey-gathering qualities of some foreign bees—Cyprians, I believe. Will he kindly give us the average yield of honey per hive since he has had them? I should like "Lanarkshire Bee-keeper" to favour us with his average for a few years. I and many more are in a fog; we keep reading of the wonderful doings of these foreigners but cannot get them to do it.—A NOTTS BEE-KEEPER.

TRADE CATALOGUES RECEIVED.

James Veitch & Sons, King's Road, Chelsea.—*Catalogue of Seeds for 1887 (illustrated).*

Webb & Sons, Wordsley, Stourbridge.—*Spring Catalogue, 1887 (with coloured plates).*

John Laing & Co., Forest Hill, London, S.E.—*Catalogue of Seeds, Novelties, Begonias, and Plants, 1887.*

Sutton & Sons, Reading.—*Amateur's Guide in Horticulture for 1887 (with coloured plates).*

William Bull, 536, King's Road, Chelsea.—*List of Specialties for 1887.*

Armand Colomb & Sons, Ussy (Calvados), France.—*List of Plants.*

Ireland & Thomson, 81, Princes Street, Edinburgh.—*Catalogue of Vegetable and Flower Seeds and French Hybrid Gladioli.*

Charles Sharpe & Co., Sleaford.—*Wholesale Seed List.*



* * * All correspondence should be directed either to "THE EDITOR" or to "THE PUBLISHER." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

Bones for Land (W. K.).—Boiled bones are deprived of fatty matter, and their chief constituent, phosphate of lime, is the more readily available as food for plants and crops; but the fatty matter also possesses manurial value, and raw bones are considered slower in action through its presence, but more lasting in effect in the soil.

Small Fruits (J. Marshall).—"Success with Small Fruits" is an American work with a London publisher. It is both instructive and entertaining, and gives a most interesting account of the methods of producing all the small fruits and the modes of utilising them. It is beautifully illustrated.

The Eucharis Mite (Inquirers).—We shall shortly publish an article on this subject, in which information will be conveyed more fully than in the form of a reply in this column.

proportion of lean meat. But I find it unprofitable to graze pigs to a great weight, and as my Black Suffolks sell readily at full prices, at a weight of 90 lbs. to 100 lbs., I see no object in grazing them longer (except for exhibition). My litters consist of nine to eleven pigs, and sometimes of thirteen to fourteen. Some are lost occasionally from over-lying.

"The sows are fed on bran and middlings, and the pigs weaned at from six to eight weeks on soaked maize. The pigs with which I won the champion plate at Norwich last November were only ten months old, and the three animals 8 cwt. 1 qr. 8 lbs. They were wonderfully ripe, and two of them I hope to send to Islington at the Smithfield Club Show. From the time of weaning they had scarcely any other food than maize and Thorley's condiment, which I invariably use to maintain perfect health. It may be interesting to note that a second prize pen at Norwich, of similar age, weighed 8 cwt. 3 qrs. 12 lbs., but they were not so fat. They were the result of a cross between one of my Black boars and a sow of Mr. Spencer's noted White breed, forming a most useful cross breed for ordinary farmyard purposes. After drawing out specimens for exhibition, the best pigs of both sexes are reserved for sale, being kept in healthy store condition. I have sent away about fifty to different parts of the United Kingdom during the past few months, all of which gave satisfaction. I keep the pedigrees of my pigs and carefully mate them to avoid in-and-in breeding. No doubt animals do soon suffer constitutionally from inattention to this matter, and this is why so many ordinary farmyard pigs succumb to disease. My pigs have won several hundred pounds in prizes during the past nine years at the leading shows in England and on the Continent. The pigs destined for pork are matured as early as possible, and the offal amounts to one-fourth instead of one-third, as in the case of ordinary pigs. This I have repeatedly proved by experiment. My general price for dressed carcasses is 6d. per lb."

We quote Mr. Smith's interesting statement fully as a case in point, showing how careful selection and judicious management are really profitable, and that the exercise of common sense and sound judgment is highly important even in so simple a matter as pig management.

Turning to recent writing upon the poultry yard we come upon the query, "Can it be proved that any owner of 100 hens or pullets gets ten eggs per day in drear-nighted December? If it can, of what breed are the birds, and how were they tended and fed?" The writer adds, "We have kept poultry for forty years, and kept them well, and under most favourable conditions, yet we never had ten eggs per day in December from 100 hens as a regular thing." This is a matter to which we have given particular attention for many years, and the result of our experience is that Hamburgs, the so-called everlasting layers, are useless for a supply of eggs in winter. We had three poultry yards on our Sussex home farm, one of Gold and Silver-spangled Hamburgs, another of pure White Dorkings, and another of mixed birds of White and Coloured Dorkings and Sussex. It was from the last yard that we had a full supply of winter eggs, but we are bound to own that this was owing to careful management. The pullets were not only selected early, but were so well fed that they would often begin laying in October, and we always were well supplied with eggs throughout winter, but we must own that care was taken to have plenty of pullets. It sounds very well to say, So many hens so many eggs, but we always allow a margin for failures.

To be continued.)

WORK ON THE HOME FARM.

We have now in connection with the home farm some extensive estate improvements in hand. Notice of our want of some extra men for this work brought men out of employment in such large numbers that many of the poor fellows had to be turned away. Several acres of land has to be prepared for ornamental planting; this work will be less expensive than usual, in the subsoil containing so much gravel as to afford a

perfect natural drainage to the soil. The soil itself contains plenty of small stones, it is a deep fertile loam admirably adapted for trees. This new work consist of an addition of some twelve or thirteen acres to a park containing some miles of ornamental tree belts, wherein the tree growth is highly satisfactory. A deep rich loam upon a gravelly subsoil is the most favourable condition as regards soil that the forester requires, for then, given healthy trees and careful planting, he can feel certain of success full and ample for all trees except certain rare exotics. The soil is trenched two spits deep and it is broken up with steel forks below the second spit, but this third spit is not brought to the surface. So deep is the soil, however, that we should have no hesitation in bringing the lower spit to the surface if it could answer any good purpose. For many years it was our lot to be engaged in planting extensively in soil so poor and thin that there was not a fair spit of it, and the subsoil was an almost barren substance, in some parts almost pure silica, out of which it was possible to manufacture glass. The cost of the preparation of stations in such a soil was invariably heavy, and the results were certainly not commensurate with the expenditure. Large stations insured tolerably free healthy growth for a few years, and then, unless there was a considerable addition of soil around the station, the trees soon fell into an unhealthy condition. It may be thought foolish to plant trees in such a soil, but a picturesque site for a house not unfrequently leads to building without due thought being given to soil or surroundings, and subsequently the planting proves a very costly process. Well do we remember having to cart soil from a valley up a hill side for tree stations with three horses to an ordinary farm cart.

RENT AUDIT AT NOWTON.—The rent audit of J. H. P. Oakes, Esq., of Nowton Court, was held on Wednesday, upon which occasion the tenants were entertained in a most bonnifol manner at the Angel Hotel, Bury St. Edmunds, by Mr. Edward Luckhurst, the highly respected agent. In addition to the principal tenantry, there were also present the Rev. B. P. Oakes, Col. and Mr. W. Josslyn, and others. Throughout the evening the most genial harmony prevailed, evidencing the kindly feeling existing between landlord and tenant—a feeling we are sure it has been the endeavour of Mr. Luckhurst to cultivate during the time he has occupied the position of agent. Everyone present expressed their hearty appreciation of the efforts made by Mr. Luckhurst. It is a noteworthy event in such a crisis as the present that such a goodly feeling should exist between landlord and tenant as was expressed—an event brought about by a just and fair concession on the part of the landlord in the form of a reasonable reduction in the matter of rent, and due forbearance on the part of the tenants. The chair during the evening was occupied by Mr. Edward Luckhurst, the vice being filled by Dr. D. J. Munro of Bury. The usual loyal toasts having been duly honoured, it being especially noticed that both Her Majesty and the Prince of Wales were farmers. Col. Josslyn responded on behalf of "The Army and Navy," and the Rev. B. P. Oakes for "Church and State." Other toasts were duly honoured, especially the toast of the evening—"Prosperity to Farmers and Agriculture," proposed by Mr. Luckhurst, and responded to by one of the oldest tenants on the estate, Mr. Samuel Page of Chilton Hall, Stowmarket. Too much praise cannot be accorded to Mr. Luckhurst for the good feeling he, as agent, has brought about and maintained between Mr. Oakes and his tenantry, each and everyone present expressing their hearty appreciation of his endeavours in that direction. The enjoyment of the evening was greatly enhanced by the music afforded by Miss Brown, Mr. George Carliell, Mr. F. Pattle, and Mr. Timson of Bury.—(*Ipswich Journal*.)

OUR LETTER BOX.

Green Manuring (*C. M. D. S.*).—The numbers containing the articles referred to are out of print.

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude, 111 feet.

DATE.		9 A.M.					IN THE DAY.					Rain
		Barome- ter at 34 and Sea Level	Hygrome- ter.		Direction of Wind.	Temp. of Soil at 1 foot.	Shade Tem- perature.		Radiation Temperature			
			Dry.	Wet.			Max.	Min.	In sun.	On grass		
1886. December.		Inches.	deg.	deg.		deg.	deg.	deg.	deg.	deg.	In.	
Sunday	19	29.820	24.2	23.5	calm	38.2	32.4	22.8	38.2	17.7	—	
Monday	20	30.003	23.2	25.7	N.	37.2	33.6	19.7	48.1	12.2	—	
Tuesday	21	30.419	26.6	26.3	calm	36.6	28.1	25.4	30.0	20.9	—	
Wednesday ..	22	29.907	35.2	35.4	S.	36.2	45.4	21.6	44.8	16.7	0.195	
Thursday	23	29.704	37.3	34.8	W.	36.0	41.6	34.9	63.1	28.8	—	
Friday	24	29.616	39.2	38.0	E.	36.0	44.0	35.1	49.7	28.4	0.267	
Saturday	25	29.935	33.9	32.7	W.	36.2	39.7	31.9	52.4	24.8	—	
		29.928	31.9	31.0		36.6	37.5	27.3	46.6	21.4	0.462	

REMARKS.

19th.—Fog in morning; fine and bright for an hour or two at mid-day; fog in evening; clear night.
 20th.—Fine, bright, and cold.
 21st.—Dull and foggy all day; dense in late afternoon.
 22nd.—Rapid thaw; fine, but with slight fog in morning; wet afternoon; fine clear night.
 23rd.—Fine and bright; colder again.
 24th.—Fair morning; wet afternoon; fair evening.
 25th.—Fine, bright, and cold.
 A variable week; some days fine and cold; others foggy or wet. Temperature 7° lower than that of the preceding week, and about as much below the average.
 —G. J. SYMONS.



*spray deacidified
first leaf section*

